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Accounting Stream

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Loan Initiation and Audit Pricing

We examine the effect of lenders' certification for pricing of auditing services for the borrowers. We find that audit fees decrease after obtaining a new loan from banks, suggesting that banks' certification of firms' future performance has decreased auditors' perceived risks associated with their clients. Furthermore, we show that the certification effect is stronger among firms associated with higher *ex ante* risk measured by *ex ante* leverage and cash-flow volatility. Our study contributes to both auditing and banking literature by documenting that lenders' certification has significant impact on one of the important capital market participants, auditors.

Introduction

The purpose of this study is to provide empirical evidence on the implication of loan initiation for the pricing of audit services. Banks play an important certification role in private lending. Public announcements of a loan approval signal to the market that lenders have confidence in the borrower's future prospects and its ability to meet scheduled loan repayments. Moreover, lenders are committed to monitor compliance with loan covenants throughout the term of lending contract. According to the finance theory, the event of loan initiation is expected to have a favorable effect on firm value (Ramakrishnan & Thakor 1984; Fama 1985). Consistent with this view, several empirical studies show that such event generates positive returns to the borrowing firms' equity (James 1987; Billett et al. 1995; Datta et al. 1999; Ross 2011). Bushman and Wittenberg-Moerman (2012) also finds a relatively more pronounced announcement effect of bank certification when lenders are reputable. The finance literature is nonetheless silent on the effect of loan initiation and bank monitoring on audit pricing. To the extent that the signal conveyed by loan initiation is credible, we posit that it provides new information to auditors, allowing them to lower audit risk assessment, gather less audit evidence and reduce audit fees from the level prevailing prior to loan initiation.

However, the traditional risk-based audit fee literature has argued that a high debt level increases the borrower's default risk and, in response to rising audit risk, auditors devote greater audit effort and charge a risk premium (Simunic 1980; O'Keefe et al. 1994; Abbott et al. 2006; Basioudis & Francis 2007). Since loan initiation raises the level

of debt, audit fees are expected to increase following loan initiation, rather than decrease as implied by the finance theory. The apparent contradictory predictions about audit fees-debt relationship are not surprising given that most audit researchers do not explicitly consider the certification and monitoring roles played by lenders. There are two exceptions, however. Gul and Tsui (1998) find that the positive audit fees-free cash flow association is weakened as the level of debt increases. In a similar vein, Gul and Goodwin (2010) report a stronger negative relation between short-term debt and audit fees for firms with low credit ratings, compared to those with high ratings. Collectively, evidence from these two studies suggests that lenders' monitoring provides an effective discipline of the borrower, especially when its credit standing is poor. This in turn prompts auditors to revise audit risk downwards, exert less audit effort and reduce audit fees.

Like Gul and Tsui (1998) and Gul and Goodwin (2010), we also recognize that the audit fees-debt relationship is more complex than is depicted in the audit fee literature. We complement their findings by showing that, in addition to monitoring, lenders' certification also serves as a valuable input to auditors when assessing the overall audit risk for clients involved in private lending activities. Moreover, we argue that lenders' certification is of particular value to auditors when lenders face an elevated risk of incurring substantial financial loss in the event of loan default. The extra care taken by lenders to screen out unworthy loan applications in this case is expected to strengthen the credibility of signal conveyed by the event of loan approval, bringing audit fees down even further. To the best of our knowledge, we are the first research team to examine changes in audit fees surrounding the year of loan initiation.

Our sample consists of 2,775 firm-year observations between 2001 and 2008, with complete audit, financial and loan information from *Audit Analytics*, *Compustat* and Loan Pricing Corporation's *Dealscan*, respectively.¹ To mitigate the concern that audit pricing and loan initiation may be endogenously determined, we focus on changes in audit fees surrounding loan initiation by using an event study research design where the loan initiation year is designated as Year t and the pre- (post-) initiation period is defined to include Year t (Years t and $t+1$). The overall analysis calls for regressing the natural logarithm of audit fees on a test variable $POST$, coded as 1 if an observation falls in the post-initiation period and zero otherwise. After controlling for factors identified as affecting audit fees in prior literature, we expect the borrowing firm's audit fees to decrease from the pre- to the post- initiation period due to benefits from lenders' certification.

Results indicate that on average the borrower pays 4.5% less audit fees in the post-initiation period, compared to the pre-initiation period. These results continue to hold when we replace the test variable $POST$ with two new test variables, D_t and D_{t+1} , to

¹ The specific number of firm-year observations varies slightly across regressions due to availability of regression variables.

represent the loan initiation year (Year t) and the year immediately following loan initiation (Year $t+1$), respectively. While the percentage of fee reduction in Year t is less than that in Year $t+1$ (4.11% vs. 4.97%), it is nonetheless statistically significant at the conventional levels, lending support for the main findings that auditors view lenders' certification at the inception of loan favorably and reduce audit fees accordingly. Using a three-step propensity score matching procedure to control for the potential endogeneity in borrower-lender relationship does not alter any of the results qualitatively speaking.

We next conduct more refined analysis by partitioning the full sample based on lenders' screening effort, measured by lenders' reputation and the size of deal amount. Reputable lenders and lenders who arrange large deal amounts are expected to exert more screening effort, compared to lenders with low reputation and those involved in small deal amounts. Consistent with these predictions, we find that the observed overall fee reduction following loan initiation derives mainly from subsets of firms whose loans are arranged by reputable lenders and whose loan size is large. The percentages of fee reduction over the pre-initiation period are 8.88% and 5.82%, respectively. For firms with non-reputable lenders or small deal amounts, there is little change to audit fees from the pre- to the post-initiation period. We also partition the full sample based on borrowers' *ex ante* financial risk, proxied separately by leverage ratio and cash-flow volatility. Borrowers with high leverage ratios and highly volatile cash flows are expected to receive more intense screening from lenders, compared to borrowers with low leverage ratios and stable cash flows. As predicted, we do not find any evidence of fee reduction in low-risk borrowing firms, whereas high-risk borrowers enjoy on average a 5.45% (6.76%) reduction in audit fees when the leverage ratio (cash-flow volatility) measure is used.

Rather than inferring the intensity of lenders' screening effort from the aforementioned indicators, auditors may rely on contracting terms, such as the cost of borrowing, the length of loans and the number of financial covenants contained in most lending contracts, as indirect evidence of lenders' assessment of the borrower's financial health and the viability of its proposed project. As a further analysis, we consider the pricing implications of each of these publicly observable contracting terms by partitioning the entire sample into two subsets. Results indicate that auditors reduce audit fees by, respectively, 7.04%, 3.25% and 4.69% from the pre-initiation level when the cost of borrowing is low, loans have short maturity and contracts stipulate at least some financial covenants. However, there is no evidence of changes to audit fees for loans with high cost of borrowing, long maturity or no financial covenants.

We contribute to the academic literature in two ways: First, we extend the work by Fortin and Pittman (2004) who show that retaining a Big-6 auditor enhances the credibility of financial statements and reduces debt-monitoring costs, which in turn allow young firms to lower their borrowing costs. However, the authors do not speak to the question of whether auditors take the cues from lenders' certification of their clients' "soft" forward-looking information. Our contributions lie in documenting that lenders'

processing of such information is an important piece of input used by auditors to determine the amount of work required to support their audit opinion on “hard” financial statement information. Second, we add to the debt-contracting literature by presenting evidence that lenders’ certification is appreciated by not just the investing community, but also another important capital market participant, i.e., auditors. While on the surface lenders and auditors appear to have different roles to play in the capital market, their functions actually complement each other.

The remainder of the paper is organized as follows: Section 2 reviews relevant literature and present the hypotheses for the study; Section 3 discusses the research design, along with variable definitions and measurements; Section 4 describes the data and sample selection procedure; Section 5 reports the main empirical findings, followed by further analysis in Section 6; Section 7 concludes the paper.

Literature Review and Hypotheses Development

Banks play an important certification role in the capital market through their involvement in private lending. As part of due diligence during the loan approval process, lenders seek historical as well as forward-looking information about the borrower to reduce the likelihood of default on subsequent loan repayments. Since only projects that lenders hold optimistic views of are approved for funding, the event of loan initiation is believed to convey a favorable signal about the borrower’s future prospects (Ramakrishnan & Thakor 1984; Fama 1985; Diamond 1991). In support of this argument, the empirical finance literature documents a positive market reaction to the announcement of private or bank loans (James 1987; Best & Zhang 1993; Preece & Mullineaux 1994; Billet, Flannery & Garfinkel 1995; Demiroglu & James 2010). Benefits of new loans can nevertheless arise beyond lenders’ certification at the inception of loan. Throughout the term of loan contract, lenders continue to monitor the borrower’s compliance with financial covenants (Chava & Roberts 2008; Roberts and Sufi 2009) and ensure that projects which are no longer viable are discontinued (Ranjan 1992). The ongoing monitoring by lenders has been found to improve the borrower’s market value, especially in situations where agency problems are severe (Shepherd, Tung & Yoon 2008).

Unlike the above finance literature, our interest in this study is in the effect of lenders’ certification on audit risk assessment and the pricing of audit services. The traditional risk-based audit literature has focused on the relationship between the *level* of debt and audit fees, holding aside any consideration for lenders’ certification and monitoring (Abbott et al. 2006; Basioudis & Francis 2007; Choi et al. 2008). The general conclusion is that a higher level of debt increases the borrower’s default risk. The resulting higher audit risk assessment prompts auditors to gather more audit evidence and charge a fee premium (Simunic, 1980). However, the positive audit fees-debt relationship may not always hold, especially when benefits from lenders’ monitoring are explicitly taken into account. Gul and Tsui (1998) for example find that free cash flows and audit

fees are not as positively related for low growth firms with high debt level, compared to similarly low growth firms with low debt level. Gul and Goodwin (2010) argue that lenders provide relatively closer monitoring of short-term debt, implying a positive relationship between audit fees and debt level. We complement these two studies to examine the role that lenders' certification may play in affecting audit pricing, motivated by the belief that auditors may revise audit risk assessment downward and reduce audit fees for clients who have passed a rigorous screening and who are subject to further lenders' scrutiny over the duration of the loan.

In the aftermath of major corporate scandals in late 1990s and early 2000s, researchers have devoted much attention to the impact of corporate governance on audit fees. The focus in that line of research is on the attributes of internal governance mechanisms, such as the size, expertise, tenure or independence of corporate boards and audit committees, frequency of meetings and remuneration of directors and committee members (see Hay et al. 2006 for a review). According to Abbott, Parker, Peters and Raghunandan (2003), firms with an effective audit committee tend to pay lower audit fees. Carcello, Hermanson, Neal and Riley (2002) show that audit fees are negatively associated with board independence, expertise and diligence. Finally, Tsui, Jaggi and Gul (2001) report that auditors put in lesser effort and charge lower fees when clients assign the positions of CEO and COB to different persons. Drawing on insight from this literature, we expect the strength of external governance provided by lenders to have a similarly favorable effect on audit fees. The above discussion leads to the first hypothesis for the study:

H1: *Ceteris paribus*, the event of loan initiation is expected to lower audit fees from the pre- to the post-initiation period.

A priori, we expect the benefits from lenders' certification to vary across audit clients because not all borrowers receive the same degree of screening effort from lenders. The intensity of screening is nevertheless unobservable to auditors, who must infer lenders' effort indirectly from a wide range of publicly observable indicators. The first set of indicators that we consider in this study relates to lender-specific attributes, such as lenders' reputation and the size of deal amount. A recent study by Ross (2010) finds that stock market responds more favorably to loan announcements when loans are syndicated by reputable lenders. In a similar vein, Bushman and Wittenberg-Moerman (2012) report that firms that borrow from reputable banks have higher earnings quality, as measured by earnings persistence. An implication from these studies is that lenders' screening effort is directly related with their reputation. More reputable lenders put in greater effort, which raises the likelihood of denying loan applications submitted by unworthy borrowers and enhances the credibility of lenders' certification. In addition to lenders' reputation, lenders are also expected to apply more rigorous evaluation standards and devote greater effort to information-gathering activities about the prospective borrower when the deal amount is large, compared to the case when it is small. More intense screening in the former case is expected to enhance the value of lenders' certification, so much so that it

can outweigh any adverse effect that a rising debt level may have on audit fees. The above discussion leads to the second hypothesis for the study:

H2: *Ceteris paribus*, the event of loan initiation is expected to lower audit fees from the pre- to the post-initiation period when lenders' screening effort is high, compared to the case when lenders' screening effort is low.

Variations in the benefits of lenders' certification can also arise from differences in the level of *ex ante* financial risk facing borrowing firms. In particular, firms with high leverage and highly volatile cash flows carry greater risk of defaulting on future loan repayments than those with low leverage and stable cash flows. If notwithstanding the borrower's significant *ex ante* financial risk lenders choose to approve loan applications, then the event of loan initiation can serve to alleviate any concern auditors may have about the borrower's future prospects, allowing them to revise both audit risk assessment and audit fees downwards. The above discussion leads to the final hypothesis for the study:

H3: *Ceteris paribus*, the event of loan initiation is expected to lower audit fees from the pre- to the post-initiation period when borrowers face high *ex ante* financial risk, compared to the case when borrowers face low *ex ante* financial risk.

Research Design

To test the prediction of the first hypothesis (H1) for the study, we estimate the following regression pooled over the entire (2001-2008) sample period:²

$$\begin{aligned}
 LOGAF = & \alpha_0 + \alpha_1 POST + \alpha_2 LEV + \alpha_3 VOLATILITY + \alpha_4 GC + \alpha_5 LITIGATION + \\
 & \alpha_6 RETURN + \alpha_7 ROA + \alpha_8 LOSS + \alpha_9 MTB + \alpha_{10} SIZE + \alpha_{11} RECINV + \\
 & \alpha_{11} BUSSEG + \alpha_{12} FOREIGNSEG + \alpha_{13} LAG + \alpha_{14} BIGN + \alpha_{15} BUSY + \alpha_{16} AC + \\
 & Year\ Fixed\ Effect + Industry\ Fixed\ Effect + \epsilon
 \end{aligned}
 \tag{1}$$

where the dependent variable *LOGAF* denotes the natural logarithm of audit fees. The test variable in Equation 1 is the indicator variable, *POST*, set to one if an observation falls in the post-initiation period (Years *t* and *t+1*) and zero otherwise. The coefficient on *POST*, i.e., α_1 , captures the incremental effect of loan initiation on audit pricing for the post-initiation period over the reference group of Year *t-1* (i.e., the pre-initiation period).

² Throughout the paper, we refer to our sample period as years (i.e., Years *t-1*, *t* and *t+1*) from which firm-year observations are drawn. The event of loan initiation (Year *t*), discussed in Section 4, is extracted from a seven-year (2001-2007) period. All continuous variables in Equation 1 are winsorized at the top and bottom one percentile of respective distributions to mitigate the impact of extreme values on the parameter estimates.

We expect the coefficient to be significantly negative (positive) if the benefits from lenders' certification exceed (are exceeded by) the increased default risk arising from a higher debt level following loan initiation.

Equation 1 also controls for the following factors put forth in prior research as determinants of audit fees (see a review by Hay et al. 2006):³ First, audit risk using eight proxies: leverage ratio defined as total long-term debt over total assets (*LEV*); return volatility measured by the standard deviation of daily stock returns for the twelve month period ending in the last month of current fiscal year (*VOLATILITY*); going-concern reservation, set equal to one if the borrower received a going-concern opinion in the current fiscal year and zero otherwise (*GC*); the borrower's exposure to litigations, captured by an indicator variable set equal to one if the borrower's primary SIC code is one of the following: 2833-2836, 3570-3577, 3600-3674, 5200-5961 or 7370-7374, and zero otherwise (*LITIGATION*); raw buy-and-hold stock returns, measured over the current fiscal year (*RETURN*); return on assets defined as net income divided by total assets (*ROA*); current year's loss, set equal to one if the borrower reported a loss in the current year and zero otherwise (*LOSS*); and the borrower's growth potential measured by market-to-book ratio (*MTB*). Second, audit complexity captured in five ways: auditee size, given by the natural logarithm of the borrower's total assets (*SIZE*); the sum of total receivables and total inventory divided by average total assets (*RECINV*); the number of business segments (*BUSSEG*) and the number of foreign segments (*FOREIGN*) in the borrowing company; the reporting lag (*LAG*) defined as the number of days between the fiscal year-end and the auditor's report signing date. Third, audit quality, set equal to one if the borrower retains a Big N auditor and zero otherwise (*BIGN*). Fourth, the timing of audit, set equal to one if the borrower's fiscal yearend is December and zero otherwise (*BUSY*). Fifth, the change of auditors, set equal to one if the borrower switches auditors in the current fiscal year and zero otherwise (*AC*). This control is intended to rule out low-balling as a possible cause of reduction in audit fees from the pre- to the post-initiation period. Firms that contemplate taking on new private loans may replace the incumbent auditor, either voluntarily to lower the cost of debt (Fortin and Pittman 2004) or at the request of lenders to safeguard against fraudulent financial reporting (Watts and Zimmerman 1986). Low-balling in the first year of audit engagements can lower audit fees from the pre-initiation level even though audit quality may have remained unchanged or even improved.

Following prior research, we expect *LOGAF* to be positively related to *LEV*, *VOLATILITY*, *GC*, *LITIGATION*, *LOSS*, *MTB*, *SIZE*, *RECINV*, *BUSSEG*, *FOREIGN*, *LAG*, *BIGN* and *BUSY*, but negatively associated with *RETURN*, *ROA* and *AC*. Since our sample firms (discussed in the next section) are drawn from many industries over multiple years, we also include both the *Year* and the *Industry* fixed effects in Equation 1.

³ Unless otherwise indicated, all the continuous control variables are measured at the end of current fiscal year (Year *t*) and the indicator variables refer to the applicable status of the borrower in the current fiscal year.

The former consists of seven indicator variables set to one if an observation comes from fiscal years 2001, 2002, 2003, 2004, 2005, 2006 and 2007, respectively, and zero otherwise; and the latter has seven indicator variables set to one if the first digit of the borrower's SIC code is 1, 2, 3, 4, 5, 7, and 8, respectively, and zero otherwise. All the variable definitions and measurements for Equation 1 are summarized in the Appendix.

To test the predictions of H2, we use two proxies to capture the level of lenders' screening effort: lenders' reputation and the size of deal amount. For the first proxy, we follow Sufi (2007) and Bushman and Wittenberg-Moerman (2012) to classify a loan as syndicated by a reputable lender if at least one of the lead lenders in the syndicate has more than 2% of the syndicated loan market in the year right before the loan issuance, whereas the remaining loans are classified as syndicated by a non-reputable lender. We then re-estimate Equation 1 separately for the "Reputable" and "Non-reputable" subsamples. Findings that the coefficient on *POST*, i.e., α_1 , is significantly negative in the "Reputable" subsample, but not so in the "Non-reputable" subsample are consistent with H2. For the second proxy, we re-estimate Equation 1 separately for the subset of firms partitioned according to the ratio of deal amount over the borrower's total assets. Firms whose ratios exceed the overall sample median are referred to as "Large Issue" and those with ratios below the sample median are labeled "Small Issue". Evidence that α_1 is significantly negative in the "Large Issue" subsample, but insignificantly different from zero in the "Small Issue" subsample lends support for the predictions of H2.

Finally, to test Hypothesis H3, we use the borrower's *ex ante* financial risk, proxied by leverage ratio and cash-flow volatility, to partition the full sample. Specifically, firms are said to have high (low) *ex ante* financial risk if their *ex ante* leverage ratios or *ex ante* cash-flow volatility exceed (are exceeded by) the corresponding median value for the full sample. The predictions of H3 are supported if α_1 is significantly negative in the "High Risk" subsample, but not in the "Low Risk" subsample.

Data and Sample Selection

The key data for our study are loan initiations obtained from *Dealscan*. According to the data provider, Loan Pricing Corporation, their primary data source (60%) is the Securities and Exchange Commission filings⁴ with the balance (40%) obtained from direct contact with borrowers and lenders. *Dealscan* includes between 50% and 75% of all commercial loans in the United States during the early 1990s (Carey & Hrycray 1999) and the coverage has been steadily increased in recent years. The basic unit of an observation in *Dealscan* is a loan, also known as a facility or tranche. For most loans, *Dealscan* contains information on loan amount, deal active date, maturity date, covenants, collateralization requirements and the cost of borrowing measured by the number of basis points above the London Interbank Offered Rate (LIBOR). The loans are

⁴ They include 13Ds, 14Ds, 13Es, 10Ks, 10Qs, 8Ks and registration statements.

normally packaged together into deals with different purposes, amounts, costs of borrowing and maturities.

To construct the loan initiation sample, we restrict the loan initiation year to a seven-year period between 2001 and 2007. The starting point is chosen because audit-related information, another key data for this study, is only available from the *Audit Analytics* database since 2000. We end the sample period in 2007, as our research design requires audit fees from not just the year of loan initiation (i.e., Year t), but also two years surrounding the loan initiation year (i.e., Year $t-1$ and Year $t+1$).

We obtain accounting and financial data from *Compustat* and use the *Compustat-Dealscan* link provided by Chava and Roberts (2008) to merge these two databases based on the identifier *GVKEY*. The initial sample consists of 17,862 loans in 12,971 deals issued by 4,194 firms. For deals containing multiple loans, we keep the loan with the largest amount in the sample following the convention of Sunder *et al.* (2009) and Nikolaev (2010). This filter reduces the sample to 10,855 loans by 4,194 firms between 2001 and 2007. To avoid complications in interpreting the effect of loan initiation on audit fees, we require that firms do not issue loans in two years on either side of the loan initiation year, i.e., Years $t-2$, $t-1$, $t+1$ and $t+2$, reducing the size of our loan initiation sample to 2,340 loans issued by 1,951 firms.

We next obtain audit-related data from the *Audit Analytics* database. At the time of data extraction, the database's total coverage includes 51,706 firm-year observations for 8,595 firms between 2001 and 2008. Merging data from *Audit Analytics* with the above loan initiation sample and imposing the requirements that audit fees be available for Years $t-1$, t and $t+1$ result in the final sample of 2,775 firm-year observations from 1,020 firms. Among them, 856 firms were involved in one loan initiation each and 156 (eight) firms initiated two (three) loans each, for a total of 1,192 loans issued between 2001 and 2007. Table 1 summarizes the above sample selection procedures.

Table 1. Sample Selection Procedures (Sample Period: 2001-2008)			
	# of Firms	# of Loans	# of Deals
<i>Dealscan</i> Database			
Total loans issued between 2001-2007	4,194	17,862	12,971
Keep the largest issuance for each deal every year	4,194	10,855	10,855
Keep loans not surrounded by loan issuances in Year $t-1$ and $t+1$	1,951	2,340	2,340
<i>Audit Analytics</i> Database			
Firm-years with audit fees data in 2001-2008	8,595	51,706	
<i>Audit Analytics</i> and <i>Dealscan</i> Databases			
Firms issued loans in Year t and have audit fees data in Years $t-2$, $t-1$, t , and $t+1$	1,020	2,775	

Main Results

Descriptive Statistics

Panel A of Table 2 presents descriptive statistics for Equation 1 model variables, calculated over 805 and 1,970 firm-year observations in the pre- and the post-initiation periods, respectively. While both the mean and the median audit fees (*LOGAF*) are significantly higher in the post-initiation period than in the pre-period (13.034 vs. 13.131), the increase is nevertheless accompanied by an elevated audit risk and an increase in audit complexity. Take the variable *LEV* for example. The mean value goes up from 0.168 to 0.200, significant at the 1% level. On average, firms are also associated with relatively lower return (*RETURN*, 0.193 vs. 0.138) and greater size (*SIZE*, 5.774 vs. 5.891) in the post-initiation period. The concurrent changes to some of the control variables point to the importance of examining the effect of loan initiation on audit fees in a multivariate setting, as we do in the next section.

Panel B of Table 2 presents descriptive statistics for both the partitioning variables used in our sub-sample analysis and several key terms of lending contracts. Out of 1,192 loans issued between 2001 and 2007, about 39.6% were arranged by reputable lenders. The average deal amount, at \$231 million, is much larger than \$189 million reported in Chava and Roberts (2008) using the *Dealscan* database due to the inclusion of private firms that borrow less in our sample. The average *ex ante* leverage ratio is 0.180, whereas the average *ex ante* cash-flow volatility is 0.1. On average, the cost of borrowing is 191 basis points above LIBOR and loan maturity is 46 months. Both figures are similar to those reported in Chava and Roberts (2008) using the *Dealscan* database. Finally, 77% of our sample loans include financial covenants in loan contracts.

Table 2. Descriptive Statistics

Panel A. Descriptive Statistics for Dependent and Independent Variables (Equation 1)								
Variables	Pre-Loan Initiation (N=805)			Post-Loan Initiation (N=1,970)			Test of Difference	
	Mean	Media n	Std.Dev .	Mean	Median	Std.Dev.	t-test	z-test
<i>LOGAF</i>	13.034	12.953	1.225	13.131	13.100	1.185	-1.952*	-2.110**
<i>LEV</i>	0.168	0.119	0.191	0.200	0.156	0.213	3.698***	3.700***
<i>VOLATILITY</i>	0.036	0.030	0.019	0.036	0.031	0.019	-0.695	-0.999
<i>GC</i>	0.010	0.000	0.099	0.018	0.000	0.134	-1.596	-1.595
<i>LITIGATION</i>	0.333	0.000	0.471	0.337	0.000	0.473	-0.209	-0.209
<i>RETURN</i>	0.193	0.083	0.666	0.138	0.026	0.666	1.988**	2.720***
<i>ROA</i>	0.007	0.040	0.196	0.014	0.040	0.179	-0.917	-0.335
<i>LOSS</i>	0.266	0.000	0.442	0.284	0.000	0.451	-0.955	-0.955
<i>MTB</i>	2.757	1.963	5.183	2.442	1.816	4.526	1.597	1.664*
<i>SIZE</i>	5.774	5.726	1.546	5.891	5.848	1.530	-1.829*	-1.860*

<i>RECINV</i>	0.320	0.300	0.192	0.311	0.291	0.191	1.047	1.121
<i>BUSSEG</i>	2.262	1.000	1.524	2.297	2.000	1.558	-0.546	-0.455
<i>FOREIGNSE</i>								
<i>G</i>	1.391	1.000	2.080	1.463	1.000	2.148	-0.805	-0.466
	103.76			104.82				
<i>LAG</i>	2	101	55.209	3	100	55.644	-0.457	-0.096
<i>BIGN</i>	0.861	1.000	0.346	0.849	1.000	0.358	0.784	0.784
<i>BUSY</i>	0.683	1.000	0.466	0.668	1.000	0.471	0.800	0.800
<i>AC</i>	0.066	0.000	0.248	0.074	0.000	0.261	-0.721	-0.721

Panel B. Descriptive Statistics for Partitioning Variables

	N	Mean	Median	Std.Dev.
Reputable Lender	1,192	0.396	0	0.489
Deal Amount (in million \$)	1,192	231	80	596
<i>Ex ante</i> Leverage (<i>LEV_{t-1}</i>)	1,190	0.180	0.134	0.194
<i>Ex ante</i> Cash-flow Volatility (<i>CFV_{t-1}</i>)	1,192	0.100	0.062	0.132
Cost of Borrowing (in bps)	1,192	191.379	175	112.904
Maturity (in months)	1,192	45.738	48	20.745
Financial Covenants	1,192	0.770	1	0.421

*, **, *** Significant at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed).
For variable definitions, please refer to Appendix.

Multivariate Results from Test of Hypothesis H1

Table 3 presents the regression results from estimating Equation 1 over the full sample of 2,775 firm-year observations. After controlling for the potential effects of covariates, we find that the coefficient estimate (*t*-statistics) on the test variable *POST* is negative and significant at the 5% level, i.e., $\alpha_1 = -0.046$ (-2.190). The percentage of reduction in audit fees from the pre-initiation period to the post-period, at 4.50%, is economically significant and lends support for the prediction of Hypothesis H1. The coefficients on control variables are generally consistent with the existing literature. In particular, firms with a high audit risk and more complex audits and those audited by Big N auditors during busy season are found to pay higher audit fees.⁵ Finally, the auditor change variable (*AC*) does not appear to affect audit fees, a finding that is not surprising given that on average only about 6.6% and 7.4% of our sample firms switch auditors in the pre- and post-initiation periods, respectively.

In the above analysis, we have combined Years *t* and *t+1* into a single test variable *POST* for reason that the event of loan initiation may have taken place near the end of

⁵ The coefficients (*t*-statistics) on the audit-risk related control variables are *VOLATILITY* = 3.506 (3.794) and *LOSS* = 0.161 (4.735); audit-complexity related control variables are *SIZE* = 0.502 (35.857), *RECINV* = 0.466 (5.178), *BUSSEG* = 0.068 (6.182), *FOREIGNSE* = 0.031 (3.100) and *LAG* = 0.001 (4.120); and audit quality *BIGN* is 0.371 (8.244); and the timing of audit *BUSY* is 0.271 (7.324).

Year t . By then, much of the audit work for Year t would have already been completed, resulting in little savings on audit fees. To check for the robustness of our main results, we now re-estimate Equation 1 after replacing *POST* with two new test variables, D_t and D_{t+1} , to represent the loan initiation year (Year t) and the year immediately following loan initiation (Year $t+1$), respectively, and report results in Table 4 [at end of paper].

The coefficient estimates (t -statistic) on D_t and D_{t+1} , at -0.042 (-2.000) and -0.051 (-2.125), amount to a reduction of 4.11% and 4.97% in audit fees in Year t and Year $t+1$, respectively. While the decrease is less in Year t than in Year $t+1$, it is nevertheless statistically significant at the 10% level, re-enforcing the main findings that lenders' certification contributes to audit fee reduction at the inception of the loan. The relatively larger decline in audit fees in Year $t+1$ may be attributable to recognition given by auditors to lenders' monitoring, in addition to capturing the benefits of lenders' certification for loans initiated near the end of Year t . These results imply that lenders' monitoring is also of value to auditors, as documented by Gul and Tsui (1998) Gul and Goodwin (2010). Finally, results on all the control variables are very similar to those reported in Table 3.

Table 3. Main Analysis: Effect of Loan Initiation on Audit Fees (Hypothesis H1)

	Full Sample Coefficient Estimates (t-Statistics)
<i>POST</i>	-0.046** (-2.190)
<i>LEV</i>	-0.015 (-0.176)
<i>VOLATILITY</i>	3.506*** (3.794)
<i>GC</i>	0.209 (1.620)
<i>LITIGATION</i>	0.056 (1.366)
<i>RETURN</i>	-0.021 (-1.400)
<i>ROA</i>	-0.119 (-1.488)
<i>LOSS</i>	0.161*** (4.735)
<i>MTB</i>	0.003 (1.000)
<i>SIZE</i>	0.502*** (35.857)
<i>RECINV</i>	0.466*** (5.178)
<i>BUSSEG</i>	0.068*** (6.182)
<i>FOREIGNSEG</i>	0.031*** (3.100)
<i>LAG</i>	0.001*** (4.120)
<i>BIGN</i>	0.371*** (8.244)
<i>BUSY</i>	0.271*** (7.324)
<i>AC</i>	-0.065 (-1.477)
<i>INTERCEPT</i>	8.006*** (44.978)
<i>Year Fixed Effects</i>	Yes
<i>Industry Fixed Effects</i>	Yes

No. of Firm-Year Observations	2,775
No. of Firms	1,020
Adjusted R²	77.8%

This table presents results of testing the association between audit fees and loan initiation. *, **, *** Significant at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed). For variable definitions, please refer to Appendix.

Multivariate Results from Test of Hypothesis H2

Table 5 presents regression results from estimating Equation 1 separately for subsets of firms whose lenders exert high vs. low screening effort.

For the first proxy considered in this analysis, we partition the full sample into two subsets, the “Reputable” and “Non-Reputable” subsamples consisting of 969 and 1,806 firm-year observations, respectively. The coefficient estimate (*t*-statistics) on the test variable *POST* is significantly negative at the 5% level in the “Reputable” subsample, i.e., $\alpha_1 = -0.093$ (-2.214), whereas it is insignificantly different from zero in the “Non-Reputable” subsample, implying that auditors value lenders’ certification of new loans only when lenders have strong reputation (see Panel A). We next re-estimate Equation 1 by partitioning the full sample using the second proxy for lenders’ screening effort, i.e., the magnitude of deal amount. The coefficient estimate (*t*-statistics) on *POST* for the 1,324 firm-year observations in the “Large Issue” subsample is negative and significant, i.e., $\alpha_1 = -0.060$ (-2.000), and that for the 1,451 firm-year observations in the “Small Issue” subsample is not statistically significant (see Panel B). The percentages of fee reduction from the pre- to the post-initiation period in the “Reputable” and “Large Issue” subsamples are economically significant and moreover they are more pronounced than the corresponding reduction observed previously for the full sample (i.e., 8.88% and 5.82% vs. 4.50%). Almost all the control variables have similar signs and significance levels as those reported in Table 3.

Taken together, these results lend support for the prediction that more intense screening effort by reputable lenders or lenders involved in large issues enhances the benefits from lenders’ certification. This in turn allows auditors to gather less audit evidence and charge lower audit fees, as predicted in Hypothesis H2.

Table 5. Subsample Analysis by Lenders' Screening Effort (Hypothesis H2)

	Coefficient Estimates (<i>t</i> -Statistics)			
	Panel A		Panel B	
	Reputable Lender	Non-Reputable Lender	Large Issue	Small Issue
<i>POST</i>	-0.093** (-2.214)	-0.027 (-1.125)	-0.060** (-2.000)	-0.033 (-1.138)
<i>LEV</i>	-0.036 (-0.310)	0.014 (-0.118)	-0.046 (-0.469)	-0.015 (-0.103)
<i>VOLATILITY</i>	4.046** (2.016)	2.998*** (2.753)	4.112*** (3.300)	2.857** (2.174)
<i>GC</i>	0.089 (0.380)	0.273* (1.773)	0.181 (0.905)	0.227 (1.645)
<i>LITIGATION</i>	0.071 (1.030)	0.057 (1.163)	0.078 (1.444)	0.051 (0.895)
<i>RETURN</i>	-0.019 (0.633)	-0.017 (-1.000)	-0.024 (-1.091)	-0.018 (-0.818)
<i>ROA</i>	-0.201 (-0.674)	-0.095 (-1.092)	-0.013 (-0.131)	-0.249* (-1.858)
<i>LOSS</i>	0.187*** (2.922)	0.154*** (3.850)	0.207*** (4.500)	0.133*** (2.830)
<i>MTB</i>	0.001 (0.200)	0.004 (1.333)	0.002 (0.500)	0.004 (1.000)
<i>SIZE</i>	0.524*** (23.818)	0.480*** (24.000)	0.507*** (24.143)	0.503*** (26.474)
<i>RECINV</i>	0.644*** (4.155)	0.401*** (3.750)	0.293** (2.421)	0.650*** (4.745)
<i>BUSSEG</i>	0.073*** (4.563)	0.058*** (3.867)	0.073*** (4.867)	0.064*** (4.000)
<i>FOREIGNSEG</i>	0.044*** (3.385)	0.020 (1.538)	0.024*** (1.412)	0.038*** (3.800)
<i>LAG</i>	0.001*** (5.212)	0.002*** (5.213)	0.001*** (2.910)	0.001*** (29.674)
<i>BIGN</i>	0.337*** (3.786)	0.417*** (7.722)	0.372*** (6.526)	0.350*** (4.545)
<i>BUSY</i>	0.299*** (4.983)	0.252*** (5.860)	0.236*** (4.816)	0.299*** (5.863)
<i>AC</i>	-0.168** (-2.333)	0.014 (- 0.255)	-0.164*** (-2.929)	0.048 (0.706)
<i>INTERCEPT</i>	7.944*** (26.212)	8.060*** (35.822)	7.923*** (31.692)	8.107*** (31.792)
<i>Year Fixed Effects</i>	YES	YES	YES	YES
<i>Industry Fixed Effects</i>	YES	YES	YES	YES
No. of Firm-Year Obs.	969	1,806	1,324	1,451
No. of Firms	379	697	536	534
Adjusted R²	76.9%	73.4%	76.6%	77.2%

*, **, *** Significant at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed). For variable definitions, please refer to Appendix.

Multivariate Results from Test of Hypothesis H3

Table 6 [at end of paper] presents regression results from estimating Equation 1 separately for subsets of firms with high vs. low *ex ante* financial risk.

For the 1,272 firm-year observations with the above median leverage ratios in the pre-initiation period (i.e., LEV_{t-1}), we find that on average audit fees decrease by 5.45% from the pre- to the post-initiation period ($\alpha_1 = -0.056$, *t*-statistics = -1.750 ; see Panel A), but they remain unchanged among 1,494 firm-year observations with the below median

leverage ratios.⁶ Results continue to hold when we partition the sample based on *ex ante* cash-flow volatility (i.e., CFV_{t-1}). While there is no evidence of significant changes to audit fees surrounding the event of loan initiation for the 1,352 firm-year observations with low cash-flow volatility, audit fees nevertheless decline significantly by about 6.76% for the 1,298 firm-year observations with high cash-flow volatility ($\alpha_1 = -0.070$, t -statistics = -2.414 ; see Panel B).⁷ Regardless of the choice of proxy for the borrower's *ex ante* financial risk, the extent of fee reduction for high-risk borrowers is consistently larger than that for the overall sample (i.e., 5.45% and 6.76% vs. 4.50%).

In short, we find results consistent with the predictions of Hypothesis H3. It would appear that benefits from lenders' certification have implications for audit pricing for high-risk borrowers only. A possible explanation is that these firms receive much closer scrutiny of their loan applications than low-risk borrowers. The extra effort by lenders is welcomed by auditors and used in assessing audit risk and pricing their audit services.

Endogeneity of Loan Initiation and Audit Fees

Audit pricing and loan initiation may be endogenously determined. For example, firms facing high financial risk are less likely to succeed in securing additional loans, but tend to pay higher audit fees, resulting in a spurious negative association between audit fees and loan initiation. We sought to mitigate this concern in the main analysis by studying changes in audit fees for borrowers surrounding the event of loan initiation and using a research design that controls for the borrower's financial risk, as measured by leverage ratio (LEV).

To shed further light on this issue, we now compare the observed pattern of fee changes for the full sample with the corresponding pattern for firms that do not obtain loans over the same time period using a three-step propensity score matching procedure (hereafter PSM) proposed by Dehejia and Wahba (2002).⁸ In Step 1, we estimate the following logistic regression to identify firm characteristics likely to be associated with debt-financing choice:

$$Prob(\text{loan Issue} = 1) = F(LEV, ROA, LOSS, MTB, SIZE, RECINV, BIGN, Industry) \quad (2)$$

where the binary dependent variable is set equal to one for firms that initiate a loan (labeled treatment firms hereafter) and zero for firms that do not initiate a loan (labeled control firms hereafter). The independent variables, LEV , ROA , $LOSS$, MTB , $SIZE$, $RECINV$, $BIGN$ and $Industry$ dummies are as defined in Equation 1. We next calculate each firm's propensity score based on the probability that firms with a given set of characteristics initiate a loan. Finally, we match each treatment firm with a control firm using propensity scores without replacement and requiring the difference in propensity score to be less than 0.5%.

⁶ We drop nine firm-year observations from the full sample in this subsample analysis due to unavailability of data on the partitioning variable, i.e., LEV_{t-1} .

⁷ We drop 125 firm-year observations from the full sample in this subsample analysis due to unavailability of data on the partitioning variable, i.e., CFV_{t-1} .

⁸ PSM conditions selection on observables and allows us to examine abnormal audit pricing of the treatment sample, in comparison with a matched control sample of firms without loan initiation.

For this analysis, we first compare the median value of changes in audit fees from Year $t-1$ to Year t across the treatment and the matched control samples and then repeat the analysis for changes in audit fees from Year $t-1$ to Year $t+1$. There are a total of 1,846 firm-year observations in each set of median comparisons, of which half initiated a loan between 2001 and 2007 and the remaining 50% did not. Since both lenders' screening effort and borrowers' *ex ante* financial risk are not available for firms that do not issue loans, we do not apply the PSM procedure to the test of Hypotheses H2 and H3.

Results, appearing in Table 7, indicate that the median change from Year $t-1$ to Year t is 0.108 for the treatment sample, significantly lower than the corresponding median change of 0.140 for the control sample at the 1% level (Z -value = 2.654, $Pr > |Z| = 0.0079$). These results continue to hold when we compare median changes from Year $t-1$ to Year $t+1$ across these two samples, i.e., 0.250 vs. 0.331 (Z -value = 2.450, $Pr > |Z| = 0.0143$). While for both groups of firms the median audit fees increase from Year $t-1$ to Year t or Year $t+1$, the increase is nevertheless significantly smaller in the treatment sample.

Findings that loan initiation allows firms to pay less audit fees than firms not involved in loan initiation over the same time period lend further support for the prediction of H1. More importantly, they give us confidence that the event study research design that we employ for the main analysis appears to have succeeded in addressing the complications arising from potential endogeneity in the borrower-lender relationship.

Table 7. Robustness Checks Based on the Propensity Score Matching Procedure (Hypothesis H1)

	Year $t-1$ vs. Year t	Year $t-1$ vs. Year $t+1$
<u>Loan Initiation Sample</u>		
Median Value	0.108	0.250
No. of Firm-Year Observations	(923)	(923)
<u>Non-Loan Initiation Sample</u>		
Median Value	0.140	0.331
No. of Firm-Year Observations	(923)	(923)
<u>Median Difference Test (z-test)</u>		
Z-value	2.654	2.450
Prob $> Z $	0.0079	0.0143
No. of Firm-Year Observations	1,846	1,846

Further Analysis

Up till now, we have focused on the implications of lenders' screening effort and borrowers' *ex ante* financial risk for the pricing of audit services, arguing that auditors

can infer both attributes from publicly observable indicators, such as lenders' reputation, the size of deal amount, borrowers' leverage and cash-flow volatility. Stronger screening effort enhances the value of lenders' certification. Lenders' screening however is unobservable to auditors. Under the assumption that lenders' overall evaluation of prospective borrowers should ultimately be reflected in contract terms, we now consider the possibility that auditors may have relied on such public information as evidence of lenders' assessment of the borrower's financial health and the viability of its proposed project (Bharath, Dahiya, Saunders & Srinivasan 2011). In particular, we are interested in the question of whether common contracting terms, such as the cost of borrowing, the length of loans and the presence of financial covenants, have implications for audit risk assessment and pricing of audit services.

According to the finance theory, the cost of borrowing consists of a risk-premium component commensurate with the extent of the perceived default risk facing borrowers. Firms required to pay a high cost of borrowing tend to have a larger default risk than those that pay a low borrowing cost. Since default risk and audit risk are positively related, we expect auditors to make a smaller downwards adjustment to their audit risk assessment and hence audit fees for the former group of audit clients, compared to the latter. To test this conjecture, we partition the full sample into two subsamples, consisting of 496 "High Cost" firms whose loans are priced at the above median basis points over *LIBOR* and 556 "Low Cost" firms whose loans are priced at the below median basis points over *LIBOR*, respectively. The corresponding numbers of firm-year observations are 1,208 and 1,555, respectively.⁹ Panel A of Table 8 [at end of paper] presents results obtained from estimating Equation 1 separately for these two groups of firms. Consistent with our conjectures, the coefficients (*t*-statistics) on the test variable *POST* is negative and significant in the "Low Cost" subsample, i.e., $\alpha_1 = -0.073$ (-2.607), amounting to an average fee reduction of 7.04% in the post-initiation period over the level in the pre-period. In contrast, it is insignificantly different from zero in the "High Cost" subsample.

Unlike the cost of borrowing, the relation between maturity structure and audit fees is less clear. Flannery (1986) suggests that high quality firms are more likely to obtain loans with long maturity. Since firm quality is inversely related with default risk, this implies that borrowers of long-term debt pay relatively lower audit fees, all else held equal. But, Rajan and Winton (1995) posit that lenders can more effectively monitor short-term debt, as it comes up for renewal more frequently than long-term debt. Their argument points to a positive association between audit fees and the maturity structure. On balance, it remains an empirical question as to whether audit fees would decrease following loan initiation for firms with long-term or short-term debt. To shed light on this issue, we partition the full sample into two subsamples based on the maturity term and label 496 (592) firms with the above (below) median term as "Long Maturity" ("Short Maturity"). There are, respectively, 1,277 and 1,498 firm-year observations in these two

⁹ We drop 12 firm-year observations from the full sample in this analysis due to unavailability of data on the partitioning variable, i.e., the cost of borrowing.

subsamples. Estimating Equation 1 separately for these two groups of firms, we find that the coefficient on *POST* is significantly negative for the “Short Maturity” subsample, i.e., $\alpha_1 = -0.06$ (-2.308), and that it is insignificantly different from zero in the “Long Maturity” subsample. The average fee reduction of 6.18% from the pre- to the post-initiation period for firms with short-maturity loans point to the importance of lenders’ monitoring, consistent with evidence reported by Gul and Tsui (1998) and Gul and Goodwin (2010).

As with maturity structure, the relation between financial covenants and audit fees is also ambiguous. On one hand, one may argue that, since financial covenants are often imposed on borrowers perceived to have weak governance and high default risk, auditors may be motivated to gather more audit evidence and charge higher audit fees for these clients than they would otherwise do when lending contracts do not include financial covenants. On the other hand, it has been suggested that financial covenants serve as “trip wires” that can lead to significant shifts in creditor control rights and bargaining power (Beneish & Press 1993; Dichev & Skinner 2002). Borrowers found to be in violations of financial covenants are typically asked to pay higher interest rates and face more restrictions in the future. To the extent that the adverse consequences of technical defaults provide risky borrowers with the incentive not to engage in value-reducing activities, the presence of financial covenants would alleviate, rather than exacerbate, auditors’ concern about the viability of borrowing firms. To address the question of whether auditors view financial covenants contained in lending contracts favorably in practice, we partition the full sample into two subsamples, “With Financial Covenants” and “No Financial Covenants” groups, consisting of 801 and 261 firms (or equivalently 2,163 and 612 firm-year observations), respectively. Estimating Equation 1 separately for these two groups of firms, we find that the coefficient (t-statistic) on *POST* is significantly negative for the “With Financial Covenants” subsample, i.e., $\alpha_1 = -0.048$ (-2.000), whereas it is insignificantly different from zero among firms that do not have financial covenants in their loan contracts. The average fee reduction of 4.69% for the former group implies that auditors consider the presence of financial covenants as serving an effective control.

Taken together, these results suggest that auditors draw on publicly available contract terms agreed to between lenders and borrowers when assessing the audit risks of borrowing firms. In particular, auditors interpret loans with low borrowing costs as evidence that lenders have strong faith in the prospects of borrowing firms and view loans with short maturity term and financial covenants as indicative of strong control. This in turn allows auditors to adjust audit fees downwards.

Conclusion

In this study, we have examined the question of whether benefits from lenders’ certification of new loans may lower auditors’ perceived audit risk associated with their clients and reduce audit fees from the level prevailing prior to loan initiation. Using a sample of private loans issued by U.S. firms between 2001 and 2007, we find that the

event of loan initiation is associated with a significant reduction in audit fees at the overall level, after controlling for a set of well-known determinants for audit fees. Results based on subsample analyses indicate that the effect of lenders' certification on audit pricing derives mainly from situations where a high level of lenders' screening effort can be expected, i.e., when loans are either large in size or are arranged by reputable lenders and if borrowers have high *ex ante* financial risk.

Further analysis shows that auditors also rely on publicly observable contracting terms, such as the cost of borrowing, the length of loans and the presence of financial covenants, to infer lenders' assessment of the borrower's financial health and the viability of its proposed project. In particular, we find evidence of significant fee reduction following loan initiation only when firms face low cost of borrowing or if their loans have short maturity and contain at least some financial covenants.

An implication from our study is that lenders' certification of "soft" forward-looking information presented by audit clients involved in private lending activities is used by auditors to determine the amount of audit work required to support their opinion on "hard" financial statement information and price their audit services. We complement Pittman and Fortin (2004) who report that high quality audits provide assurance on the quality of borrowers' financial reporting and lower the cost of debt. By showing that lenders' certification is valued by another important capital market participant, i.e., auditors, we extend the finance literature which has focused on the announcement effects of loan initiations on the market value of borrowing firms to the investing community.

Several limitations to the study are in order. First, while our audit fees model controls for a number of covariates, it may still suffer from the omitted variable bias which causes both a reduction in audit fees and the event of loan initiation. Second, we only speak to the average effect of loan initiation on audit pricing and do not consider the possibility that auditors may have drawn on the reason for private lending (e.g., leveraged buyouts vs. merger and acquisition) as a further input in their decision process. Notwithstanding these limitations, we believe our study provides an important first step that we hope will spur future research into the way auditors incorporate information from other channels in their assessment of audit risk and pricing of audit services. Finally, to enhance our understanding of how various capital participants interact, it will also be interesting to replicate the current study in jurisdictions where lenders' certification and monitoring may be of more or less value to auditors than in U.S.

APPENDIX. Variable Definition

Regression Variables:

<i>LOGAF</i>	= The logarithm of audit fees;
<i>POST</i>	= An indicator variable that is set to 1 for the borrowing firm's post loan initiation period, and 0 otherwise;
<i>D_t</i>	= An indicator variable that is set to 1 if a firm initiates a loan in the current fiscal year, and 0 otherwise;
<i>D_{t+1}</i>	= An indicator variable that is set to 1 if a firm initiates a loan in the previous fiscal year, and 0 otherwise;
<i>LEV</i>	= Total long-term debt (DLTT) divided by total assets (AT);
<i>VOLATILITY</i>	= The standard deviation of daily returns for the twelve month period ending on the last month of the fiscal year;
<i>GC</i>	= An indicator variable that set to 1 if a sample firm receives a qualified going-concern opinion report, and 0 otherwise;
<i>LITIGATION</i>	= An indicator variable that set to 1 if a firm's SIC code is 2833-2836, 3570-3577, 3600-3674, 5200-5961, or 7370-7374, and 0 otherwise;
<i>RETURN</i>	= Raw buy-and-hold stock return during the fiscal year;
<i>ROA</i>	= Net income (NI) divided by average total assets (AT);
<i>LOSS</i>	= An indicator variable that set to 1 if net income (NI) is negative, and 0 otherwise;
<i>MTB</i>	= Market-to-book ratio calculated as (CSHO × PRCC_F)/CEQ;
<i>SIZE</i>	= The logarithm of average total assets (AT);
<i>RECINV</i>	= The sum of total receivables (RECT) and total inventory (INVT), divided by total assets (AT);
<i>BUSSEG</i>	= The number of business segments;
<i>FOREIGNSEG</i>	= The number of foreign segments;
<i>LAG</i>	= The number of days between the fiscal year-end and the auditor's report signing date.
<i>BIGN</i>	= An indicator variable that set to 1 if a sample firm is audited by one of the Big 5 (4) auditors before (after) year 2002, and 0 otherwise;
<i>BUSY</i>	= An indicator variable that set to 1 if a firm's fiscal year-end month is December, and 0 otherwise;
<i>AC</i>	= An indicator variable that is set to 1 if a firm changed auditor in the current fiscal year, and 0 otherwise.
<i>Year Fixed Effect</i>	= Indicator variables set equal to 1 if the firm-year observation is from the 2001, 2002, 2003, 2004, 2005, 2006 and 2007 fiscal years, respectively, and 0 otherwise;
<i>Industry Fixed Effect</i>	= Indicator variables set equal to 1 if the observation has an industry SIC number with a first digit of 2, 3, 4, 5, 7, 8 and 9, respectively, and 0 otherwise.

APPENDIX. Variable Definition

Partition Variables:

Lender Reputation	= If the loan is (not) syndicated by one of the reputable lead arrangers in the syndicated loan market, then the firm-loan-year observation is partitioned in the “Reputable” subsample (“Non-reputable” subsample). We define the lead arranger as reputable if its average market share in the syndicated loan market is above 2 percent. The market share is measured by the ratio of the amount of loans that the financial intermediary syndicated as a lead arranger to the total amount of loans syndicated in the loan market over our sample period from 2001 to 2007;
Deal Amount	= If deal amount, measured in million dollars, is greater (less) than the sample median, then the firm-loan-year observation is partitioned in the “Large Issue” subsample (“Small Issue” subsample).
Ex ante Leverage <i>(LEV_{t-1})</i>	= If a borrower’s level of leverage in the year prior to loan initiation is greater (less) than the sample median, then the firm-loan-year observation is partitioned in the “High Risk” subsample (“Low Risk” subsample).
Ex ante Cash Volatility <i>(CFV_{t-1})</i>	= The standard deviation of cash flows (divided by lagged total assets) computed over the period $t-6$ to $t-1$. If a borrower’s ex ante cash volatility is greater (less) than the sample median, then the firm-loan-year observation is partitioned in the “High Risk” subsample (“Low Risk” subsample).
Cost of Borrowing	= All in spread drawn over the LIBOR (London Inter-Bank Offering Rate).
Maturity	= The initial term length of a loan, measured in months; if maturity is longer (shorter) than the sample median, then the firm-loan-year observation is partitioned in “Long Maturity” subsample (“Short Maturity” subsample).
Financial Covenants	= An indicator variable, equal to 1 for loans with at least one financial covenant, and 0 otherwise.

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Table 4. Main Analysis Based on a More Refined Measure of Post-Initiation Period (Hypothesis H1)

	Coefficient Estimates (<i>t</i>-Statistics)
<i>D_t</i>	-0.042* (-2.000)
<i>D_{t+1}</i>	-0.051** (-2.125)
<i>LEV</i>	-0.015 (-0.176)
<i>VOLATILITY</i>	3.506*** (3.794)
<i>GC</i>	0.210 (1.628)
<i>LITIGATION</i>	0.055 (1.341)
<i>RETURN</i>	-0.021 (-1.400)
<i>ROA</i>	-0.119 (-1.488)
<i>LOSS</i>	0.161*** (4.735)
<i>MTB</i>	0.003 (1.000)
<i>SIZE</i>	0.502*** (35.857)
<i>RECINV</i>	0.466*** (5.178)
<i>BUSSEG</i>	0.068*** (6.182)
<i>FOREIGNSEG</i>	0.031*** (3.100)
<i>LAG</i>	0.001*** (33.333)
<i>BIGN</i>	0.371*** (8.244)
<i>BUSY</i>	0.271*** (7.324)
<i>AC</i>	-0.065 (-1.477)
<i>INTERCEPT</i>	8.004*** (44.715)
<i>Year Fixed Effects</i>	YES
<i>Industry Fixed Effects</i>	YES
No. of Firm-Year Observations	2,775
No. of Firms	1,020
Adjusted R²	77.8%

This table presents results of testing the association between audit fees and loan initiation. *, **, *** Significant at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed). For variable definitions, please refer to Appendix.

Table 6. Subsample Analysis by Borrowers' *Ex Ante* Financial Risks (Hypothesis H3)

	Coefficient Estimates (<i>t</i> -Statistics)			
	Panel A		Panel B	
	High Leverage	Low Leverage	High Cash Volatility	Low Cash Volatility
<i>POST</i>	-0.056* (-1.750)	-0.038 (-1.357)	-0.070** (-2.414)	-0.030 (-1.034)
<i>LEV</i>	0.068 (0.504)	0.081 (0.730)	0.046 (0.430)	-0.031 (-0.235)
<i>VOLATILITY</i>	3.428*** (2.672)	3.510*** (2.704)	3.134** (2.443)	3.430** (2.478)
<i>GC</i>	0.348* (1.681)	0.104 (0.712)	0.282** (2.000)	0.031 (0.114)
<i>LITIGATION</i>	0.128** (2.000)	-0.024 (-0.462)	0.087 (1.611)	0.025 (0.424)
<i>RETURN</i>	0.012 (0.500)	-0.039** (-2.053)	-0.029 (-1.526)	0.004 (0.143)
<i>ROA</i>	0.024 (0.164)	-0.216** (-1.982)	0.003 (0.035)	-0.557** (-2.011)
<i>LOSS</i>	0.147*** (3.196)	0.183*** (3.894)	0.121*** (2.574)	0.185** (3.700)
<i>MTB</i>	0.002 (0.500)	0.006 (1.500)	0.002 (1.000)	0.006 (0.750)
<i>SIZE</i>	0.508*** (26.737)	0.502*** (23.905)	0.465*** (21.136)	0.514*** (28.556)
<i>RECINV</i>	0.458*** (3.418)	0.466*** (4.161)	0.255** (1.992)	0.484*** (3.841)
<i>BUSSEG</i>	0.056*** (2018)	0.075*** (5.000)	0.059*** (3.278)	0.064*** (4.267)
<i>FOREIGNSEG</i>	0.037*** (2.846)	0.027* (1.800)	0.028 (1.556)	0.029*** (2.636)
<i>LAG</i>	0.001*** (2.917)	0.002*** (6.667)	0.002*** (7.040)	0.001** (2.307)
<i>BIGN</i>	0.273*** (4.200)	0.464*** (7.484)	0.289*** (4.898)	0.455*** (6.594)
<i>BUSY</i>	0.266*** (4.586)	0.268*** (5.956)	0.216*** (4.235)	0.309*** (6.180)
<i>AC</i>	-0.115* (-1.855)	0.022 (0.361)	-0.089 (-1.459)	-0.074 (-1.104)
<i>INTERCEPT</i>	8.004*** (27.792)	7.971*** (37.248)	8.396*** (37.316)	7.899*** (36.233)
<i>Year Fixed Effects</i>	YES	YES	YES	YES
<i>Industry Fixed Effects</i>	YES	YES	YES	YES
No. of Firm-Year Obs.	1,272	1,494	1,298	1,352
No. of Firms	513	557	503	499
Adjusted R²	77.3%	78.7%	73.3%	80.0%

*, **, *** Significant at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed). For variable definitions, please refer to Appendix.

Table 8. Further Analysis by Loan Characteristics

	Coefficient Estimates (<i>t</i> -Statistics)					
	Panel A		Panel B		Panel C	
	High Cost of Borrowing	Low Cost of Borrowing	Long Maturity	Short Maturity	With Financial Covenants	No Financial Covenants
<i>POST</i>	-0.005 (-0.161)	-0.073*** (-2.607)	-0.034 (-0.944)	-0.060** (-2.308)	-0.048** (-2.000)	-0.058 (-1.381)
<i>LEV</i>	-0.141 (-1.165)	-0.099 (-0.868)	-0.006 (-0.065)	-0.058 (-0.372)	0.014 (0.169)	-0.057 (-0.224)
<i>VOLATILITY</i>	3.809*** (3.318)	-0.633 (-0.416)	3.293** (1.965)	3.984*** (3.599)	3.689*** (3.425)	2.591 (1.312)
<i>GC</i>	0.152 (1.070)	0.364 (1.163)	0.177 (0.550)	0.177* (1.654)	0.230 (1.523)	0.206 (0.932)
<i>LITIGATION</i>	0.109* (1.758)	0.016 (0.314)	0.032 (0.525)	0.078 (1.472)	0.071 (1.578)	0.018 (0.184)
<i>RETURN</i>	-0.022 (-1.048)	-0.033 (-1.571)	0.038 (1.310)	-0.053*** (-2.944)	-0.028 (-1.556)	0.011 (0.367)
<i>ROA</i>	-0.052 (-0.542)	-0.215* (-1.680)	-0.046 (-0.220)	-0.119 (-1.280)	-0.121 (-1.052)	-0.150 (-1.136)
<i>LOSS</i>	0.100** (2.174)	0.172*** (3.660)	0.216*** (3.857)	0.134*** (3.190)	0.150*** (3.947)	0.228*** (3.081)
<i>MTB</i>	0.005 (1.250)	0.002 (0.500)	0.000 (0.000)	0.005 (1.250)	0.002 (0.500)	0.004 (1.333)
<i>SIZE</i>	0.533*** (21.320)	0.501*** (31.313)	0.500*** (26.315)	0.494*** (24.700)	0.494*** (30.875)	0.524*** (17.467)
<i>RECINV</i>	0.343** (2.504)	0.568*** (4.939)	0.503*** (3.399)	0.409*** (3.619)	0.509*** (5.302)	0.344 (1.483)
<i>BUSSEG</i>	0.041** (2.504)	0.077*** (4.939)	0.062*** (3.399)	0.077*** (3.619)	0.065*** (5.302)	0.081*** (1.483)
<i>FOREIGNSEG</i>	0.012 (2.050)	0.046*** (5.923)	0.035** (3.875)	0.028** (5.133)	0.034*** (5.417)	0.019 (3.115)
<i>LAG</i>	0.001*** (0.857)	0.001*** (4.182)	0.002*** (2.500)	0.001*** (2.154)	0.001*** (3.778)	0.001 (0.905)
	(2.441)	(3.664)	(6.198)	(3.064)	(3.782)	(1.000)

<i>BIGN</i>	0.395*** (6.475)	0.354*** (5.206)	0.282*** (3.760)	0.415*** (7.411)	0.415*** (0.798)	0.211* (1.788)
<i>BUSY</i>	0.287*** (4.864)	0.265*** (6.023)	0.248*** (4.679)	0.290*** (6.170)	0.280*** (6.829)	0.245*** (3.063)
<i>AC</i>	-0.033 (-0.524)	-0.104* (-1.705)	-0.047 (-0.734)	-0.043 (-0.729)	-0.059 (-1.204)	-0.151 (-1.373)
<i>INTERCEPT</i>	8.146*** (36.529)	8.113*** (34.232)	7.578*** (38.467)	8.235*** (37.628)	7.938*** (40.918)	8.448*** (27.164)
<i>Year Fixed Effects</i>	YES	YES	YES	YES	YES	YES
<i>Industry Fixed Effects</i>	YES	YES	YES	YES	YES	YES
No. of Firm-Year Obs.	1,208	1,555	1,277	1,498	2,163	612
No. of Firms	496	556	496	592	801	261
Adjusted R²	73.3%	80.0%	73.7%	75.6%	76.3%	81.7%

*, **, *** Significant at the 10 percent, 5 percent and 1 percent levels, respectively (two-tailed). For variable definitions, please refer to Appendix.

An Illusion of Independence – A Working Paper on the 5 Threats

The audit profession has long held independence to be a key value and hallmark of the profession. This is perhaps especially true for legislative auditors, or auditors general. This working paper details a case study of two Canadian jurisdictions where provincial comptrollers were appointed as auditor general, raising questions on the perception of independence. It uses the five threats to independence as a framework to determine if the perceptions of a possible conflict are valid. Building on the literature of the social construction of independence, it proposes some initial conclusions and sets the stage for a second phase of this work.

One should always play fairly when one has the winning cards.

Oscar Wilde (1854–1900)

Introduction and Scope of Working Paper

Any auditor general in Canada – whether reporting to a federal or provincial legislative body – occupies a privileged and highly respected position. Once appointed, auditors general normally enjoy broad public and media support for their reports on various government operations, particularly their value-for-money (VFM) audits, which have evolved far beyond their original boundaries to encompass a wide and diverse range of issues (Arens, 2007). Consider, for example, the hero-like status ascribed to Federal Auditor General Sheila Fraser after her reporting on the so-called sponsorship scandal. Similarly, reflect on the public debate that ensued in 2010 when it appeared MPs wanted to restrict Mrs. Fraser’s audit scope after she announced a planned audit of the expense accounts of Members of Parliament. The media and public comments were almost entirely in support of Mrs. Fraser’s position. The controversy even headlined an episode of the CBC’s national call in program, *Cross Country Checkup*, with vast support for the AG. And under this unrelenting weight of public opinion, the Parliamentarians decided to grant the Auditor General the increased access she desired. In the game of public brinkmanship, the auditor general, irrespective of provincial or federal jurisdiction, seems to always hold the winning cards.

This is not to say that auditors general are always without criticism. One area of concern has been how various auditors general have worked with government administrations to enhance government performance reporting initiatives. This has happened both in Alberta (Gendron, 2001, 2007) and at the Federal level, where the Auditor General “and the Treasury Board Secretariat have worked together to enhance accountability systems generally and to improve government reporting to the House of Commons for ‘results’ in particular” (Aucoin, 1998, p. 10). Professor Sharon Sutherland, a relatively frequent critic of the office, sees this focus on results reporting by both the AG and the Treasury Board as linked to the rise of the New Public Management philosophy in Canada (2002).

A 2009 article in AOS discusses how the Danish National Audit Office deals with conflicting roles of modernizer, then auditor, of the same system. (Skaerbaek, 2009). This conflict in roles certainly raises questions of independence. Similarly, along the international road, it would be hard to ignore the research of Michael Power. Writing from a UK perspective, enhanced by both his professional accounting experience and his academic training, Power describes VFM audit, the audit discipline that generates most of the press coverage for auditors general, as “a vague normative space in which an ensemble of operational routines and auditable performance can be harnessed to broader political ideals” (1999, p. 44). In linking the notion of “a vague normative space” to the concerns regarding harnessing political ideals, Power offers important perspective on independence. That is, since AGs are often heard to speak of how they must refrain from areas of policy, becoming enmeshed in political ideals might detract from their independence (Gendron, 2001).

Despite the eruditeness of these criticisms, however, the reputation of the AG community has remained largely unscathed. Given the general distrust of politicians, it appears the AG is regarded as the taxpayer’s hero (Dampler, 1980). Although their reports are often not welcomed by the governments they report on, AGs earn a relatively ‘free ride’. For instance, it seems somewhat surprising that in all the press accounts surrounding the Auditor General of Canada’s recent report on fighter jet acquisition, not one official on the government side appears to have asked “Yes, but which of these costs are relevant?” It appears, however, to have escaped the discourse surrounding this multi-billion dollar project. Governments typically restrain themselves from criticizing these messengers of bad tidings, perhaps because they fear the public outrage that might result if they were to be seen as criticizing these heroes. And, political parties must always remember their time in government is transient. One day the party in power will form the opposition and the auditor general will once again be their “friend” (“Auditor must be independent”, 2006).

One is reminded of the wisdom of Oscar Wilde’s quote, “One should always play fairly when one has the winning cards.” The AGs, given their privileged positions, seem to hold all the winning cards. But as Wilde suggested, it would seem to behoove any auditor general to play fairly, especially when it comes to issues of professional conduct, particularly around the profession’s core principle of independence. Indeed, as one writer has stated “It is a fundamental requirement that the Auditor General should be, and be seen to be, independent” (Thompson, 2003, p. 18). The BCAG office website at one time stated, “the auditor-general’s independence is his most valued asset” (Palmer, 2006, A3). If an AG was to lose her independence, what would be left?

Auditor independence is a social construct (Gendron, 2001). Gendron et al. remind us that “if we take seriously the social construction of independence, then it is society that ultimately decides the conditions under which auditors ‘state of mind’ claims make sense” (2001, p. 279). Independence, even for the members of the popular AG community, has to be seen and defined in society to see if their claims of independence make sense.

This notion of the social construction of independence has been ‘tested’ recently in the ‘live laboratories’ of two Canadian provinces. In two separate Canadian jurisdictions we have seen

parties in power appoint their provincial comptroller to the auditor general's post. One day, you might say, the accountant was inside the organization 'keeping the books'. The next day, the same accountant was the external auditor, not only of that same set of books, but with the broad scope of a VFM mandate, also external auditor of performance for virtually any government program or system. Any first year auditing student would probably be able to spot the potential problems with auditor general independence under such circumstances.

Yet, in the two jurisdictions we have seen very different responses, very different public discourses. In one of those provinces, British Columbia, this perceived breach of independence was met with a torrent of protest from the opposition parties, the press and, to some extent, the CA profession itself. In short, the auditor general's claims to independence did not 'make sense' to that society. In the other jurisdiction, New Brunswick, twice in five years the party in power promoted the Comptroller to the Auditor General position. In New Brunswick, there was a curious, perhaps eloquent, silence. Was the society in NB socially defining the AG as independent while in BC the social definition on 'not independent' prompted the Auditor General to resign within one year, presumably because of the untenable nature of his position? In New Brunswick, on two separate occasions in roughly the same time frame as BC's, two separate AG's remained in office without any effective challenge by the opposition, the press, or the professional accounting bodies. In New Brunswick, it seems, it was simply business as usual.¹⁰

This working paper discusses my case study research to date on this social phenomenon. It begins by analyzing how a move from the position of provincial comptroller, the chief financial officer of a government, to auditor general, might be viewed through the lens of the five threats to independence. Much has been written about the five threats, but rarely do we see visible instances where the threats can be analyzed in such a public and practical manner. In one sense, we are all shareholders of our respective provincial governments. Like shareholders at an annual meeting we are free to examine our auditor's credentials and determine whether the key criterion of independence has been met. This practical, visible side of the research adds to its value as a teaching aid for auditing students and accounting professionals

Following this five threats analysis, the paper offers some discussion of why the reaction in the two provinces may have been so different. In other words, the paper will examine the aspect of how independence may be socially constructed. This part of the research includes comments from primary documents such as Hansards from Public Accounts Committees, legislation, codes of ethics from professional accounting bodies, and various press accounts. In addition to providing academically relevant findings, this work on the social construction of independence may also contribute to legislative changes or other mechanisms that could more clearly inform the Auditor General's appointment process in Canada and elsewhere.

¹⁰ The phrase 'business as usual' seems to be apt for NB where 3 of the last 5 AGs have simply transferred from the Comptroller's Office to the AG's chair. It seems more like a natural career progression than an independence issue. Perhaps surprisingly, all 3 had served, or were serving, on the provincial council of chartered accountants at the time of their appointment.

Analyzing AG Independence versus the Five Threats

For many years, particularly in the previous century, the accounting profession enjoyed the respect and relative admiration of much of society. The perceived impartiality of the gimlet-eyed independent auditor could naturally be seen as one of the things that led the auditor to this place of high esteem. Indeed, in certain settings researchers have studied how the profession had “taken a number of initiatives to defend and reinforce this image” of independence, an image which in turn helped the profession define, defend and extend its reach. (Sikka & Willmott 1995, p. 547). One initiative around this notion of independence is the clear articulation of the five threats to independence – the threats of self-interest, self-review, advocacy, familiarity, and intimidation (Arens, 2007; CGA-Canada, 2007; NBICA, 2004). Auditors are expected to assess themselves against these five threats on each engagement, and where any of the threats pose a potential hazard, the auditor is expected to document how he or she would reduce those threats to an acceptable level. If the threat cannot be reduced to an acceptable level – remembering that independence is both a matter of fact (maintaining an unbiased attitude) and appearance (appearing independent to the reasonable observer) (Arens, 2007) – the auditor would have to resign from the audit or be replaced on the engagement team.

A wide series of scandals that can be captured under the general heading of the “Enron fiasco” have impacted heavily on the profession’s reputation. This loss of reputation can be linked directly to a perceived loss of independence. The accountants at Arthur Andersen (and elsewhere) compromised on their independence of judgment. Their practices and decisions were more informed by the pressures of lucrative special consulting fees from Enron, that far outstripped the audit side of the firm’s billings, than by their personal ethics or understanding of the rules of professional conduct, notwithstanding the storied impact of the almost legendary tales of integrity of the founding partner. Under Andersen’s not so watchful eye, Enron fell. And when Enron fell, so too did the “Big Six” accounting firm Arthur Andersen. As noted, the profession as a whole suffered a collective loss of esteem.

Yet the rules of professional conduct have long spoken of the need for independence. It seems though, that the profession has responded to the crisis with new rules such as those voluminous accounts on quality control; this type of response, by the way, seems to accompany each round of crisis in the profession (Power, 1999). Perhaps, though, it may not be that a lack of rules is, or ever was, the problem. Might it instead be the manner in which those rules are operationalized; or as Gendron and his colleagues have suggested, the way in which independence is socially constructed?

As noted in the previous section, two Canadian jurisdictions in recent years have appointed their provincial comptroller to the role of auditor general. This provides us with a window into the social construction of independence. The first case happened in New Brunswick in the fall of 2005. Michael Ferguson, the provincial Comptroller, was appointed Auditor General. In the fall of 2010 Mr. Ferguson resigned half-way through his 10-year term to assume the position of Deputy Minister of Finance. (Mr. Ferguson has subsequently resigned this post and is now the Auditor General of Canada.¹¹) He was replaced by the then provincial Comptroller, Kim Macpherson, who continues to serve as AG. In the other jurisdiction, British Columbia, Arn Van

¹¹ It does not appear Mr. Ferguson’s views on AG independence were addressed in his confirmation hearing.

Iersel, the former Comptroller General¹², was appointed auditor general in June 2006. His title was actually Acting Auditor General as the opposition members on the Public Accounts Committee refused to give unanimous consent to his appointment, citing issues of independence.

A provincial comptroller is a key – if not the key – financial officer in a provincial government. The provincial comptroller is responsible for the financial systems of the government and for preparation of the annual financial statements. A comptroller would be a senior advisor to government, and presumably would be a prominent civil servant in terms of providing advice on the financial impacts of policy throughout government. In New Brunswick the Comptroller also serves as the chief internal auditor, furthering her role as a senior member of the management team. With these facts in mind, Table 1 analyzes how the five threats to independence might be considered by someone moving into the auditor general’s post immediately – or soon after – serving as comptroller.

Table 1 shows that for at least four of the five threats to independence, a reasonable observer would have grounds to at least raise a question on the perception of independence if a provincial comptroller became auditor general. As noted, in the province of BC, this is exactly what happened; the AG’s appointment was opposed. In addition to comments by MLA’s at the open sessions of the Public Accounts Committee, several newspaper articles referred to these objections, including prominent newspapers such as the *Vancouver Sun*, *The Victoria Times Colonist* and *The Vancouver Province*. Those expressing concern on the appointment included opposition members of the Legislature, a spokesman for the BC Institute of Chartered Accountants, the President of CUPE BC, and the Taxpayers’ Federation. As Barry O’Neill, the CUPE President, stated, “Any issue that can unite CUPE and the Taxpayers, Federation is one the people of British Columbia should be concerned about” (“Independence of AG’s office ‘seriously compromised’”, 2006). In February 2007, less than a year after his term began, Mr. Van Iersel resigned. Although the resignation letter was not published, it is quite conceivable that in the face of these independence concerns, the position was untenable. In New Brunswick, however, in these two situations five years apart, objections were scant. The research to date has located only one article, a blog, criticizing the appointments (Mchardie, 2010). Interestingly enough, the criticism came from outside the province, from the Director of CA–Queen’s Centre of Governance.

Perhaps this outside-of-NB resistance is telling when moving towards conclusions on the social construction of independence. BC appears to have had a long history of multi-party collaboration by the political parties on the AG appointment. Indeed, the Auditor General Act in BC notes that the Public Accounts Committee must unanimously recommend the appointment. In addition, the variety of comments by other interested members of society indicates perhaps a society that has a better understanding of good governance. BC had both the legislative tools and educated actors to socially define independence in a manner consistent with an analysis of the five threats. In NB, the Auditor General Act gives no power to the opposition parties on the appointments. Further, the general lack of comments by the elites and the profession show perhaps a business as usual approach that could be detrimental to the cause of accountability. The only comment from the opposition party seems to be on the fact that they were not consulted on the choice. As this research moves to a second phase, a firm focus on these societal dimensions seems crucial.

¹² Mr. Van Iersel had actually taken a temporary position as acting Deputy Minister of Children and Family Services prior to the AG appointment. But he had been Comptroller during the year under audit.

Table 1: Evaluating Threats to Independence

Threat	Definition	Discussion re Possibility of Conflict
Self-Interest	Having financial interest in the auditee	On the one hand, a reasonable observer would probably evaluate this threat as low risk as the auditor is unlikely to have a major financial interest with, the government (e.g. a concessionary loan to a business). On the other hand, as a senior financial advisor, a comptroller may have had impact on key financial decisions of government that carry on far into the future. Asking the same individual to audit those decisions in years to come poses a self-interest threat to reputation. Is an auditor general likely to lambaste, or even audit, a program or decision in which their advice has played a major role? Further, in determining whether to accept the post, the individual may realize that an AG position, with its profile, salary and benefits, may pose a self-interest too hard to resist, making it difficult to dispassionately evaluate the situation from a professional perspective.
Self-Review	Auditor is in a position to review their own work	This threat is a high risk. To address this threat, in all three cases examined, the auditors refused to sign the statements for the fiscal year in which they had spent part of the year as comptroller. The deputy AG, who reports directly to the AG, signed the statements. (This may be relevant in terms of the intimidation threat – see below.) Given the fact though that the comptroller had responsibilities for various financial systems and policies, a reasonable observer could raise the question of is this cooling off period long enough? For example, if the comptroller had approved a new payroll system two years before, would there be a perceived audit independence problem in auditing this system as AG? What if, for instance, the system was found to have major control issues? Might public discussion be suppressed?
Advocacy	Auditor promotes a client's financial position	This threat is probably low risk as the AG is unlikely to be promoting provincial bonds, financial assistance programs, etc.

Threat	Definition	Discussion re Possibility of Conflict
Familiarity	Auditor has difficulty behaving with professional skepticism because of long time on an assignment, or relationships with auditee senior staff	This would certainly be a high risk area, given the auditor general's familiarity with senior managers and key players in the administration of the government. Over a long period of service, it is quite possible that a comptroller would form many friendly relationships with senior officials inside the government. It might be very difficult to detach oneself from such relationships in forming future audit opinions and determining what matters should fall under public scrutiny in the various AG reports. The fact that the AG report is public, and gets wide media attention, could place the AG in a very difficult position in regards to this threat. A reasonable observer could certainly have a perception that the AG might 'soft peddle', bury or avoid a reportable issue that reflects poorly on a colleague in the administration. It is perhaps instructive that certain policies and guidelines call for auditors to be shifted out of assignments periodically and to take a cooling off period of 5 years or so before resuming audit work on certain clients. Would it perhaps not be incumbent on someone who was inside an organization to have a cooling off period of at least that length? Again, the reasonable observer would have cause to question the appearance of independence.
Intimidation	Intimidated towards compromise by threats such as possibility of losing engagement	One common example here is a threat by a client to withdraw an engagement. This is low risk for the auditor general on most audits as the audits are mandated under legislation. (Note though Intimidation could become an issue in NB given that the AG is subject to reappointment. As a reappointment date drew near, there could be an incentive to postpone more controversial audits until the term was secured.) Intimidation, however, is probably more of an issue for AG staff, given the AG's previous position as comptroller. For example, consider the case cited above under Self-review where a deputy AG signs the financial statements the AG has had a part in preparing. Although ostensibly this might seem to address self-review threats, a reasonable observer might see that an audit qualification, or even a strong management letter, from the deputy may be construed as a career-limiting move; a substantial intimidation threat. Further, consider the case of a more junior auditor, who three years out from the AG's appointment finds major control weaknesses on an inventory system approved by the AG when comptroller. Or, consider a VFM auditor who finds major issues of a lack of regard for economy and efficiency in a loans program where the AG served on the approvals committee. The reasonable observer again might suggest discretion on the part of the auditor would overrule intellectual honesty. Findings could be suppressed or downplayed.

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Is Information on Boards Useful for Investors' Appraisal of Firms' Value?

This article examines if investors rely on certain information about board characteristics appearing in circulars, to appraise a firm's market value. The board traits considered in the study are independence, size, ratio of equity remuneration to total director remuneration, board ownership and director tenure. Our results show that the ratio of equity remuneration to total remuneration and director tenure are positively connected with firm market capitalization. Director ownership, however, appears to be negatively correlated with firm valuation.

I. Introduction

Since the pioneering work of Berle and Means (1932) students of the public corporation have analyzed the costs associated with the separation of control and ownership rights that characterizes this type of business organization; as well as the mechanisms created by regulators and financial markets to minimize those costs. Boards can contribute to control agency costs that shareholders bear when they hire professional managers to run the businesses they own, an activity demanding specific knowledge that investors typically lack. Fama and Jensen (1983) propose that the board of directors is the highest internal control mechanism to monitor the actions of top management. Boards receive their authority from stockholders of the corporation. Because shareholders diversify their risks by investing in multiple firms, the resulting limited size of their holdings prevents them from investing time and effort in monitoring top management of the firms they own. Appointing directors to the board to represent shareholders' interests is a way to circumvent the free-rider problem. Although boards delegate the day-to-day management of the firm to hired officials, they also retain a number of critical prerogatives intended to align the divergent interests of shareholder and managers. For instance, boards elect key corporate officials, such as the CEO, advise them, and approve their actions; safeguard and approve changes in corporate assets; approve important financial decisions and actions, and see that proper reports are provided to shareholders; delegate special powers to others on matters requiring the board; and maintain, revise and enforce corporate charter and by-laws, among other things (Chaganti et al. 1985).

There is no consensus among scholars on the merits of the board to ensure alignment of interests among managers and shareholders. For instance, Jensen (1993) asserts that internal control systems headed by company boards exhibit major shortcomings. They react too late to problems experienced by the firms and take too long to effect change, vis-à-vis capital markets' intervention, which accomplish change relatively quickly, within a year and a half and three years. According to Jensen, boards tend to act mostly in the case of crisis in the product, factor or capital markets of the firm or in the regulatory sector. Their incapacity to induce restructuration

of firms in the absence of such crises constitutes, in Jensen's words, "strong testimony to the inadequacy of these control mechanisms" (Jensen, 1993: 854). Moreover, he presents a long list of scholar articles supporting the view that internal control systems headed by boards of publicly traded firms have generally failed to ensure that managers maximize efficiency and value. Dalton et al. (1998) reviewed 54 studies on board composition and firm performance and found virtually no correlation between these two constructs.

Other researchers held the opposite view and assert that at least certain aspects of the operation of the board traits can be associated with higher firm valuations or other desirable outcomes for stockholders. For example, Anderson et al. (2004) found support for the proposition that the cost of debt is negatively related with board independence and board size. Fully independent audit committees are also associated with a reduction in the cost of debt. Chaganti et al. (1985) compared failed with non-failed firms in the retailing industry. Their analysis suggests that non-failed retailing firms tend to have bigger boards vis-à-vis failed firms. Larmou and Vafeas (2010) present evidence that increments of board size are associated with better share price in a sample of small firms with a history of poor operating performance. Beasley (1996) presents evidence that the appointment of a larger proportion of outsiders in the board of directors significantly reduces the likelihood of financial statement fraud. Uzun et al. (2004) found that as the number of independent outside directors' increase, the likelihood of corporate wrongdoing decreases. Bolton (2006) found support for the claim that director ownership, among other variables, is positively related with better current and future operating performance, although it is not correlated with stock market measures of performance. He also found support for the proposition that, given poor firm performance, the likelihood of disciplinary management turnover is positively correlated with stock ownership of board directors and with board members' independence. Pergola and Joseph (2011) detected negative relationship between earnings quality and director ownership once the percentage of ownership of insider and independent directors fell in an "entrenchment range." Director ownership, however, could be positively related to earnings quality before and after that range. Gerety et al. (2001) investigated the market reaction to the adoption of incentive payments for non-employee board directors using the event study techniques. These plans involved the grant of stocks for the first time, plans that provided directors with additional stock compensation without requiring trade-off in annual retainer, as well as option-based plans. The authors discovered that stock markets' reaction depended on whether the CEO is involved in director selection. Markets reacted negatively to announcements of director incentive payments by firms without nomination committees.

This article contributes to the on-going debate about the existence and magnitude of the investors' firm valuation appraisal of information concerning boards. This contribution is three -fold. First, we analyzed the issue in the context of Canadian stock markets. To the best of our knowledge, the firm valuation consequence of information about boards has not been examined in the literature before in the Canadian context. Secondly, we examine this question drawing on the Ohlson (1995) model which identifies two fundamental variables to explain stock prices: book value of equity and earnings. To the best of our knowledge also, this model has not been employed before in the literature to shed light on the issue at hand. Finally, we examine the consequences of introducing in the model the ratio of equity-based to total director compensation. Again, to the best of our knowledge, other aspects of director remuneration have been examined before, but not the consequences for the firm valuation of this metric.

The rest of the article goes as follows. A second section discusses the findings in the literature about the connection of certain traits of boards on firm valuation of other desirable consequences for alignment between managerial and stockowners interests. We also state the hypotheses of the study in this section. A third section discusses the methodology of the study and presents information about the sample. The next section presents and discusses the results of our examination of the impact of board traits on firm valuation. A last section wraps-up the article, presenting the conclusions of the study and suggesting future avenues of research.

II. Literature Review and Statement of Hypotheses

As it has been noted above, a stream of scholarly research argues that corporate boards can play a role in controlling managerial self-serving behavior. If they help to align managerial interests to stockowners', boards may contribute to a number of desirable outcomes. Thus, better boards, able to oversight and discipline management may lead to lower capital cost (which implies a higher market valuation) or higher turnover of management of poorly performing firms, among other things. Previous literature has focused on the impact of some traits of boards on diverse measures of firm performance and good corporate governance. The main traits examined in the literature are connected with board size; director's independence, ownership of firm equity, and tenure; as well as use of equity remuneration for directors, instead of cash retainers as the sole mechanism to pay directors. We review each of these aspects of board operation in the following subsections.

Board independence

Directors who are not affiliated with the firm in no other way other than participating in the board are considered to be independent. The corporate governance fiascos of 2001 and 2002 (Enron, WorldCom, etc.) have contributed to shape a view that public companies should reform the way that boards operate. One of the central tenets of this view is that boards should have a majority of independent directors (Allaire and Firsirotu, 2003). This thinking motivated the passing of the Sarbanes-Oxley Act of 2002 which requires that public-traded firms attain a certain proportion of independent directors and in the sub-committees of the board (Pergola and Joseph, 2011; Magnan et al. 2010). Whether independent directors can assure good governance, i.e. minimization of managers' self-dealing is, however, an open question. Although it is possible to expect that independent directors can be more efficient at monitoring management, Wright (2004) noted that the most egregious cases of corporate scandals (Enron, WorldCom, Tyco) were companies that complied with most of the tests that rating services commonly use (which presumably should include metrics concerning directors' independence). He cited several critics who argue that good governance has less to do with formal structures than with harder-to-measure things such as integrity, candor, and self-assessment. To that effect Wright quoted Arizona State's Marianne Jennings, who commented about the issue of board quality in rather harsh terms: "Enron's board was rated as a magnificent one, and they were nothing but a group of sycophants willing to remain sullen and mute for \$380,000 a year." (Wright 2004: 44)

In spite of the abovementioned criticisms, a number of scholars have provided statistical evidence supporting the appointment of independent directors. Anderson et al. (2004) examined if board and audit committee independence could have an impact on the debt cost. Drawing on data from sample of firms including the constituents of S&P 500 index and 252 other firms comprised in

the Lehman Brothers Fixed Income, the authors found a negative relation between the independence of the board and the audit committee and the cost of debt. After controlling for industry and firm-specific attributes, the article found that firms with independent-dominated boards exhibited debt costs that were 17.5 basis points lower than those exhibited by firms controlled by insiders (25% of independent directors). They also found evidence that the cost of debt is about 15 basis points lower for firms with fully independent audit committees relative to those with insiders or affiliates on the committee.

Uzun et al. (2004) also present empirical support for the virtues of board independence. They examined the differences between a sample of 133 firms involved in some form of fraud and the same number of non-fraud firms, matched by size and industry. Their analysis shows that a higher percentage of independent and “grey” directors (i.e. directors who are not employees of the firm, but who are affiliated with it in other ways) is negatively correlated with the likelihood of corporate fraud. Beasley’s (1996) analysis compares 75 firms that have committed financial statement fraud with a matching set of non-fraud firms. According to their analysis, a higher percentage of outside directors diminishes the likelihood of the occurrence of fraud in financial reporting.

Other researchers, on the contrary, have provided statistical evidence casting doubts on the positive link between board independence and the capacity to monitor boards. For instance, Yermack (1996) found statistical support for the view that the presence of independent directors in boards reduces firm valuation. Chaganti et al. (1985) in a study on failed firms in the retailing sector concluded that the percentage of outside directors was not statistically linked to the likelihood of failure. Bolton (1996) presents evidence that firms with more inside directors, and fewer independent directors, have better operating performance than firms with a greater percentage of independent directors. He speculates that insider directors probably have a better knowledge of the sample firm activities, and that they know what the firm needs to do to achieve certain performance benchmarks. The independent directors do not have the day-to-day expertise that inside directors do.

On the basis of the above-mentioned literature we state hypothesis 1 as follows:

Hypothesis 1: There is a positive link between the proportion of independent directors and firm stock market valuation.

Board size

There is an on-going debate on the potential impact of board size on firm performance. Anderson et al. (2004) have pointed out to the existence of two schools of thinking. Researchers who are wary of large boards stressed the possibility that firm decision-making can be seriously impaired when board size goes beyond a certain threshold. Larger-than-optimal boards would lead to slower firm decision-making (because it is more difficult to coordinate a large number of people), less candid discussions among board members and greater risk aversion. Moreover, Jensen (op. cit.) contends that larger boards could be more easily controlled by managers than their smaller counterparts. Faleye (2004) found that large boards are less likely to fire a CEO, or to replace her with an outsider and that CEO turnover-related return is lower when the board is larger. Kayunga (2008) found that board size is negatively related to firm performance for non-financial firms.

Another stream in the literature argues, however, that some firms require larger boards for effective monitoring. Chaganti et al. for instance, proposes that large boards are valuable because they can provide a wide range of services and expertise to firms, a point that has also been raised by Larmou and Vafeas (2010). In the same line of thinking, Magnan et al. (2010: 30) contend that “[...] to view the board of directors solely as a monitoring mechanism may represent a simplistic view of modern organizations. Directors also bring resources to the board upon which they serve, in terms of unique expertise, business or political connections or experience.” A number of authors, according to Anderson et al. have also suggested that larger boards have more directors to share the workload, thus helping the scrutiny of management. Anderson et al. (2004) presents empirical results in support of the view that debt cost is negatively correlated with board size. Larmou and Vafeas (2010) studied a sample of smaller, underperforming firms. The researchers found that board size is positively correlated with firm value, and that changes in board size are found to be positively associated with annual stock returns. They also present results from an event study suggesting that the market responds favorably to board size increases and unfavorably to large board size decreases.

Our review of literature leads us to conclude that the impact of board size on firm performance is largely an empirical question. Adding directors to a board could bring additional expertise and contacts that can ameliorate the economic prospects of the firm. Bigger boards, however, can bring additional costs as well. However, we believe that the literature stream favoring a smaller board size is predominant. Thus, we formulate our second hypothesis.

Hypothesis 2: There is a negative relationship between board size and firm market value.

The director remuneration based on equity

Magnan et al. (2010) present a survey of academic studies that examines the connection between director compensation and firm value. They conclude that collectively these studies suggest that equity-based compensation for directors translates into value creation by enhancing directors’ monitoring focus. However, they highlight as well that board’s enhanced effectiveness is “conditional upon a firm's context, with greater improvements in performance being observed when firms start from a weak governance base.” (Magnan et al. 2010: 28). Perry (1998) found that the likelihood of CEO turnover after poor performance is significantly greater when directors of independent boards receive incentive pay than when they do not.

Board equity-based remuneration has also associated to a higher financial performance in the case of Real Estate Investment Trusts (Feng et al. 2007). Ryan and Wiggins (2004) examination of data on 1018 firms in 1997 is considered by Magnan et al. (2010) as one of the most exhaustive analyses of the interface between director compensation and board monitoring effectiveness. The study provided evidence that when the CEO has more power than the board, director compensation is lower and relies less on equity-based instruments. Authors assert that those results are consistent with the view that powerful CEOs try to reduce monitoring by reducing directors’ remuneration to firm performance.

Gerety et al. claim that incentive payment for directors helps to align management and stockholders’ interests have gained widespread support among many important institutional investors. Nevertheless, other researchers have questioned that view on several grounds (Gerety et al. 2001). There is support in the literature for the claim that board directors perceive prestige

and business contacts associated with their directorships as more valuable than explicit monetary payments, a point also raised by Magnan et al. (2010). Other researchers have elicited that the labor markets for directors encourage them to promote stockholders' interests, rendering ineffective remuneration schemes as a mechanism to assure board director allegiance to investors. Moreover, Gerety et al. propose that equity payments could be ineffectual as an incentive for directors to monitor management on behalf of stockholders, if managers could influence the director nomination process. Using both regression and event studies, they found that markets react negatively to the adoption of incentive payments (as opposed to cash retainers as the sole method of remuneration) when the manager is involved in the selection of the director, or when the plan is proposed by firms without director nomination committees.

On the basis of the results discussed above, we propose our third hypothesis:

Hypothesis 3: There is a positive relationship between the ratio of equity-based to total director remuneration and market value of the firm.

Board director ownership

Agency theory predicts that directors with more significant equity ownership have greater incentives to monitor top management (Gerety et al. 2001, Anderson et al. 2004). Gerety et al. assert that a number of articles support the prediction that equity ownership creates a powerful incentive for directors to monitor management. For instance, Bhagat et. al. (1999) suggest that existence of a correlation between the dollar value of equity holdings of director and the likelihood of a disciplinary-type CEO succession in poorly performing companies. Jensen (1993) has proposed that boards establish the implicit or explicit requirement that new directors invest in the firm out of their pockets. The amount to invest should seldom be less than \$100,000 in his opinion, and it could grow afterwards with equity or option-based payments.

Although the notion that board director ownership enhances board ability to monitor management seems to be favored by both academics and institutional investors, other researchers have found evidence that questions the validity of the notion. Pergola and Joseph (2011) present statistical evidence that both independent and insider director can become entrenched if their holdings attain a certain threshold, which is large enough to overcome governance mechanisms, but smaller than the needed threshold assuring alignment with stockowners' interests. The literature review leads us to formulate the fourth hypothesis of our study.

Hypothesis 4: There is a positive relationship between the percentage of value of stocks held by board directors and the market value of the firm.

Board members' tenure

According to Yermack (1996) the turnover rate of board directors is 8.3%. Thus, average director tenure is 12 years. There are two views in the literature concerning director's tenure. A first stream stresses the point that board monitoring can be enhanced when directors acquire knowledge about the firm throughout their experience in the board (Anderson et al., 2004). A second stream claims that a longer director's tenure increases the likelihood that management influences board members. Thus, the latter could become less critical of managerial self-dealing behavior. Anderson found statistical evidence suggesting that an increase in the number of years'

tenure from 7 to 8 years increases debt cost by 2.5 basis points. Byrd et al. (2010) provided statistical evidence that banks with CEOs having more than six years tenure, exhibited a positive and significant relationship between CEO remuneration and the median tenure of outside directors. Thus, as board tenure rises, CEO pay to market capitalization rises, holding other factors constant. They concluded that this fact supports the claim that CEOs can develop ties with directors with longer tenures, making the latter to shift allegiances from stockowners to managers. As a result, directors with longer tenure tend to support higher pay for CEOs.

We formulate our fifth hypothesis:

Hypothesis 5: There is a positive relationship between the directors' average number of years of tenure and market valuation of firms.

III. Model, Methodology and Sample

The model developed is based on that of Ohlson (1995) who uses two fundamental variables to explain the stock price: The book value of the company's owners' equity and its earnings.

Equation 1

$$MV_{i,t} = \beta_0 + \beta_1 BV_{i,t} + \beta_2 EARN_{i,t} + \varepsilon_{i,t}$$

- $MV_{i,t}$ = market value of the company i 's common stock six months after the end of the fiscal period t multiplied by the number of common shares outstanding at the end of fiscal period t ;
- $BV_{i,t}$ = book value of company i 's shareholders' equity at the end of the fiscal period t ;
- $EARN_{i,t}$ = earnings of company i for fiscal period t ;
- $\varepsilon_{i,t}$ = error term.

The explanatory power of the base model will be evaluated using the adjusted R^2 . The variables associated to the research hypotheses are then added to the model in order to evaluate their ability as firm value drivers. According to the discussion in the previous section these variables are: board of directors' independence, its size, the ratio of stock-based compensation to total compensation, director stock ownership and the average number of years of directors' tenure.

Equation 2

$$MV_{i,t} = \beta_0 + \beta_1 BV_{i,t} + \beta_2 EARN_{i,t} + \beta_3 IND_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 REM_{i,t} + \beta_6 TEN_{i,t} + \beta_7 OWN_{i,t} + \varepsilon_{i,t}$$

- $IND_{i,t}$ = The percentage of independent directors in fiscal period t for company i .
- $SIZE_{i,t}$ = The number of directors on the board during fiscal period t for company i .
- $REM_{i,t}$ = The ratio of stock-based remuneration to total remuneration paid to directors during fiscal period t for company i .
- $OWN_{i,t}$ = The percentage of common shares outstanding held by directors in fiscal period t for company i .

$TEN_{i,t}$ = The directors' average number of years of tenure on the board in fiscal period t for company i .

The adjusted R^2 of equation 2 will be compared to that of equation 1 in order to show the added explanatory power of the variables in the second equation. The hypotheses are tested with the coefficients associated to each of the independent variables.

Sample

Hypotheses have been tested using data from companies listed on the S&P/TSX 60 index as of July 1, 2011. This index includes the largest public Canadian companies. The testing period spans over the 6 fiscal periods of 2005 to 2010. The number of possible observations is therefore 360. Of this number, 47 observations were removed due to missing data.

Data on common stock value was obtained from the Thomson Reuters database. Book value, earnings and number of common shares outstanding were gathered from financial statements. The percentage of independent directors, the number of directors on the board, the ratio of stock-based compensation to total compensation, the percentage of common shares held by directors and the number of years of director tenure were compiled from the information circulars.

IV. Results

a) Descriptive Analysis

Table 1: Descriptive Data

Variables ^{1and 2}	Minimum	Maximum	Average	Standard deviation
MV	0.8	78.6	18.2	16.1
BV	0.3	42.3	8.9	8.1
EARN	4.5	7.2	1.2	1.3
IND	50 %	100 %	81.7 %	11.84 %
REM	0 %	90 %	39.65 %	25.65 %
OWN	0 %	69 %	4.04 %	11.51 %
TEN	0.4	13.57	6.86	2.60
N	313			

¹ The variables MV, BV and EARN are stated in billions of Canadian dollars.

² $MV_{i,t}$ = The market value of common shares of firm i six months after the closing date for financial statements of year t multiplied by the number of outstanding common shares at the end of year t ; $BV_{i,t}$ = The book value of common equity of firm i at the end of year t ; $EARN_{i,t}$ = Earnings of firm i for year t ; $IND_{i,t}$ = The percentage of independent board members for exercise t of company i ; $SIZE_{i,t}$ = The number of board directors for year t and company i ; $REM_{i,t}$ = The ratio of equity remuneration to total remuneration received by board members for year t at firm i ; $OWN_{i,t}$ = The percentage of common shares held by board directors vis-à-vis the total number of outstanding common shares at year t for firm i ; $TEN_{i,t}$ = The average number of years of board directors' tenure for year t at firm i .

Company size measured by both market value and book value shows important variations between the smallest and largest companies. The average market value is 18.2 billion with a standard deviation of 16.1 billion. The smallest market capitalization is 0.8 billion whereas the largest is 78.6 billion. Book values range from 300 million to 42.3 billion. The average book value is 8.9 billion with a standard deviation of 8.1 billion. The average annual earnings are 1.2 billion, ranging from minus 4.5 billion to a maximum of 7.2 billion.

On average, company boards of directors are composed of independent directors in a proportion of 81.7% with a standard deviation of 11.84%. The size of a board varies between 5 and 21 with an average of 12.41 and a standard deviation of 2.73. The director share ownership goes from a minimum of nearly 0% to a maximum of 69%. The average board tenure is 6.86 years with a minimum of 0.4 years and a maximum of 13.57 years.

b) **Base Model Explaining the Company's Market Value and the Model Including the Variables Associated to the Research Hypotheses**

Table 2: Statistical Analysis

Explanatory Variables	Expected Sign	Equation 1		Equation 2	
		Coefficient ¹	t	Coefficient ¹	t
Constant		3.71	4.54 ^{***}	5.12	0.88
BV	+	1.17	12.82 ^{***}	1.16	11.77 ^{***}
EARN	+	3.43	6.27 ^{***}	3.13	5.74 ^{***}
IND	+			-4.51	-0.84
SIZE	-			-0.33	-1.33
REM	+			6.68	3.04 ^{***}
OWN	+			-9.01	-1.71 [*]
TEN	+			0.67	2.51 ^{**}
N		313		313	
R ²		0.648		0.666	
Increase in R ²				0.018	
Adjusted R ²		0.646		0.658	
Durbin-Watson		1.138		1.235	

¹MV_{i,t} = The market value of common shares of firm *i* six months after the closing date for financial statements of year *t* multiplied by the number of outstanding common shares at the end of year *t*; BV_{i,t} = The book value of common equity of firm *i* at the end of year *t*; EARN_{i,t} = Earnings of firm *i* for year *t*; IND_{i,t} = The percentage of independent board members for exercise *t* of company *i*; SIZE_{i,t} = The number of board directors for year *t* and company *i*; REM_{i,t} = The ratio of equity remuneration to total remuneration received by board members for year *t* at firm *i*; OWN_{i,t} = The percentage of common shares hold by board directors vis-à-vis the total number of outstanding common shares at year *t* for firm *i*; TEN_{i,t} = The average number of tenure years of board directors for year *t* at firm *i*.

*, **, *** statistically significant at 99%, 95%, and 90 % levels of confidence.

Measured by the R^2 , the two base variables explain 64.8% of company market value and the model as a whole is significant at a confidence level of 99%. The coefficients of each variable included in the base model are significant at a threshold of 99%. There is no bias due to colinearity of the independent variables based on the VIF statistics. It is possible to conclude, based on this regression analysis, that the two base variables suggested by Ohlson (1995) explain the market value of the firms in the sample fairly well. Adding the variables linked to the research hypotheses adds a bit of explanatory power to the model. They allow the adjusted R^2 to go from 0.646 to 0.658. There is no bias due to colinearity of the independent variables, according to the VIF statistics.

All firms in the sample abide by the minimum threshold of 50% of independent directors required by securities regulation. The coefficient for the director independence variable is negative and not significantly different from zero at a confidence level of 90%. This implies that the hypothesis cannot be accepted. It is possible to conclude, on the basis of this result, that it is not possible to create value by appointing a proportion of independent directors higher than the minimum required threshold. This result is in line with the comment by Wright (2004) who argued that a director's independence will not necessarily affect his willingness to succeed in the role that was entrusted to him.

The hypothesis linked to the board of directors' size is always non significant at a threshold of 90%. Our literature review showed that there are two schools of thought regarding board size. The one advocating small size argues that small boards favor quicker decision-making, candid discussions, stronger risk aversion and less CEO control on the board. The one that supports a larger number of directors points to the varied contribution of expertise (Chaganti et al. (1985 and Larmou and Vafeas (2010)) and the distribution of the workload over a larger number of directors. The non significant result could be due to the opposing effects identified by these two schools of thought cancelling out. The hypothesis could therefore be reformulated in future research into a measurement interval of the optimum number of directors. The boards of directors for which the number of directors is between the minimal and maximal boundaries would create value for the company in the form of an increase in share value.

The hypothesis concerning stock-based compensation is significant at a threshold of 99%. A company's market capitalization thus seems to be positively affected by the proportion of the directors' stock-based compensation. This result is in accordance with Magnan et al. (2010) who concluded that this form of remuneration created value by encouraging directors to better monitoring management. It is worth to note that in the large majority of cases, directors choose which proportion of remuneration will be stock-based. The directors' choice to receive a larger proportion of their compensation in the form of stocks could thus be a positive signal transmitted by the company's insiders on its future.

The coefficient associated to ownership is significant at a threshold of 90%, but it exhibits the opposite sign that was expected. Director stock ownership would thus have a negative effect on the sample companies' market capitalization over the period studied. This result contradicts the dominant trend in literature. However, it supports the recent work of Pergola and Joseph (2011) who uncovered statistical evidence suggesting that there is a non-linear relationship between director stock ownership and firm value. At the beginning, stock ownership favors share price until it reaches a threshold allowing directors to override governance mechanisms (ex. they possess enough shares to favour their re-election), thus producing reductions in share price. If

director ownership continues to grow, however, it eventually arrives to a level assuring again alignment of management and shareholders' interests. There are two clues that lead to believe that this situation is present in our sample. The first one is the average number of years on the board of directors, which is 6.86 years, and the second is the average level of stock ownership by directors, which is 4% with a standard deviation of 11.5%. There could thus be a large number of companies whose directors have a sufficient amount of power not to be beholden to shareholders, without having enough ownership to assure alignment with shareowners' interests.

The fifth hypothesis, which stated that director's tenure is associated to the creation of value, is significant at a threshold of 95%. This result supports the idea that an experienced board will create more value for the shareholders. These results contradict those of Anderson et al. (2004), associating the increase of the average number of tenure years from 7 to 8 to a higher cost of debt, and those of Byrd et al. (2010) showing that CEO compensation (as a proportion of firm value) increases with director's average number of years of tenure, suggesting that directors tend to lose their critical spirit with regard to their work as the years wore on.

V. Conclusion

The financial scandals of the late 90's undermined investor confidence in boards of directors. Regulators and companies themselves attempted to provide a remedy by improving governance. In this context, this study had the goal of determining if the boards of large Canadian corporations listed on the S&P/TSX 60 index had certain characteristics which created value by increasing market capitalization, between 2005 and 2010. The characteristics that were studied were independence, board size, the ratio of stock-based compensation to total compensation, director stock ownership and the number of years of director's tenure.

This study contributes in some ways to the existing literature on the characteristics of a board of directors. It tests the ability of some board characteristics in a Canadian context to increase value measured by market capitalization. Among these characteristics, it notably explores the effect of the stock-based compensation ratio to total compensation as a signal from directors conveying to investors the future prospects of the company. Director compensation considered in this way, and using this particular metric, to the best of the authors' knowledge, has not yet been studied empirically.

Based on Ohlson's (1995) model, our research shows that stock-based compensation and the directors' average number of years of tenure are favourably perceived by financial markets. The coefficient associated to the stock ownership variable was negative and significant. This result, which is contrary to what was expected, demonstrates that director share ownership does not necessarily help to achieve the goal of aligning director interests with those of shareholders. The hypotheses linked to independence and board size were not significant at a threshold of 90%.

We limited our choice of the board of director characteristics studied to five. There are a large number of characteristics that are accounted for by investors when making their investment decisions. Also, the measures of the variables linked to the hypotheses could have been different. There are multiple avenues for future research on the makeup of boards of directors. Our research suggests two refinements: Defining the optimal board size in the form of intervals and distinctly considering option-based compensation when discussing stock-based compensation.

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Factors Influencing Sustainability Content on Corporate Websites: The Case of Canadian Oil Companies

Abstract: Over the Last decade, the Internet has become an indispensable tool and a key element in most companies' communications strategies. This study attempts to assess the impact of certain determinants on the sustainability disclosures posted on the websites of oil companies, which are generally regarded as highly polluting. The website content of 68 of the largest oil firms listed on the S&P/TSX was assessed using indices based on each of the three Global Reporting Initiative (GRI) components to determine its relation to certain corporate characteristics. The results tend to show that the larger the firm and the greater its media exposure, the more likely it is to include social responsibility disclosures on its website.

Introduction

In today's age of information technology, organizations are becoming increasingly aware of the potential "audience" that their website can reach. Since they have had to review their communication strategies to respond to stakeholders' growing interest in the environment, more and more companies are posting information on their sites about their sustainability initiatives, performance and achievements in addition to financial information.

As a result, despite the fact that some firms are claiming kudos for their contributions to economic development and technological advances, a number of companies have been criticized for how they manage their operations. Although Canada lacks legislation on sustainability reporting, certain firms are often encouraged to expand their accountability to cover a broader stakeholder than simply shareholders and creditors. In fact, over the last two decades, social disclosures have become increasingly prevalent in response to public awareness of and interest in social and environmental issues and growing media attention (Deegan & Gordon, 1996).

Since disclosures are voluntary in Canada, this study attempts to determine whether certain characteristics such as firm size, media exposure, profitability and debt level influence sustainability disclosures on the websites of oil companies listed on the Toronto Stock Exchange. Although this trend is relatively recent and poorly documented from this specific perspective, this research complements a number of empirical studies in Canada and elsewhere on voluntary sustainability disclosures and their determinants.

This study differs in that it primarily focuses on the HTML content of websites rather than on the content of sustainability reports. It also examines the question in more depth since it is aimed

exclusively at a specific target sector, i.e. oil companies and refineries, assessing their website content using three indices modelled on the three Global Reporting Initiative (GRI) components. Accordingly, the website content of the 68 largest oil companies listed on the S&P/TSX was evaluated using a separate GRI-based index for each of the three sustainability components, i.e., environmental, social and economic.

Studies by Hoffman (1999) and Bowens (2000) have identified certain high environmental impact sectors, such as the metal, pulp and paper, electricity production, chemicals and natural resources industries, including oil companies and refineries. Known to be highly polluting, the oil industry attracts particular attention because of its strong impact on the environment, as evidenced by incidents like the Gulf of Mexico oil spill in 2010.

The findings enable us to identify the determinants influencing oil companies' disclosure strategies and serve as a basis of comparison between same-sector companies by allowing them to situate their sustainability performance and communications or even their annual reports. Lastly, this study provides empirical observations that can be useful to various authorities interested in being involved in regulating corporate communication practices on sustainability performance. The rest of this article is organized into several sections. It first presents the theoretical framework, based on previous studies. It then describes the research methodology and sample, the independent variables and the regression models used. It subsequently presents the study's results, followed by the conclusion, which sums up the main findings and outlines the study's contribution, its main limitations and potential avenues for future research.

Development of the Theoretical Framework

Sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). In recent decades, this subject has sparked considerable interest among researchers and publics becoming increasingly concerned about corporate social responsibility. To address these concerns, firms have had to develop disclosure strategies. By example, Cormier, Ledoux and Magnan (2008) have shown that companies appear to take into account the information cost and the ensuing benefits for shareholders when determining the extent of their website disclosures.

To date, some research has centered on disclosures presented in corporate social responsibility (CSR) reports (Sutantoputra, 2008), while other studies (Reverte, 2009; Tagesson et al., 2009) have largely concentrated on the information content of sustainability-related sites. Moreno and Capriotti (2009) have shown that the web has become a critical communications tool for sustainability reporting although its use has been limited to certain specific content. Wheeler and Elkington (2001) have gone so far as to entitle their article “*The end of the corporate environmental report.*” And so it seems that websites are playing a larger role in corporate communication strategies, supplanting standard sustainability reports.

Reverte (2009) sees the nature of a company's activities as one of the most common variables explaining the environmental content disclosed. Brammer and Pavelin (2004) and Tagesson et al. (2009) also demonstrated that the type of industry in which a company is active influences its disclosures. Furthermore, several empirical studies (Hoffman, 1999; Bowen, 2000) have

identified certain high environmental impact sectors, such as the metal, natural resources, pulp and paper, electricity production and chemicals industries. These industries are often associated with environmental problems (Bowen, 2000) like the dumping of hazardous substances and global warming, all of which significantly contribute to raising global pollution levels. As a result, organizations working in these sectors, such as oil companies and refineries, have to realign their communication strategies to deal with this reality and inform stakeholders. Cho and Roberts (2009) examined the content and presentation of the information disclosed on the websites of 76 companies to relate them to their environmental performance measured according to the “Toxic 100 list.”¹³ They noted that the poorest environmental performers make more extensive disclosures in terms of website content and presentation.

A number of studies have attempted to identify the determinants affecting the quantity and quality of corporate disclosures on their environmental, social and economic performance. Using the analysis index modelled on the GRI reporting framework, Clarkson et al. (2008) found a positive association between a firm’s environmental performance and its level of environmental disclosure. Unlike Cho and Roberts (2009), Clarkson et al. (2008) concluded that the better a company’s environmental performance, the more it will be inclined to disclose a large volume of comprehensive information.

Brammer and Pavelin (2004; 2006), Reverte (2009) and Tagesson et al. (2009) showed that a company’s size is a significant determinant in social disclosure. However, visibility is not only determined by size. Recent research has highlighted the importance of media exposure in determining the nature and context of the relationship between companies and stakeholders (Brown & Deegan, 1998). Brammer and Pavelin (2004) and Reverte (2009) all consider media exposure to be positively correlated to a firm’s disclosure performance. Accordingly, the broader the company’s media exposure, the more information it discloses. Reverte (2009) in fact considers media exposure to be a stronger determinant than size in discretionary disclosures. However, studies by Tagesson et al. (2009) support a positive correlation between a company’s profitability and the social content of its website. Brammer and Pavelin (2006) found that larger firms with less debt with dispersed property rights are more likely to make voluntary environmental disclosures and that the quality of this information is positively related to the company’s size and environmental impact. In contrast, based on a sample of Spanish companies, Reverte (2009) demonstrated that neither profitability nor debt level appear to explain the different corporate social disclosure practices.

In short, although a number of studies have already addressed the subject, this study concentrates on the sustainability communication strategies of oil companies and refineries in order to identify the main trends and determine the characteristics of those companies that tend to be more committed to these types of disclosures. The aim is to provide a picture of the industry’s behaviour and to contribute to the development of knowledge about corporations’ voluntary sustainability disclosures.

¹³ The “Toxic 100” is a list of 100 companies in the United States, ranked by the amount of air pollution produced and the relative toxicity of the pollutants, as determined by the Political Economy Research Institute (PERI) at the University of Massachusetts Amherst.

Methodology

The *Compustat* data base was used to compile a list of oil companies and refineries listed on the Toronto Exchange. It also enabled us to determine the sales, total assets, market capitalization, return on assets, and debt-equity ratio of each company. Only those companies with sales of over \$10 million were included in the analysis. In addition, income trusts and companies acquired or merged in 2010 were eliminated from the sample. The study thus focused on a sample of 68 active Canadian oil companies listed on the Toronto Exchange. The website of each company was traced through a direct link on the Toronto Exchange site.

Note that the information on corporate websites accessible through a direct link to sustainability or an annual or any other type of report included in the financial statements was not taken into consideration since the research objective was to examine only the information directly available on the corporation's website. This type of data is easily accessible and may be quickly consulted by stakeholders.

The website content was analyzed according to the GRI-based content analysis index for each of the three sustainability components. The "Index assessing the quality of discretionary disclosures about environmental policies, performance and outputs," developed by Clarkson et al. (2008) was used for the environmental component. The social component was analyzed according to the "Social disclosures rating based on GRI 2002 Guidelines" established by Sutantoputra (2008). Lastly, the economic component was assessed according to the rating of the economic component developed by Leclerc, Berthelot and Coulmont (2010) and based on GRI G3 (2006).

The information in the three indices is broken down into two categories, i.e. hard disclosures for those supported by tangible evidence and soft disclosures for those with little or no substantiation. The indices class the various disclosures into the following seven well-defined categories: governance structure and management systems, credibility, performance indicators, spending (except for the economic component), the firm's vision and strategies, its profile and, lastly, its initiatives. Hard disclosures make up the first four categories, while soft information is covered in the other three. A certain number of points is attributed for the firm's disclosures for each category for a possible total of 255 points.

Data was collected by reading website disclosures and taking care to complete each of the three indices by granting a rating of 1 when the disclosure item according to GRI was included, and 0 otherwise. Thus, the total sustainability performance is obtained through the website by totaling up the points.

Determinants

The following four variables were considered to have a potential influence on the degree or quantity of information disclosed on corporate websites: company size, media exposure, profitability and debt level.

Size. Most researchers studying the impact of a company's size on information disclosure used total assets (SIZE) as a unit of measure (Brammer and Pavelin, 2004; 2006; Clarkson et al., 2008). However, to ensure that total assets are the most representative measure of company size, they were compared to the market capitalization as used by Reverte (2009) and to the sales of

each of the firms in the sample. As Table 1 shows, the correlations between the different measures of size are very significant and are highly correlated with the measure of level of discretionary sustainability disclosure (LDSD). The following analyses use total assets as a measure of a company's size.

Table 1: Company size / level of discretionary sustainability disclosure

	IDP	Market capitalization	Total sales	Total assets
LDSD	1	0.874**	0.844**	0.875**
Market capitalization		1	0.908**	0.954**
Total sales			1	0.848**
Total assets				1

**Significant correlation at 0.01 level.

Media exposure. The number of articles published in *The Globe & Mail* in 2009 was used to measure the media exposure (ME) of the companies in the sample. The CPI.Q (Canadian Periodical Index) database was used to extract this information. This database provided references for articles listed in international and Canadian periodicals such as *The Globe & Mail*. Reverte (2009) identified the number of articles published in two major business newspapers in Spain using the simple research technique of going directly to the papers' web pages for the two years analyzed. In this study, only *The Globe & Mail* was used as a source for media exposure since it is one of Canada's major business newspapers.

Profitability (ROA). The profitability examined in this study was determined by the return on assets or the net profit over total assets as used by Brammer and Pavelin (2006), Reverte (2009), Clarkson et al. (2008) and Tagesson et al. (2009).

Debt level. Although Clarkson et al. (2008) used total debt over total assets; this research interprets the debt level (DEBT) as being the long-term debt over shareholders' equity as used by Reverte (2009).

Empirical model

In order to analyze the relationship between the companies' level of discretionary sustainability disclosure (LDSD) and each of the determinants representing the independent variables presented in the previous section, a multiple linear regression model was developed. The LDSD on the websites represents the total points obtained based on compliance with the different criteria of the three evaluation indices used (environmental, social, economic). Based on the GRI, the first index is that developed by Clarkson et al. (2008), which focuses on the information relating to corporate environmental performance. The second index is that developed by Sutantoputra (2008) and addresses social disclosures. Lastly, for disclosures on economic areas, we used the index developed by Leclerc, Berthelot and Coulmont (2010). It should be noted that the Sutantoputra (2008) and the Leclerc, Berthelot and Coulmont (2010) indices are similar in structure to Clarkson's (2008). However, they complement the latter by expanding to include the social and economic components, as recommended by the GRI reporting framework

The following regression model was used:

$$\text{LDSD}_i = \beta_0 + \beta_1 \text{SIZE}_i + \beta_2 \text{ME}_i + \beta_3 \text{ROA}_i + \beta_4 \text{DEBT}_i + \varepsilon_i \quad (1)$$

Where,

LDSD_i is the level of discretionary sustainability disclosure;

SIZE_i is size of the company (total assets);

ME_i is media exposure;

ROA_i is profitability (Return on assets);

DEBT_i is Indebtedness;

ε_i is the error term.

Results

Descriptive analysis of the sample

The sample was made up of companies with sales of \$10 to \$634 million, the effect of size being well represented. Of the 68 companies studied, only 9 (13.2%) issued a sustainability report separate from their annual report on their website. In addition, 38 companies mentioned sustainable development on their website at least once, versus 30 companies (44.1%) that did not refer to any of the three sustainability components.

Some results of the analysis of the websites' content are particularly noteworthy. First of all, 32 (47 %) of the 68 companies present their social policies, values and principles, as well as the code of ethics endorsed among their managers, employees and suppliers. Furthermore, 28 firms or 41% of the sample set out their environmental policies, values and principles. As for the economic component, 16 companies or 24%, present their investments and voluntary contributions to the community, while 14 or 21% mention their dividend distribution.

Table 2 contains a descriptive analysis of the study's variables. The level of discretionary sustainability disclosure relative to the websites of the sample companies ranges from 0 to 153 points. Since the total number of possible points is 255, it would appear that the quantity of the information disclosed is relatively low in relation to the GRI requirements, which are the benchmark for the three indices used to assess the websites' content.

The 68 companies in the sample have total assets of between \$96 M and \$69.746 B, with an average of \$4.717 B. Their return on assets ranges from a negative return of 64% to a positive one of 23%. On average, the companies posted a negative return on assets of around 4%. As for their media exposure, the number of newspaper articles in *The Globe and Mail* in 2009 varied from 0 to 118 with an average of 6.03 per company. Lastly, the sample is made up of firms whose debt level ranges from 0 to 255%, with an average debt level of 33%.

Pearson's correlations between the LDSD_i obtained from analyzing the firms' website content and the four independent variables, i.e. size (total assets), return on assets, media exposure and debt level are presented in Table 3. The variables representing the total assets (SIZE_i) and media exposure (ME_i) are strongly correlated with the level of discretionary sustainability disclosure (LDSD_i) (coefficients of 0.875 and 0.7750). In contrast, the return on assets (ROA_i) and the debt level (DEBT_i) show low levels of correlation (coefficients of 0.273 and 0.221). Note that size and exposure appear to be strongly correlated.

Table 2: Descriptive analysis of variables

Variables	N	Minimum	Maximum	Average	Std Dev	Median
LDSDi (/255)	68	0	153	14.2	29.56	2
SIZEi (in M)	68	96	69,746	4,717	11,602	451
ROAi	68	-64.07%	23.32%	-3.55%	10.30	-2.98%
MEi	68	0	118	6.03	19.52	0
DEBTi	68	0	255%	33%	49%	17%

Table 3: Total Disclosure Performance / Independent Variables

Variables	IPDi	SIZEi	ROAi	MVi	DEBTi
LDSDi	1	0.875**	0.273*	0.775**	0.221
SIZEi		1	0.235	0.843**	0.230
ROAi			1	0.187	-0.305*
MEi				1	0,177
DEBTi					1

**Significant correlation at 0.01 level.

* Significant correlation at 0.05 level.

Multiple Linear Regression

Due to the presence of heteroscedasticity, a logarithmic transformation was made to the company size ($SIZE_i$). Following this transformation, the remainder was distributed normally. Table 4 presents the results of the analyses carried out using the ordinary least squares method.

The coefficients associated with firm size ($SIZE_i$) and media exposure (ME_i) are positive (8.281 and 0.742) and significant as expected. These results show that a company's size and political visibility seem to have a significant impact on its level of discretionary sustainability disclosure ($LDSDi$).

However, the coefficients relating to the return on assets and debt level do not seem relevant. Contrary to expectations, the coefficients associated with these two variables are non-significant. These results contradict those of Tagesson et al. (2009) who hold that a positive correlation exists between a company's profitability and the level of discretionary social disclosure on its website. Nonetheless, our results confirm those of Reverte (2009), which demonstrate that neither profitability nor debt level seem to explain the corporations' various communication practices respecting their social responsibility. Lastly, it should be pointed out that the model explains 72.4% of the variance of the level of discretionary sustainability disclosure on the websites.

Table 4: Regression Analysis, Dependent Variable: LDSDi (N=68)

Model	Expected sign	Non-standardized coefficients		Standardized coefficients	t	Sig
		B	Std Dev	Beta		
SIZE	β 1 (+)	8.281	1.653	0.477	5.010	0.000
ME	β 2 (+)	0.742	0.123	0.490	6.053	0.000
ROA	β 3 (+)	- 0.008	0.227	-0.003	-0.037	0.970
DEBT	β 4 (-)	-1.163	4.669	-0.019	-0.249	0.804
Constant		-45.586	10.673		-4.271	0.000

R = 0.861; R² = 0.741; adjusted R² = 0.724; F = 45,003; p = 0.000

The multicollinearity between the independent variables does not appear to be problematic in this model. The variance inflation factors (VIF) associated with company size (SIZE_i), return on assets (ROA_i), media exposure (ME_i) and debt level (DEBT_i) are respectively 2.205; 1.525; 1.592 and 1.458, which is lower than the prescribed limit of 10.

As Brammer and Pavelin (2004; 2006), Reverte (2009), and Tagesson et al. (2009) underlined, these results tend to confirm that company size is a significant determinant in sustainability disclosures on the websites of Canadian oil companies listed on the Toronto Exchange. As regards media exposure, these results confirm those noted by Brammer and Pavelin (2004) and Reverte (2009).

The analyses were carried out for each of the disclosure components proposed in the GRI reporting framework (environmental, social and economic). Table 5 displays the total points relative to the level of discretionary disclosure for each of the three index components. Companies' web communication strategies appear to favour the environmental and social aspects over the economic aspect. Note that the medians for the three information categories amount to a value of 1 out of the respective possibilities of 95 points and 83 points for the environmental and social index and 0 for the economic index out of a possible 77 points. This study demonstrates that, in general, a number of companies in the sample disclose very little sustainability information. It should also be noted that all 68 companies scored a low median of 0. What's more, substantial differences can be observed between the minimum and maximum number of items that could be disclosed by the companies for each of the three areas.

Table 6 presents the correlation coefficients between the independent variables and the three components of the global level of discretionary sustainability disclosures. Again, company size (SIZE_i) and media exposure (ME_i) are also strongly correlated with the three components of discretionary sustainability disclosure. Return on assets (ROA_i) and debt level (DEBT_i) are poorly correlated with the level of disclosure related to the three components of the GRI sustainability reporting framework.

Table 5: Descriptive analysis

	N	Minimum	Maximum	Average	Standard deviation	Median
Dependent variable						
Total LDSDi	68	0/255	153/255	14./255	29.56	2/255
Dependent variable breakdown						
Environmental	68	0	63/95	5.8	12.63	1
Social	68	0	54/83	5.4	10.67	1
Economic	68	0	36/77	2.9	6.79	0

Table 6: Independent variables / Disclosure performance breakdown

	SIZE _i	Me _i	ROA _i	DEBT _i
LDSD _i , Environmental	0.897**	0.795**	0.269*	0.239*
LDSD _i , Social	0.835**	0.697**	0.266*	0.210
LDSD _i , Economic	0.0**	0.801**	0.268*	0.185

** Significant correlation at 0.01 level.

* Significant correlation at 0.05 level.

Conclusion

This study examined four potential determinants of the level of discretionary sustainability disclosures on the oil companies' websites. In short, it appears that the level of discretionary disclosures on these websites is impacted by the firms' size and media exposure. These results confirm the conclusions of Brammer and Pavelin (2004; 2006), Reverte (2009) and Tagesson et al. (2009). Furthermore, the fact that media exposure is a significant variable in the model supports the findings of Reverte (2009), which demonstrated that the media exposure is the variable that most influences discretionary disclosures, followed by size and industry.

This study has certain limitations. First of all, it focuses essentially on website disclosures, although the Internet is only one dimension of a company's disclosure strategy. Furthermore, the level of discretionary sustainability disclosure was assessed only on the basis of HTML information that is directly accessible on the company's website, thereby excluding links to PDF documents such as quarterly reports, annual reports, press releases and separate sustainability reports. As well, the interpretation of the three indices used to analyze the websites' content constitutes another limitation because of the subjective nature of the interpretation of the various criteria. Lastly, although the sample is made up of a large share of the oil companies listed on the Toronto Exchange, it is nonetheless limited to this type of firm. Further research could therefore be carried out with samples made up of companies active in other industries in order to strengthen the study's main findings.

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The Impact of the Seniority of Directors on Their Independence

This research examines the impact of the seniority of independent directors of 178 Canadian companies on the compensation paid to their senior executives and the financial performance of these companies. We assume that, as the seniority of directors usually defined as “independent” increases, their independence is compromised because of the relationships they build with company executives. Therefore, seniority should be taken into account in studies using director's independence as a variable. Results show that the seniority of independent directors has a positive impact on the compensation of senior executives but no significant impact on the financial performance of companies.

Introduction

Over the last few years, it has become increasingly important to protect the interests of minority shareholders, namely because of the numerous financial scandals that erupted in practically every developed economy. According to a group of experts, one of the major causes of these scandals resides in the lack of control by disengaged independent directors (High Level Group of Company Law Experts, 2002 in Van den Berghe & Baelden, 2005). This is why the Boards of Directors' main role now focuses on the control of corporate senior executives. In this context, and to address the growing concerns of investors, the Canadian Securities Administrators (CSA) established regulations to better control governance practices. Among these regulations, Regulation 52-110 adopted by the Ontario Securities Commission (OSC) and counterparts in other provinces attempts to clarify the concept of independent directors by defining it according to certain criteria. That said, this definition is limited, as certain circumstances not covered by the regulation could question a director's true independence. This is the case for the seniority of directors, as close relationships can be established over the years.

We therefore study the impact that the seniority of independent directors who have been members of the same Board of Directors for many years has on the financial performance of the companies and the compensation paid to CEOs. Do the close relationships established between executive members and independent directors (as defined by regulation) throughout the years influence the judgement of these directors and compromise their "true" independence? The case being, these relationships could undermine the overall effectiveness of the Board of Directors. To examine this question, a sample of 178 companies listed on the Toronto Stock Exchange for 2009 was selected to examine the situation in a Canadian context. The effectiveness of the Board of Directors will be studied with regards to its impact on two aspects in which the Board of Directors can play a major role: a company's financial performance and the compensation of senior executives.

If there is a negative relationship between the seniority of independent directors and the effectiveness of the Board of Directors, its identification will help to better target the changes and clarifications that will have to be provided to the criteria that currently define what an independent director. The interests of minority shareholders will thus be better protected against decisions made by Boards of Directors, decisions that may sometimes disadvantage them for the benefit of senior executives.

We will start by presenting the theoretical framework and hypotheses, then the methodology describing, among others, the sample, the variables and their operationalization, and the models used. We will then move on to the results and end with the conclusion.

Background

Agency theory

According to Agency theory, the conflicting interests between the shareholders (the principal) and the executives (the agent) are causing numerous problems. On the one hand, shareholders want to optimize the value of their investment while on the other, executives may have enough leeway to, on the contrary, maximize their personal benefits at the expense of the wealth of the shareholders (Watts & Zimmerman, 1986). Structures were thus developed to minimize the conflicts of interest. For example, the compensation of senior executives often includes a portion of fixed salary and a portion based on the company's financial performance (shares, share options, performance-related bonuses). This mechanism allows for a certain alignment between the interests of shareholders and those of executives (Scott, 2011) and the reduction of costs linked to agency settings. The overall objective of shareholders remains to minimize agency costs including losses linked to the misalignment of the interests of executives, and also all control costs linked to the monitoring of these executives (Kim, Nofsinger & Mohr, 2010).

An underlying condition to the existence of the agency conflict is the information asymmetry problem (Jensen, 1986). Indeed, investors need information that can only be provided by the executives, but these executives will tend to give censored information if it allows them to manipulate the assessment of the company to their advantage (Black, 2000 in Russ, 2006). This is why the Boards of Directors play an important role in the exercise of effective governance, as they serve as middlemen between both parties. From this perspective, an effective Board of Directors must first take on a control role towards the company's senior executives to protect the interests of shareholders (Hermalin & Weisbach, 1998). That said, to optimize the effectiveness of the Board of Directors, the independent directors must realize that their role is both to control the conduct of senior executives and support them if necessary. Exaggerating the control role undermines the collaborative relationship between the directors and senior management, and by extension, the company's performance and its ability to attain its objectives (Shen, 2005).

Independence of the Board of Directors

Always in a spirit of good governance practices, some claim that the independent directors help increase the transparency of the information provided, which is essential to the effectiveness of financial markets (Russ, 2006). Furthermore, the desire to control the actions of senior executives increases with the independence of the director (Hermalin & Weisbach, 1998). The effectiveness of a Board of Directors is thus often related, as found in prior works, to a simple majority of independent directors (Dalton, Daily, Certo, and Roengpitya, 2003 in Petrovic, 2008; Dey, 2008;

Fich & Shivdasani, 2006 in Adams; Hermelin & Weisbach, 2010; Godard & Schatt, 2005; Langevoort, 2001).

Numerous models were proposed to increase the effectiveness of the Board of Directors. Langevoort (2001) namely proposes a tripartite Board structure, that is, a Board composed of independent directors and executives, as well as “grey” mediators. These mediators would be directors possessing a certain management expertise, for example lawyers or bankers, and whose role would consist in bridging the gap between both parties. Baranchuk and Dybvig (2009) state that the simple majority of independent directors (50% + 1) is insufficient to guarantee the effectiveness of the Board given the possible collusion with executives. Indeed, these executives usually share the same objectives and opinions, while the ideas of independent directors may be more dispersed (Baranchuk & Dybvig, 2009). According to these authors, a qualified majority should be encouraged, for example a Board of which two thirds or three fifths of its members are independent. That said, these models focused especially on the Board’s composition and structure rather on the definition of independence itself. Indeed, some believe (e.g., Shen, 2005) that a Board’s effectiveness is more influenced by its dynamics than its structure and composition. Nevertheless, the question of independence of mind seems to be important enough for it to be defined by the Code of Ethics of the International Federation of Accountants (IFAC).

This world organisation of the accounting profession defines independence as a state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgment, thereby allowing an individual to act with integrity and exercise objectivity and professional scepticism (Van den Berghe & Baelden, 2005). That said, given that independence of mind is hard to measure, it can only be measured indirectly, through the seniority of its directors for example. No study seems to have yet examined the number of years an independent director has been a member of the same Board as a measure of independence of mind. We think it is an important variable to take into account because, with time, independent directors (as defined by regulation) become familiar with the other directors, the company and its activities, which can play a role in diminishing their critical mind (Van den Berghe & Baelden, 2005). This relaxation could undermine the effectiveness of the Board of Directors.

Compensation of senior executives

The impact of an effective and independent Board of Directors on the compensation of executives is the subject of certain ambiguities in prior studies. For example, Bedchuk and Fried (2003) claim that weaker, or less independent, Boards of Directors tend to overpay their senior executives; however, another study makes important clarifications and exposes the fact that the Boards have become more diligent globally over the last few years, following namely the numerous financial scandals and the subsequent pressures from investors, and that they now demand more work from their senior executives. That said, these additional efforts are often rewarded by an increase in compensation. Therefore, over time, the compensation of senior executives should be positively linked to the Board of Directors’ diligence (Hermelin, 2005).

That said, we think that the seniority of independent directors, which can undermine their critical mind, should allow the senior executives to increase their hold on the Board of Directors and thus influence its decisions, namely regarding executives’ compensation. This would involve to receive a compensation beyond what should be rewarded because of their efforts This is why the following hypothesis is formulated:

H1: The seniority of independent directors is positively related to total compensation of senior executives.

Financial performance

Some older works demonstrated that the level of independence of the Boards of Directors had a positive impact on the financial performance of companies (Baysinger & Butler, 1985; Rosenstein & Wyatt, 1990; Pearce & Zahra, 1992 in Godard & Schatt, 2005). One mechanism that could help to explain this finding is that companies would add independent directors when they exhibit poor performances (Hermalin & Weisbach, 1988; Kaplan & Minton, 1994). That said, recent studies show more mitigated results. Indeed, these studies did not detect significant relationships between the proportion of independent directors and the performance measures of the companies examined (Klein, 1998; Bhagat & Black, 2001 in Dey 2008). An explanation regarding this disparity was brought forward: the absence of a relationship between the Board of Directors' independence and the financial performance is probably only true for companies with a low agency conflict level. Indeed, companies with a high level of agency conflicts would implement significant governance mechanisms to monitor their senior executives. On the other hand, executives in companies with a low level of agency conflicts do not require as much control, and the governance practices thus do not affect the financial performance significantly (Dey, 2008).

Given the contradictory results in previous studies, our study will attempt to examine the relationship between the financial performance and the Board of Directors' independence from a different angle. Indeed, our study puts its main emphasis on the testing of the seniority of the independent directors rather than on the proportion of independent directors as defined by the company, which leads to the following hypothesis:

H2: The seniority of independent directors is positively related to the financial performance of companies.

Methodology

Sample and data collection

In order to test the hypotheses in a Canadian context, a sample was drawn from Canadian companies listed on the Toronto Stock Exchange and forming the S&P/TSX composite for 2009. The initial sample was composed of 229 companies from which 42 trusts and income funds were removed as well as nine inactive companies (companies indicating zero sales). The final sample was composed of 178 companies.

First, to collect the data needed for the analysis, the financial statements were consulted, which allowed for the identification of the size and financial performance of the companies. Then, the management proxy circulars of each company provided information on the compensation of the CEOs, the identity of the main shareholders, the composition of the Boards of Directors, their independence and the governance policies applied. More specifically, the governance policies section discloses relevant information on the criteria applied to rule on the independence of a director. As for the principal shareholders, they are the shareholders who own more than 10% of the voting rights or control more than 10% of the voting rights, directly or indirectly. After having identified these shareholders, we determined whether they were executives, directors or outside

individuals, whether it be a moral or physical person, as each person can have a notable influence on the Board of Directors, and their motivations can differ (Shleifer & Vishny, 1997).

Meaning of independence

In the Canadian context, the companies listed must comply with the Securities Act. Among the requirements of this Act, Regulation 58-101 of the OSC with respect to the disclosure of corporate governance practices stipulates that a director is independent if he or she would be independent within the meaning of Sections 1.4 and 1.5 of Regulation 52-110 regarding Audit Committees. It is thus according to this definition that the study on the independence of directors was conducted for the purposes of our research. Regulation 52-110 defines independence as follows:

... the member (administrator) has no direct or indirect material relationship with the issuer. However, this is the board of directors itself which decides if a relationship is “material” by answering the following question: “can the relationship be reasonably expected to interfere with the exercise of a member's independence?”

Variables

a. Dependant variables (see Table 1). We suggest examining the relationship between the average seniority level of independent directors (the relative level of the independence of mind) and the compensation level of executives as proposed in hypothesis 1. The compensation level (REMUN) will be measured using the total compensation of the Chairman and Chief Executive Officer (CEO). More specifically, REMUN will be equal to the sum of the following elements: the base rate, stock and option-based awards, annual incentive plans other than stock-based, the annual value of the pension plan and any other compensation and benefits.

Moreover, hypothesis 2 is to measure the impact of the seniority level on the financial performance of companies. This performance will be measured using three distinct variables, namely the gross margin percentage (GROSMAR), the return on asset (ROA) and the return on equity (ROE).

b. Explanatory variable and control variables (see Table 1). To study the independence of the directors of each company, the ratio of independent directors compared to the total number of members sitting on the Boards of Directors could have been used. This measure was indeed often used in previous studies, but it does not take into account the independence of mind that directors can lose throughout the years because, namely, of the familiarity that develops among them, the company and its executives. This is why the notion of seniority will be measured according to the average years of seniority of independent directors (AVESEN).

AVESEN is the variable that we are hereby proposing to test to evaluate its impact on the compensation of the Chief Executive Officer and the performance of the company. That said, previous studies showed that other variables can impact the independent variables that we are planning to examine for the purposes of this study. This is why the variables most often used in models attempting to explain the compensation of the senior management or the performance of a company will be included in the models we will be testing.

The fact that an entity (physical person, company or institution) holds a large enough portion of the company to give him/her an incentive to invest the efforts needed to manage potential

conflicts of interest between the shareholders and executives was often presented as an aspect that could impact both the compensation of senior executives and the company's profitability. This is why our tests include the (PRINCHOL) variable, which is a dichotomous variable indicating the presence of at least one entity controlling 10% or more of the voting shares (value of 1 if there is at least one such entity, 0 otherwise). Such a level is often used in studies and also allows for the assumption that the holder of such a voting block can exert some level of influence on company decisions.

Our models also include a variable representing a more traditional measure of a Board's independence (RATIND); or the ratio between the number of qualified independent directors and the total number of members sitting on the Board of Directors.

Table 1: Description and Measure of the Variables

Variable	Description	Measure
REMUN	Total compensation to the Chief Executive Officer	Sum of the base rate, stock and option-based awards, annual incentive plans other than stock-based, the annual value of the pension plan and any other compensation and benefits.
GROSMAR	Gross margin percentage	Ratio between the gross profit margin (the difference between the sales and the cost of goods sold) and sales.
ROA	Return on asset	Ratio between the net earnings and the total assets.
ROE	Return on equity	Percentage ratio between the net earnings and the equity.
AVESEN	Average years of seniority of directors	Average number of years that independent directors have been sitting on the Board.
PRINCHOL	Principal holders	Total voting percentage of a shareholder or shareholders who individually control at least 10% of voting shares.
RATIND	Ratio of independent directors	Percentage ratio between the number of independent directors and the total number of directors.
ASSETS	Total assets (size)	Control variable corresponding to the total assets.

Lastly, our models include a measure of company size. The results presented here are those using the "ASSETS" variable, which are the company's total assets. That said, we also used another measure of the company size, namely the total amount of sales. The results using this last variable are similar to those using the "ASSETS" variable (note: that said, there were some minor differences about which we will be discussing briefly in Section 3.3). Furthermore, the results of model 1 are presented with one single profitability measure (GROSMAR); however, tests were conducted using the "ROA" and "ROE" ratios as a profitability measure with results identical to those presented using the "GROSMAR" variable.

Certain variables were also measured to be able to present descriptive information on our sample. These variables are presented in Table 2.

Table 2: Description and Measure of Descriptive Variables

Variable	Description	Measure
NUMDIR	Total number of directors	Total number of directors sitting on the Board of Directors.
MINSEN	Minimum seniority amongst independent directors (years)	Number of years that an independent director with the least seniority has been a member of the Board of Directors.
MAXSEN	Maximum seniority amongst independent directors (years)	Number of years that an independent director with the most seniority has been a member of the Board of Directors.
MAJ	Majority of independent directors defined as more than 50% of all directors	Dichotomous variable taking the value of 1 if there is a simple majority (50% + 1) of independent directors on the Board of Directors. Otherwise, the variable takes the value of 0.
QUALMAJ	Qualified majority: the proportion of independent directors represents at least 2/3 of all directors QUAL	Dichotomous variable taking the value of 1 if there is a qualified majority ($\geq 2/3$) of independent directors on the Board of Directors. Otherwise, the variable takes the value of 0.
DEF	A definition of director independence was published	Polychotomous variable taking on the value of 1 if no definition of independence has been published in the management proxy circular. The variable takes the value of 2 if there is just a simple reference to Regulation 58-101 or 52-110. The value of 3 is assigned when the company takes up the general definition of Regulation 52-110G and specifies that there must not be any significant direct or indirect relationship with the company. Otherwise, the variable takes the value of 4.

Empirical models

In order to examine the relationships that may exist between the number of years that an independent director has been sitting on a Board of Directors and the compensation of senior executives, the following regression model will be analyzed:

$$REMUN_i = \alpha_0 + \alpha_1 AVESEN_i + \alpha_2 RATIND_i + \alpha_3 GROSMAR_i + \alpha_4 PRINCHOL_i + \alpha_5 ASSETS_i + \varepsilon_i \quad (1)$$

Moreover, to analyze the relationship between the number of years that an independent director has been sitting on a Board of Directors and a company's financial performance, three distinct models will be considered:

$$GROSMAR_i = \alpha_0 + \alpha_1 AVESEN_i + \alpha_2 ASSETS_i + \alpha_3 PRINCHOL_i + \alpha_4 RATIND_i + \varepsilon_i \quad (2)$$

$$ROA_i = \alpha_0 + \alpha_1 AVESEN_i + \alpha_2 ASSETS_i + \alpha_3 PRINCHOL_i + \alpha_4 RATIND_i + \varepsilon_i \quad (3)$$

$$ROE_i = \alpha_0 + \alpha_1 AVESEN_i + \alpha_2 ASSETS_i + \alpha_3 PRINCHOL_i + \alpha_4 RATIND_i + \varepsilon_i \quad (4)$$

Results

Description of the sample

Table 3 presents descriptive data on the companies included in the sample. The average size is 27.2 billion dollars when measured according to the total assets variable while total sales average is 5.2 billion dollars. That said, in comparing these two averages with their respective median, an important asymmetry can be found: a few very large companies are conducive to the increase of the averages. Furthermore, the major deviations between the minimums and maximums, both in terms of the total assets and the total sales, demonstrate the great diversity in the size of the companies selected. Finally, the profits column provides an overview of the financial performances posted, which vary from a loss of 4.4 billion dollars to a profit of 3.9 billion dollars.

Table 3: Company Size (in millions of \$)

	Total Assets	Sales	Net Profit
Number of observations	178	178	178
Average	27,224,285	5,194,674	322,977
Median	3,031,948	1,407,770	101,942
Standard deviation	89,606,742	8,293,906	752,186
Minimum	135,504	1,195	(4,471,031)
Maximum	654,989,000	39,160,000	3,858,000

Table 4 paints a portrait of the business sectors of the companies included in the sample according to the Industry Classification System (ICS). The ICS codes were categorized according to the 10 major divisions (from A to J) included in it. A large part of the sample (37.6%) is composed of companies operating in mining exploration. The second and third most important groups represent the finance, insurance and real estate sector (18.0%) and the manufacturing sector (15.7%). All other sectors are represented in a proportion of less than 15%. It should also be noted that groups A to J, the agriculture, forestry and fisheries sector and the public administration sector respectively, are not represented in the sample.

Descriptive analyses

Table 5 provides a lot of interesting information. First, the average percentage of members considered independent on the Boards of Directors, according to Regulation 52-110 of the OSC, is 75.4%, which represents a large majority. That said, the minimum ratio in the sample is 37.5%. In other words, this company does not comply with the securities recommendations suggesting that the Board of Directors should have a majority of independent members. In fact, a total of 9 Boards do not reach this majority. On the other hand, 79.8% of Boards have a qualified majority of independent members, or a proportion that is equal to or greater than two thirds of its members (see Table 6).

Table 4: Business Sector

Division	Sector	Number	Percentage
B	Mining Exploration	67	37.6
C	Construction	1	0.6
D	Manufacturing	28	15.7
E	Transportation, Communication, Electricity, Petroleum and Sanitary Services	23	12.9
F	Wholesaler	5	2.8
G	Retailing	13	7.3
H	Finance, Insurance and Real Estate	32	18.0
I	Services	9	5.1
Total		178	100.0

Table 5 also presents information on the seniority of independent Board members. Their average seniority varies between 0.0 and 17.8 years. The value of "0.0" means that all independent members were appointed in the current year. This interval indicates that, for certain Boards, most members have remained the same for many years. To that end, the highest minimum seniority among independent directors is 8 years while the highest maximum seniority is 43 years. This data confirms that the independent directors of some Boards of Directors do in fact remain the same for many years. Even in these conditions, a director who has been a member of the same Board for 43 years, which is a significant amount of time, is considered independent. It is hard to believe that such an individual has not built relationships with company executives and that his/her judgment is really objective. Can he/she still really be considered independent? This shows the weakness of the definition of independence set out in Regulation 52-110 as these directors are still being identified as independent in the management proxy circular despite the numerous years spent on the Board of Directors.

On the other hand, the total average compensation of the CEOs is 4.1 million dollars. Moreover, let us mention the zero compensation of R. Friedland, Chief Executive Officer of Ivanhoe Energy Inc. That said, he is still being compensated as Chair of the Board of Directors. Given that this is an internal company policy recurring each year, the company was not removed from the sample. The highest compensation for 2009 was 24.2 million dollars. The average gross profit margins were 38.4%, which indicates the average financial performance level of the companies included in this study.

Moreover, Table 6 indicates that 42.7% of companies are controlled by at least one major outside shareholder who holds at least 10% of the voting shares, directly or indirectly. This is the case for 76 companies from the sample studied; however, this rate only represents 9.6% of the companies in terms of the ACTADM variable, or those companies that have at least one major shareholder also sitting on the Board of Directors.

Table 5: Analysis of the Continuous Variables

	Minimum	Maximum	Average	St. Dev.
AVESEN	0.0	17.8	6.5	3.1
MINSEN	0	8	1.6	1.5
MAXSEN	0	43	14.0	8.2
RATIND	37.5%	93.8%	75.4%	13.0%
GROSMAR	1.6%	93.5%	38.4%	20.7%
REMUN (in millions of \$)	0,000	24,206	4,108	3,764

Finally, the last variable (DEF), presented by Table 6, highlights the level of information provided by the circulars on the definition of independence used to catalogue each member of the Board of Directors. Thus 1.7% of companies did not propose a definition for the independence of directors. Although the proportion is very small, these companies display certain weaknesses in terms of the transparency of the information disclosed to minority shareholders. Furthermore, nearly 42.7% of the companies studied mentioned the general definition of Regulation 52-110G with few details, while 19.7% discussed the various criteria established by Articles 1.4 and 1.5 of Regulation 52-110 more explicitly. That said, it is interesting to note that the 9 companies that have not reached simple majority within their Board, which was discussed earlier, are all in categories 3 and 4. In other words, they all at least published the general definition of independence.

Results analysis

The results of the regression of the first model are presented in Table 7. First, it must be mentioned that all model 1 variables explain 14% of the variance in the compensation of the Chief Executive Officer. Not surprisingly, the size measured with the total assets, is significant in model 1. It thus helps to explain the compensation of the company's senior executive (level of sign.: 1% threshold). Also, the seniority of independent directors (AVESEN) is significant (5% threshold this time). Our results are thus in keeping with the predictions of our hypothesis 1 (H1): the seniority of independent directors has a positive impact on the total compensation of senior executives. According to our hypothesis, this means that directors who are said to be independent but who have been on the Board for many years build relationships with the company's senior executives and have less control on their compensation. As for the ratio of independent directors, the presence of major shareholders and the profit margin percentage, our results show no significant relationship.

If the measure of the company size is replaced by the "total sales" or the measure of a company's profitability by the "ROE" or "ROA" variables, the results remain similar.

Table 6: Dichotomous Variables

		Number	Percentage
MAJ	No	9	5.1
	Yes	169	94.9
	Total	178	100.0
QUALMAJ	No	36	20.2
	Yes	142	79.8
	Total	178	100.0
PRINCHOL	No	102	57.3
	Yes	76	42.7
	Total	178	100.0
ACTADM	No	161	90.4
	Yes	17	9.6
	Total	178	100.0
DEF	None (1)	3	1.7
	Mention (2)	64	36.0
	52-110G (3)	76	42.7
	Others (4)	35	19.7
	Total	178	100.0

Table 7: Results from the CEO Compensation Model (model 1)

	Standardized Coefficients	T Value	Adjusted R ²
(Constant)		1.411	0.14
AVESEN	0.152**	2.101	
RATIND	0.014	0.194	
GROSMAR	-1.027	-0.387	
PRINCHOL	-0.064	-0.882	
ASSETS	0.323***	4.404	

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8 then illustrates the results obtained for models 2, 3 and 4 respectively regarding the impact of the seniority of independent directors on the financial performance of companies. First, it must be noted that all models presented have a weak adjusted R², or 0.014 for model 2, 0.011 for model 3 and 0.003 for model 4. Of all models presented, only model 3 presents a significant variable, that is a more “traditional” measure of independence, which is the "RATIND" variable that identifies as independent all directors presented as such by the company (level of sign.: 10% threshold). This result is similar to the results of some other studies that showed a positive relationship between the ratio of independence of directors and the profitability of a company

while other studies found none. That said, our results are relatively unstable. First, the significant relationship observed in Table 8 only applies to one measure of profitability, the ROA. Furthermore, when size is measured using the total sales rather than the total assets, different results can be observed, especially for model 4 where the "RATIND" variable becomes significant with a 10% threshold while the "sales" variable is significant with a 5% threshold. That said, all models using the "sales" variable still have a very low explanatory power (adjusted R² of 0.03 or less).

That said, we can clearly conclude that none of the models tested supported our hypothesis stating that directors with less seniority had more meticulous control of the company, which would enable better profitability for shareholders.

Table 8: Results from the Financial Performance Models

	GROSMAR (2)	ROA (3)	ROE (4)
Constant			
T value	-0.277	-1.387	-1.118
AVESEN	-0.067	-0.066	-0.068
T Value	-0.857	-0.847	-0.877
ASSETS	0.024	-0.014	0.066
T Value	0.296	-0.173	0.839
PRINCHOL	-0.042	0.114	0.068
T Value	-0.540	1.475	0.877
RATIND	0.050	0.151	**
T Value	0.636	1.930	1.558
Adjusted R ²	0.014	0.011	-0.003

* significant at 10%; ** significant at 5%; *** significant at 1%

Conclusion

The governance requirements of the CSA clearly show the concerns of investors regarding agency conflicts, especially since the numerous financial scandals exposed throughout the past decade. Numerous studies examined the question of the independence of Board of Directors members and its impact on the management and performance of the company. That said, this study tried to deal with the subject from a different angle, by examining the seniority of independent members of 178 companies listed on the Toronto Stock Exchange in 2009 and evaluating the impact of this seniority on the limitation of the compensation of executives and the company's performance.

The results obtained for hypothesis H1 support the idea that directors who have been members of the same Board of Directors for a long time may be softer and allow senior executives a more generous compensation. That said, the analysis of the three models on financial performance did not allow for the validation of hypothesis H2, according to which the seniority of independent directors is likely to affect financial performance, as the AVESEN variable was not significant in

the three models studied. It is worth noting that all of these models have a very weak explanatory power.

Various proposals can be put forward to try to explain the lack of success of the models attempting to explain company performance. First, one can submit that the independence of Board of Directors members is an endogenous variable (vs. exogenous). Thus, instead of being a variable stemming from outside elements and being an independent variable, the structure of the Board of Directors may instead be created by internal factors and contribute to these factors (Dey, 2008; Hermalin & Weisbach, 2010). The independence of directors on the Board of Directors would thus be both an independent and dependent variable. Consequently, the isolation of certain variables, as done in this study, may have generated inference errors. Indeed, the various variables considered for the governance study are perhaps interrelated (Bowen, Rajgopal & Venkatachalam, 2005 in Dey, 2008).

Furthermore, the relationships studied may be non-monotonic or non-linear (Hermalin & Weisbach, 2010). So, these potentially parabolic relationships would not have been detected by the linear model used here. Finally, to study the effectiveness of a Board of Directors properly, it would have been necessary to study numerous variables that are not directly observable unfortunately, such as the attitude of the directors, their independence of mind and the impact of group think. The variables used here are thus only estimates of these variables and they may not substitute them so perfectly. The independence of directors is a complex phenomenon where numerous interrelations with the economic and commercial environment specific to each company can be observed.

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Impact de la Crise Financière de 2008 sur la Rémunération des Dirigeants Canadiens

L'objectif de cette étude est d'analyser l'impact de la crise financière de 2008 sur la rémunération des dirigeants des sociétés canadiennes. Pour ce faire, les données sur la rémunération incluses dans les *Circulaires de sollicitation de la direction* ont été analysées et comparées à plusieurs indicateurs de performance financière et ce, sur la période de quatre ans comprise entre 2007 et 2010. Les résultats obtenus tendent à démontrer que, en général, la rémunération des dirigeants canadiens a été affectée par la crise financière de 2008. Les résultats financiers de l'entreprise semblent donc avoir un impact sur la rémunération de leurs hauts dirigeants.

Introduction

La crise financière de 2008 a eu des répercussions sur l'ensemble de l'économie mondiale. En effet, de ses débuts à l'été 2007 jusqu'à son essoufflement en 2009, la chute de l'économie mondiale a affecté non seulement l'ensemble des entreprises, mais aussi les différents gouvernements qui ont dû agir pour secourir les principales banques en manque de liquidités. À l'origine causée par des prises d'importantes positions contaminées dans les «subprimes»¹⁴, la dernière crise financière aura ébranlé la totalité des fondements du système capitaliste, principalement basé sur la faible régulation des marchés et la recherche du bien-être individuel. Durant cette période de grands troubles économiques, la performance des entreprises mondiales a chuté, entraînée par la «spirale» de la récession. Les marchés financiers ont atteint des creux historiques et des milliers d'emplois ont été perdus. Au Canada seulement, le taux de chômage a augmenté de deux points entre 2007 et 2010, passant ainsi de 6% à 8% («Statistiques sur la», 2011). Durant cette même période, de grandes pressions ont été exercées par la population et les gouvernements sur les dirigeants d'entreprises pour que ces derniers revoient à la baisse leur rémunération. Plusieurs trouvaient inacceptable que la rémunération totale des dirigeants, qui est habituellement en grande partie basée sur des indicateurs de performance, soit aussi élevée compte tenu du piètre rendement de ces sociétés en période de crise. En effet, la rémunération pour les dirigeants des 100 plus grandes entreprises canadiennes cotées en bourse était, en 2008, 174 fois plus élevée que la rémunération du travailleur canadien moyen («100 patrons 174 fois», 2010). Les investisseurs ont aussi décrié de vive voix les incohérences entre les rémunérations variables relatives à la performance, le rendement des actions et les différents indicateurs

¹⁴ Prêts immobiliers accordés des ménages peu solvables dont le montant était gagé sur la valeur du bien immobilier

financiers. Initialement fondées sur la Théorie de l'agence et élaborées pour maximiser la profitabilité en motivant les gestionnaires et en faisant concorder leurs intérêts avec ceux des actionnaires, les différentes formes de rémunération variable ont, de l'avis de certains investisseurs, été inefficaces lors de la crise de 2008. En effet, par leur structure actuelle basée sur le renforcement positif, les différentes composantes (fixes et variables) de la rémunération totale des dirigeants canadiens étaient mal équilibrées, soit en récompensant de façon généreuse les bons coups et en ne pénalisant que timidement les mauvais.

L'objectif de cette recherche consiste à connaître l'impact de la crise financière de 2008 sur la rémunération des présidents directeurs généraux d'entreprises canadiennes cotées. Pour se faire, les pratiques salariales déclarées par les entreprises dans les circulaires de sollicitation de procuration de la direction ont été analysées afin d'y détecter les variations de rémunérations spécifiques (par composantes) et totale. Les différentes variations ont en outre été comparées à la performance financière des entreprises pour les années incluses entre 2007 et 2010.

Cette étude contribue aux travaux antérieurs en supportant la présence de relation entre la rémunération du dirigeant et la performance des entreprises en période de grande crise. En effet, bien que plusieurs chercheurs se soient penchés sur cette relation, peu l'ont fait en période de turbulence économique aussi importante que celle de 2008. Elle expose aussi le faible risque que supportent les dirigeants d'entreprises canadiennes cotées face à leurs décisions comparativement à celui supporté par les investisseurs.

La suite de cet article est divisée en quatre grandes sections. La section suivante présente les travaux antérieurs relatifs au sujet étudié. Ensuite suivra une description de la méthodologie de recherche, ainsi que celle de l'échantillon utilisée. Le document se terminera sur la présentation des résultats de l'étude et sur la conclusion présentant les différentes limites et avenues de recherche à envisager.

Recension des travaux antérieurs

Depuis plusieurs années, mais particulièrement depuis 2006, la rémunération des dirigeants d'entreprise fait la manchette au Canada. En effet, plusieurs dénoncent le fait que les salaires et autres avantages sont, toutes proportions gardées, de loin supérieurs aux bénéfices retirés par les actionnaires. C'est donc pour cette raison qu'en 2008, l'Autorité Canadienne en Valeur Mobilière a adopté de nouvelles règles de divulgation de la rémunération des cadres supérieurs ("Les nouvelles règles," 2009). Les entreprises cotées en bourse avaient alors l'obligation de divulguer la rémunération totale directe de leurs dirigeants. Il s'agissait d'un changement important, car toutes les composantes de la rémunération (salaire, bonis, options d'achats d'actions, unités d'actions différées, régime de retraite et autres avantages) devaient être communiquées. Cette adoption a facilité le travail des investisseurs désireux d'examiner le lien entre la rémunération de la direction et la performance de l'entreprise.

Quant à la performance financière de l'entreprise, il existe différentes analyses possibles. Ainsi, le rendement de l'action, en parfaite concordance avec le désir de l'investisseur, est un indicateur de performance qui permet d'évaluer le rendement du dirigeant en fonction de l'augmentation de richesse de l'actionnaire. Selon cette analyse, seul l'enrichissement de l'investisseur est utile aux fins de l'évaluation du dirigeant. Par contre, selon Deckop (1988), le rendement de l'action est imprécis dans le sens où la performance de l'action dépend du marché et que le marché dépend de

plusieurs facteurs qui sont souvent hors du contrôle du dirigeant. Ainsi, parce que le marché anticipe les rendements futurs, une performance moyenne du rendement de l'action pourrait cacher une très bonne performance de la part du dirigeant, et vice-versa. C'est donc dû à la faiblesse de la corrélation entre la performance du dirigeant et le rendement de l'action que Ellig, (1984) a avancé l'idée que la rémunération devait être analysée en fonction d'indicateurs de performance comptable. Bien que certains choix comptables pouvaient les influencer, ces derniers, basés sur des ratios et pourcentages, étaient selon lui beaucoup plus représentatifs des compétences du dirigeant. Cependant, malgré les résultats de ces études, Rosen (1992) a découvert qu'il était impossible de conclure à savoir laquelle des deux méthodes était la meilleure pour évaluer et motiver les dirigeants.

Des études ont aussi été réalisées dans le but d'examiner la relation entre la rémunération des dirigeants et la performance financière des entreprises. Par contre, les résultats de la majorité d'entre elles sont contradictoires. En effet, alors que certains chercheurs ont observé une relation positive entre «Rémunération» et «Performance», d'autres n'ont obtenu que des relations faibles ou inexistantes. Ainsi, Huntsman et al., (1970) a observé une relation positive entre les deux facteurs. Murphy (1985) a aussi conclu qu'il existait une relation positive à l'égard de la relation avant de, quelques années plus tard, réaliser une étude Murphy (1990) qui n'allait démontrer qu'une relation faible entre le rendement de l'action et la rémunération de la direction. De nombreuses autres études (Gomez-Mejia et al., 1987; Kostiuk 1989; Rosen 1990; Chuo et al. 2011; Jeppson et al 2009) sont aussi arrivées à des conclusions similaires à cette deuxième étude, soit à l'inexistence de la relation entre ces deux variables. Une des raisons expliquant ces discordances réside dans la façon dont chacun des chercheurs évalue le facteur «Performance». En effet, il s'agit d'un élément subjectif dont tous ne s'entendent pas sur ce qu'est une bonne ou mauvaise performance.

Un autre élément pouvant expliquer les divergences dans les conclusions des études sur la relation entre la rémunération des dirigeants et la performance financière réside dans le fait que la rémunération d'une direction d'entreprise n'est pas seulement influencée par la performance de cette dernière. En effet, plusieurs études antérieures suggèrent que des éléments telles la taille de l'entreprise et la constitution de son conseil d'administration ont des impacts importants sur la rémunération de la direction. En effet, selon Gomez-Mejia et al. (1987) et Simon (1957), trois éléments majeurs expliquent l'incidence de la taille de l'entreprise sur la rémunération de la direction, soit les opportunités plus nombreuses de bien performer dans une grande entreprise, la présence de plusieurs niveaux hiérarchiques devant tous être rémunérés de façon différente et l'impact moins grand de la charge sur le bénéfice de l'entreprise. Pour ce qui est de l'impact de la constitution du conseil d'administration sur la rémunération du dirigeant, l'actionnariat du conseil (Daily et al, 1998), la composition du conseil et l'influence du dirigeant d'entreprise (Magnan et al., 1999) sont tous des éléments susceptibles d'avoir une influence sur cette dernière. De ce fait, la variation des indicateurs de performance de l'entreprise n'est pas le seul facteur responsable de la rémunération.

Le recensement des travaux antérieurs tend à démontrer que plusieurs études ont été réalisées en lien avec la rémunération des dirigeants et la performance de l'entreprise, mais que les conclusions sont souvent contradictoires. De plus, il semble que peu d'études aient été réalisées en période de crise économique. De ce fait, l'analyse des effets de la dernière crise économique sur la rémunération des dirigeants d'entreprises canadiennes semble une avenue intéressante pour contribuer à l'avancement du sujet.

Méthodologie

Le but de cette étude est de tenter de démontrer l'impact de la crise financière de 2008 sur la rémunération des dirigeants d'entreprises canadiennes. Pour ce faire, la totalité des entreprises incluses dans le TSX100 ont été sélectionnées. Cet échantillon est composé d'entreprises opérant dans différents secteurs d'activités. Des 100 entreprises originalement sélectionnées, 29 ont changé de Président directeur général au cours des années 2006 à 2010. Ces dernières ont donc été exclues de l'étude. De plus, 27 entreprises incluses dans l'échantillon ont fusionné, ont été acquises ou ont fait faillite au cours de cette période de cinq ans. Ces dernières ont ainsi aussi été exclues en raison du manque d'information disponible ou du changement dans le contrôle de la société suite à l'évènement. L'échantillon final est donc composé de 44 entreprises.

Les données relatives aux composantes de la rémunération des président directeur général ont été extraites des circulaires de sollicitation de procuration de la direction alors que celles relatives à la performance financière des entreprises ont été recueillies à partir des états financiers de celles-ci et complétées avec la base de données Bloomberg. Les deux documents états disponibles sur la base de données www.SEDAR.com. La rémunération totale de chacun des dirigeants a été séparée en six catégories distinctes, soit le salaire de base¹⁵, le boni¹⁶, les options d'achats d'actions (OAA)¹⁷, les unités d'actions différées (UAD)¹⁸, le régime de retraite¹⁹ et les autres avantages²⁰ et ce, pour chacune des 5 années d'analyse.

Pour ce qui est des différents indicateurs de performance, six ont été choisis, soit le rendement de l'action, le rendement des capitaux propres, le retour sur investissement, le bénéfice net et le bénéfice avant amortissement, intérêts et impôts. Ces derniers ont été sélectionnés afin de refléter le plus possible les différents types d'indicateurs de performance utilisés par les comités de rémunération aux fins de l'établissement de la rémunération. Les différents indicateurs ont été opérationnalisés ainsi :

- Rendement de l'action : $(\text{Prix action}_{12} - \text{Prix action}_0 + \text{Dividende annuel}) / \text{Prix action}_0$
- Rendement des capitaux propres : Bénéfice net / Capitaux propres
- Retour sur investissement : Bénéfice net / Actif total moyen
- Bénéfice net : Bénéfice net
- BAII : BAII

De plus, afin d'éliminer l'effet de taille, faciliter les comparaisons et ramener les différentes variables sur des bases semblables, des variations en pourcentage ont été calculées pour toutes les données (rémunération et indicateurs de performance) et ce, pour chacune des années traitées. L'analyse en variation est aussi justifiée par l'objectif ultime de cette recherche qui est de connaître l'impact de la crise financière de 2008 sur la rémunération des dirigeants canadiens. Ainsi, l'observation du sens des variations (positive ou négative) de chacune des catégories de données permettra d'effectuer cette analyse. Quatre groupes ont ainsi été obtenus du calcul des variations entre les cinq années, soit 2006-07, 2007-08, 2008-09 et 2009-10. Chacun de ces

¹⁵ Rémunération versée régulièrement à un employé en vertu d'un contrat de travail.

¹⁶ Somme d'argent ou équivalent remis à un employé en plus de son salaire de base.

¹⁷ Contrat donnant à son acheteur le droit d'acheter une action à un prix d'exercice convenu, jusqu'à la date d'échéance.

¹⁸ Actions pouvant être achetées, à un prix fixé d'avance, lors de l'atteinte d'objectifs futurs.

¹⁹ Système de retraite dans lequel les salariés cotisent volontairement pour financer leur retraite.

²⁰ Tout autre avantage, monétaire ou non, découlant de l'emploi, mais non inclus dans les autres catégories.

groupes contient treize variations, soit celles de la rémunération totale, des six composantes constituant cette dernière et finalement, des six indicateurs de performance.

Résultats

Description de l'échantillon

Les 44 compagnies retenues dans l'échantillon sont réparties dans différents secteurs d'activités. Seize entreprises sont présentes dans le secteur des banques et autres services financiers, treize dans le secteur des ressources naturelles, six dans le domaine des télécommunications, cinq sont des entreprises manufacturières, trois offrent des services professionnels et, finalement, une seule œuvre dans le domaine ferroviaire. Pour chacune des sociétés de l'échantillon, la rémunération totale incluant toutes les autres rémunérations et avantages a été obtenue pour les années 2006 à 2010.

La rémunération moyenne des dirigeants, habituellement en croissance, a diminué en 2008 pour atteindre 5,188 millions comparativement à 5,612 millions en 2007. Cette diminution n'a par contre été que de courte durée alors que la rémunération totale moyenne retrouvait sa croissance en 2009 et 2010. Il est cependant important de noter qu'il y a de très grands écarts au niveau de cette rémunération comme le démontre les écarts-types, tous supérieurs à 3,2 millions. La dispersion importante des montants démontrent donc une très grande disparité entre les différentes rémunérations totales des dirigeants de l'échantillon.

Pour ce qui est des différents indicateurs de performance, l'année 2009 fut la moins performante avec des diminutions moyennes dans 4 des 6 observations. Pour ce qui est du rendement de l'action, c'est en 2008 que la baisse fut la plus marquée avec un rendement négatif de -30%. Il s'agissait d'une baisse de 42% comparativement à 2007 où le rendement était de 12%. Ces résultats concordent avec la situation de crise financière observée à la fin 2008.

Présentation des résultats

Les résultats des analyses tendent à démontrer que la rémunération totale des dirigeants a été affectée par la crise financière de 2008. En effet, après une croissance moyenne de 30,0% en 2007, cette dernière n'a été que de 6,0% en 2008 avant de revenir à des taux de croissance normaux de 14,5% et 49,0% en 2009 et 2010. Bref, la croissance de la rémunération des dirigeants de l'échantillon semble avoir été grandement affectée par la crise financière de l'année 2008.

Le graphique 1 met en relation les variations moyennes de la rémunération totale, ainsi que ses composantes pour les années 2007 à 2010. Ce dernier démontre bien la base de la variation de la rémunération totale en 2008 par rapport au trois autres années. On remarque aussi que les différentes composantes qui constituent la rémunération totale n'ont pas toutes varié de façon semblable. En effet, certains éléments ont rapidement été affectés par la crise alors que d'autres n'ont diminué qu'une année plus tard.

Tableau 1 :Échantillon initial et exclusion d'observations

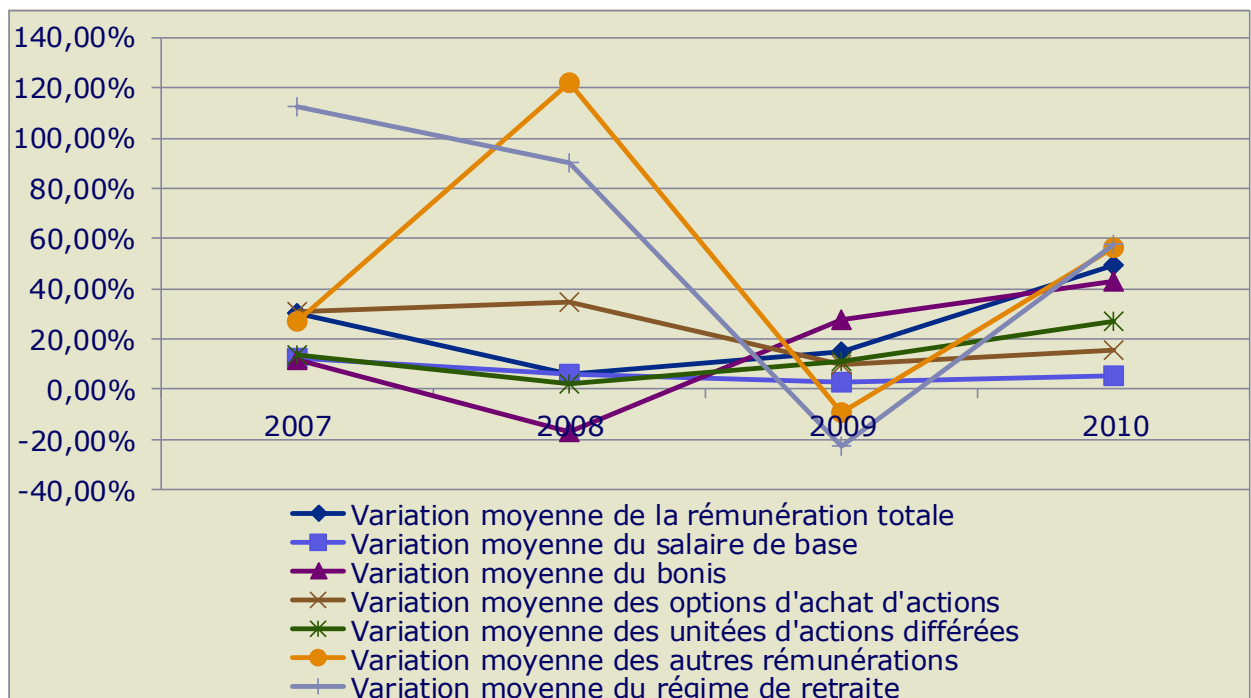
Observations	Moyenne	Écart-type	Médiane	Minimum	Maximum
Année 2006					
Rémunération totale (K\$)	4,695	3,380	3,952	618	13,685
Rendement de l'action	S/O	N/A	N/A	N/A	N/A
Rendement des CP	13.66	11.67	14.02	(27.51)	36.57
Retour sur investissement	8.46	8.71	9.21	(17.53)	32.83
Bénéfice net (M\$)	1,052.51	1,496.44	367.71	(175.48)	6,585.71
BAAII (M\$)	2,324.50	2,845.55	1,237.90	10.72	11,833.77
Année 2007					
Rémunération totale (K\$)	5,612	3,865	3,952	618	13,685
Rendement de l'action	0.12	0.38	0.12	(0.66)	1.58
Rendement des CP	7.18	38.92	14.41	(222.50)	43.09
Retour sur investissement	6.90	12.83	8.84	(49.92)	32.22
Bénéfice net (M\$)	1,035.77	1,367.36	428.38	(969.20)	5,492.00
BAAII (M\$)	2,437.88	2,773.98	1,462.39	(6.68)	12,304.00
Année 2008					
Rémunération totale (K\$)	5,188	3,267	4,668	591	14,107
Rendement de l'action	(0.30)	0.25	(0.33)	(0.82)	0.38
Rendement des CP	10.01	22.87	12.05	(52.76)	76.17
Retour sur investissement	6.09	14.74	6.58	(40.87)	55.23
Bénéfice net (M\$)	1,081.00	1,707.87	639.00	(2,060.00)	7,275.46
BAAII (M\$)	2,593.43	3,463.27	1,548.70	(3,594.00)	16,937.71
Année 2009					
Rémunération totale (K\$)	5,412	3,896	4,095	621	16,689
Rendement de l'action	0.55	1.19	0.30	(0.32)	6.33
Rendement des CP	9.68	8.67	9.12	(10.72)	38.16
Retour sur investissement	5.74	7.06	5.56	(8.96)	38.16
Bénéfice net (M\$)	840.63	1,017.77	491.11	(145.35)	3,858.00
BAAII (M\$)	2,077.76	2,243.20	1,386.08	(26.17)	9,652.00
Année 2010					
Rémunération totale (K\$)	6,501	3,610	6,652	622	13,750
Rendement de l'action	0.23	0.18	0.23	(0.12)	0.69
Rendement des CP	11.34	10.03	11.75	(30.61)	43.61
Retour sur investissement	6.24	7.24	7.35	(27.36)	27.14
Bénéfice net (M\$)	986.46	1,264.05	478.50	(236.63)	5,223.00
BAAII (M\$)	2,307.84	2,509.69	1,404.97	(24.82)	10,599.00

De ce fait, c'est la rémunération variable à court terme qui semble avoir été le plus rapidement affectée par la crise financière. Le graphique démontre effectivement que le boni a rapidement et fortement réagi à la crise financière, passant d'une croissance de 11.6% en 2007 à une diminution de -17.4% en 2008. Pour ce qui est des composantes de la rémunération tels les options d'achat

d'actions, le régime de retraite et les autres rémunérations, la diminution moyenne de la variation ne s'est produite qu'en 2009. Ainsi, entre 2008 et 2009, les options d'achat d'actions sont passées d'une variation positive de 34.3% à une croissance d'à peine 9.5%. Les régimes de retraite et les autres rémunérations sont, quant à eux, respectivement passés d'une hausse de 9.0% et 122.3% à des diminutions de -22.8% et -9.6%. Finalement, la variation moyenne du salaire de base a été très stable, ce qui est logique avec le caractère «fixe» de la composante. Il est par contre important de noter que, bien que les impacts ne se soient pas tous faits ressentir au même moment et avec la même intensité, les composantes de la rémunération totale ont toutes, à un certain moment, subi une diminution de variation au cours des 4 années.

Graphique 1

Variation moyenne de la rémunération totale et de ses composantes



De plus, afin de déterminer si les variations moyennes des différents éléments composant la rémunération étaient significativement différentes entre les années, une comparaison de ces dernières à l'aide d'un test de Tukey a été effectuée. Les moyennes qui ont les mêmes lettres ne sont pas très différentes entre les années. Le tableau 2 démontre que la variation moyenne du boni de 2008 est différente de la variation moyenne de 2007 et significativement différente de la variation moyenne de 2009 et 2010. Pour ce qui est des autres composantes, le test ne démontre aucune différence importante entre leurs variations moyennes. Il est donc possible de conclure que la variation moyenne du boni est la composante qui a le plus grandement été affectée par la crise financière de 2008.

Tableau 2 : Groupement de Tukey, variation moyenne des composantes de la rémunération totale

Année	Groupement de Tukey					
	Salaire de base	Bonis	OOA	UAD	Autres	Régime retraite
2007	A	AB	A	A	A	A
2008	A	B	A	A	A	A
2009	A	A	A	A	A	A
2010	A	A	A	A	A	A

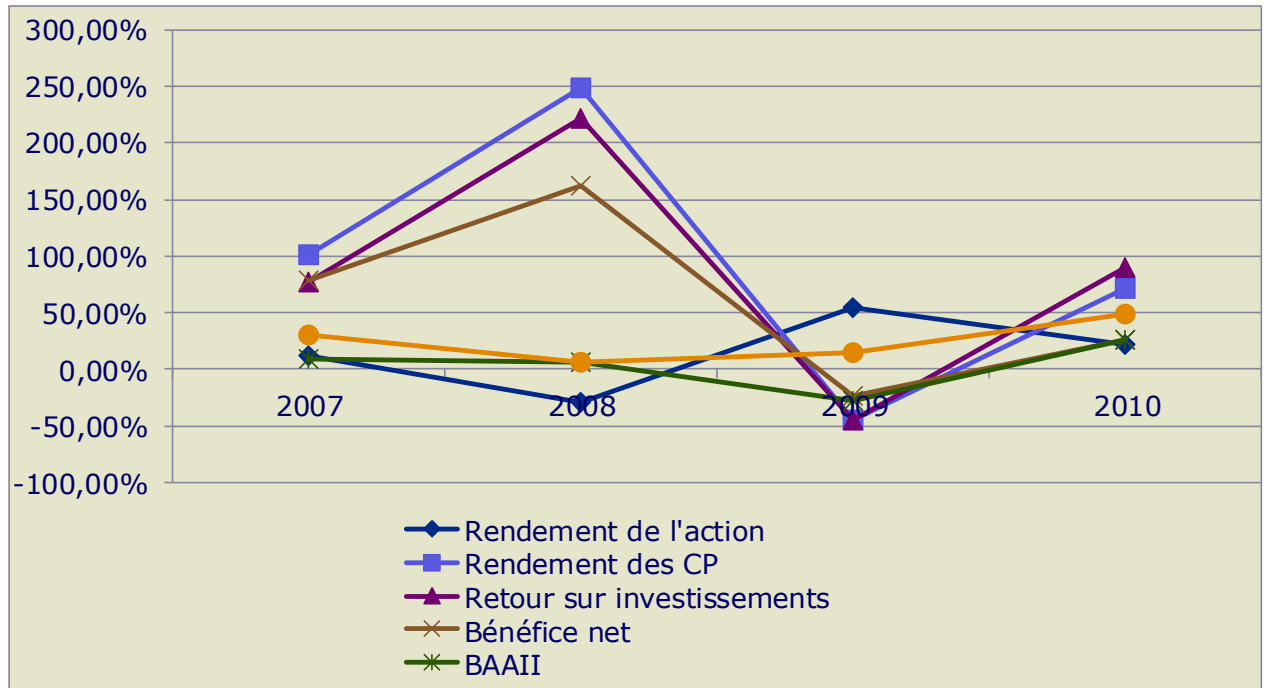
En résumé, cette analyse permet de démontrer que la variation moyenne de la rémunération totale des dirigeants d'entreprise a été affectée à la baisse par la crise financière de 2008, mais que la situation était revenue à la normale par la suite. Elle a aussi permis d'identifier la composante de la rémunération totale responsable de cette diminution, soit le boni.

Le graphique 2, quand à lui, présente les variations moyennes des différents indicateurs de performance analysés et les met en relation avec la variation moyenne de la rémunération totale. À l'image des différentes composantes de la rémunération, les indicateurs n'ont pas tous varié au même moment. Ainsi, en 2008, seul le rendement de l'action, affecté par la crise financière, avait diminué de façon simultanée avec la variation moyenne de la rémunération. En effet, la variation moyenne de cet indicateur chutait à -29.7% en 2008, alors que la variation des quatre autres indicateurs analysés croissait ou stagnait. En 2009 et 2010, la variation moyenne du rendement de l'action retournait dans le positif avec des croissances de 54.9% et 22.5%. Cette observation découle du fait qu'il s'agit du seul indicateur de performance influencé par le cours de l'action, et que ce cours est déterminé par le marché. Ayant anticipé les impacts de la crise financière sur les rendements financiers des entreprises, les investisseurs avaient, dès le début 2008, commencé à liquider leurs placements, ce qui avait fait chuter de façon importante les bourses mondiales.

Pour ce qui est des autres indicateurs, comme ils prennent principalement leurs assises sur des données comptables et que ces dernières sont davantage affectées par l'économie en général que par le rendement de l'action, l'effet de la crise ne se fait sentir qu'en 2009. C'est effectivement à ce moment que l'économie mondiale a atteint des creux historiques, affectant du même coup la santé financière des entreprises. Ainsi, la variation moyenne du rendement des capitaux propres, du retour sur investissement, du bénéfice net et du bénéfice avant amortissement, intérêt et impôt se chiffrait à -45.3%, -45.2%, -23.8% et -28.0% alors qu'ils avaient tous des variations positives en 2007 et 2008. Le graphique 2 démontre aussi clairement l'effet de «retard» de la variation de ces indicateurs comptables versus la variation du rendement de l'action et de la rémunération totale.

Graphique 2

Variation moyenne de la rémunération totale et des indicateurs de performance



Pour les variations moyennes des indicateurs de performance analysés, une comparaison de moyennes à l'aide du test de Tukey a également été effectuée. Le tableau 3 démontre que le rendement de l'action et le BAAII sont les deux indicateurs ayant des différences de variation moyenne significatives entre les années. Dans le cas du premier indicateur, la variation moyenne a été différente au cours des 4 années. Par contre, après une baisse en 2008 et une hausse en 2009, cette dernière tend, en 2010, à se stabiliser et à se rapprocher de ce qu'elle était en 2007. Pour ce qui est du BAAII, après deux années avec des variations moyennes semblables en 2007 et 2008, il y a eu une baisse significative de la variation en 2009 et une hausse de celle-ci en 2010. Pour ce qui est des trois autres indicateurs, le test ne démontre pas de grandes différences entre les variations moyennes au cours des années. Le rendement de l'action et le BAAII sont donc les éléments dont la crise financière a le plus d'impact sur leurs variations moyennes.

En définitive, cette analyse permet d'observer deux éléments importants. Tout d'abord, il semble que la variation de la rémunération soit affectée par certains indicateurs de performance. Il s'agit donc d'une observation allant dans le sens des conclusions de (Murphy, 1985; Huntsman, 1970) qui confirmaient une relation positive entre «Rémunération» et «Performance financière». Par contre, tous les indicateurs ne semblent pas d'importance égale. Par ses fluctuations presque simultanées avec la variation de la rémunération, le rendement de l'action paraît être celui qui a le plus d'impact sur la variation de la rémunération totale. En effet, les effets économiques négatifs rattachés aux indicateurs comptables, qui ne se sont fait ressentir qu'en 2009, n'ont pas eu de réels impacts sur la variation de la rémunération. Ainsi, le décalage temporel entre les différents indicateurs permet de conclure que la variation moyenne de la rémunération des dirigeants est

davantage rattachée au rendement de l'action qu'au rendement comptable et économique de l'entreprise. Ainsi, bien que (Deckop, 1988) ait trouvé cet indicateur financier imprécis, les entreprises semblent y accorder de l'importance aux fins de la fixation de la rémunération.

Tableau 3 : Groupement de Tukey, variation moyenne indicateurs de performance

Année	Groupement de Tukey				
	Rendement de l'action	Rendement des CP	Retour sur investissement	BN	BAAII
2007	B	A	A	A	AB
2008	C	A	A	A	AB
2009	A	A	A	A	B
2010	AB	A	A	A	A

L'analyse permet aussi de confirmer l'inégalité des risques entre les gestionnaires et les investisseurs. Le graphique 2, ainsi que les analyses de Tukey, démontrent clairement la grande volatilité du rendement de l'action versus la rémunération totale des dirigeants. L'actionnaire supporte visiblement plus de risques alors que les variations de rendement de son investissement peuvent, dépendant de la performance de l'entreprise, fluctuer de façon très importante entre les années. Le dirigeant, par sa structure de rémunération mixte, s'assure une rémunération minimale et ce, peu importe les résultats financiers de la société qu'il dirige. L'impact négatif de la crise sur sa rémunération s'en retrouve donc dilué.

Analyse supplémentaire

Une analyse supplémentaire a aussi été effectuée afin d'étudier les différentes corrélations entre les variations des composantes de la rémunération totale et les variations des différents indicateurs de performance.

Ainsi, dans le cas du salaire de base, il est possible de constater que cette composante est davantage associée aux indicateurs de performance comptable qu'au rendement de l'action. En effet, sauf en 2009, où l'économie avait atteint un creux historique, le retour sur investissement est toujours corrélé à la composante. Pour ce qui est du boni, l'analyse démontre que le rendement de l'action était, en 2007 et 2008, l'indicateur avec lequel la composante était le plus corrélée avec des valeurs de Pearson de 0.427 et 0.408. Par contre, cette relation n'était plus significative en 2009 et 2010, alors que la variation moyenne des bonis était en forte croissance comparativement aux années précédentes.

Pour ce qui est de la rémunération à titre d'options d'achat d'actions et d'unités d'actions différées, il n'y a pas eu, au cours des quatre années, d'association entre la variation moyenne de ces composantes et celle des différents indicateurs de performance. Leur octroi semble donc peu associé à la performance de l'entreprise.

Tableau 4 : Analyse de corrélation

Composante de la	Corrélation	Rend. Actions	Rend. CP	Retour Investissement	BN	BAAII
Variation (année 2006-2007)						
Salaire	Pearson	.153	-.179	-.262*	-.149	.172
Boni	Pearson	.427**	.100	.103	.458**	.121
OAA	Pearson	.181	.005	.003	.046	.084
UAD	Pearson	.380**	-.062	-.070	-.034	.077
Autres	Pearson	-.140	-.193	-.215	-.215	-.111
Régime	Pearson	.428**	-.053	-.062	-.052	.076
Variation (année 2007-2008)						
Salaire	Pearson	.184	.274**	.271**	.262**	.102
Boni	Pearson	.408**	.570***	.566***	.680***	.349**
OAA	Pearson	.173	-.083	-.084	-.059	.004
UAD	Pearson	.087	-.022	-.024	-.004	-.067
Autres	Pearson	.237	.035	.036	.056	.035
Régime	Pearson	.001	-.034	-.035	-.041	-.025
Variation (année 2008-2009)						
Salaire	Pearson	-.089	.030	.032	-.123	-.014
Boni	Pearson	.200	.109	.115	.105	.108
OAA	Pearson	.363**	-.103	-.106	-.220	.031
UAD	Pearson	-.011	-.015	-.010	-.058	.113
Autres	Pearson	-.207	.024	-.018	-.183	.026
Régime	Pearson	.193	-.160	-.163	-.184	.133
Variation (année 2009-2010)						
Salaire	Pearson	.011	-.688***	-.667***	-.052	.225
Boni	Pearson	.100	-.184	-.128	.161	.043
OAA	Pearson	.065	-.134	-.158	-.315**	.164
UAD	Pearson	.220	-.051	-.021	.053	-.108
Autres	Pearson	.088	.905***	.886***	.034	-.264*
Régime	Pearson	.087	-.116	-.106	-.138	-.020

*** $p \leq 0.001$; ** $p \leq 0.05$; * $p \leq 0.1$

L'analyse démontre aussi une absence quasi-totale de relation entre les indicateurs de performance et les composantes «Autres» et «Retraite» et ce, pour chacune des années. En effet, sauf en 2010 où il y a une corrélation positive forte de la variation des autres rémunérations avec la variation du rendement des capitaux propres et du retour sur investissement, la relation n'est pas significative pour les autres années analysées. Cette observation supporte le fait que les variations de ces composantes ne sont habituellement pas déterminées par des indicateurs de performance, mais par des politiques internes de l'entreprise.

Ainsi, le tableau de corrélation démontre que peu des variations moyennes des composantes de la rémunération totale sont corrélées de façon significative avec les indicateurs de performance retenus. En effet, sauf le boni, les autres types de rémunération ne sont pas associés de façon significative au rendement de l'entreprise. Cette observation est logique avec les résultats du test de Tukey (Tableau 4) qui démontrait que seule la moyenne de la composante «boni» était significativement différente entre les années.

Conclusion

Cette étude a permis de mettre en perspective l'impact de la crise financière de 2008 sur la rémunération des dirigeants d'entreprises canadiennes. Elle a analysé un échantillon de 44 entreprises incluses dans le TSX100 en observant l'évolution, entre 2006 et 2010, de la variation de la rémunération de leur dirigeant. Les analyses ont de plus été étendues à six indicateurs de performance financière. Les résultats obtenus tendent à démontrer que la dernière crise financière, qui a affecté les résultats financiers de l'ensemble des entreprises étudiées, semble avoir eu un impact négatif sur la variation de certaines composantes de la rémunération des dirigeants au Canada.

Les résultats de l'étude ont notamment permis d'observer qu'au pire de la crise, soit à la fin de 2008 et au début 2009, la variation de la rémunération des dirigeants d'entreprise avait chuté de façon importante. Cette diminution, principalement attribuable à la diminution du boni, était aussi synchronisée avec la baisse du rendement de l'action, indicateur de performance calqué sur les intérêts des actionnaires. Il a aussi été démontré que les indicateurs de performance comptables ne fluctuaient pas aussi promptement que le précédent indicateur, les effets économiques de la crise ne se faisant sentir qu'à compter de 2009.

L'étude a également mis en évidence la disparité entre le risque supporté par l'investisseur et le risque supporté par le dirigeant. En effet, la volatilité du rendement de l'action est de loin supérieure à celle de la rémunération totale du dirigeant. Ainsi, par leurs structures de rémunération fixes et variables, les performances des décideurs se répercutent de façon beaucoup moins importante sur leur portefeuille que sur celui des investisseurs. Il s'agit donc d'une mixité qui incite à la prise de risque par les dirigeants, ce qui devrait être optimal pour l'actionnaire.

Cette étude a également contribué aux travaux antérieurs dans le sens où elle a permis de faire le lien entre la performance d'une entreprise et la rémunération totale de son dirigeant. Ainsi, les résultats de l'étude tendent vers ceux de (Murphy, 1985; Huntsman et al, 1970) qui concluaient qu'il y a présence d'un lien positif entre les deux facteurs. Cette recherche a aussi permis de faire cette analyse en période de crise économique, ce qui avait rarement été effectué par le passé.

Il est cependant certain que les conclusions de cette étude sont soumises à quelques limitations. Notons, notamment, la performance d'une entreprise qui est un concept comprenant plusieurs facettes dont certaines sont difficilement opérationnalisables à partir d'indicateurs financiers ou comptables. En effet, plusieurs autres éléments tels les parts de marché, l'impact environnemental, la santé et la sécurité des employés, l'innovation, etc. sont des notions dont il faudrait tenir compte pour évaluer le rendement d'une entreprise. L'inclusion de ces derniers dans l'évaluation des entreprises donnerait des résultats plus justes relativement à la relation performance-rémunération.

Finalement, d'autres avenues de recherche portant sur le même sujet pourraient être effectuées. En outre, des recherches pourraient être faites afin de déterminer quel fut l'impact des pressions politiques et de la grogne populaire sur la rémunération des dirigeants. En effet, plusieurs entreprises ont dû revoir à la baisse les montants versés et certains dirigeants ont dû renoncer à une partie de leur bonification afin de préserver leur image publique.

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Compatibility Between OHADA Accounting System and IASB Conceptual Framework (IFRS): The Real Difficulties and False Problems

The uniform act regarding the organization and the harmonization of the accounting systems of firms, adopted in the framework of the OHADA treaty, where we annexed the accounting system OHADA (SYSCOHADA), has had the advantage of modernizing the accounting informational system for the companies part of the African member states, and to adapt it to follow the evolution of the economic, financial and legal environments. The transition from cultural accounting plan OCAM to an accounting system endowed with a conceptual framework inspired by international accounting standards is a considerable achievement. The former accounting system used in the member states no longer satisfied the information requirements, increasingly diversified, by the end users of financial statements. The procedure retained in this article essentially consists in analyzing the points of convergence and divergence between the accounting reference frameworks of OHADA and IAS/IFRS, while at the same time studying the problematic of the normalization of international accounting in the context of the sub-Saharan francophone countries of Africa.

Introduction

With the globalization of large financial institutions, companies can now raise funds from various markets (Walton, 2008). The stakes of harmonizing international accounting is, first and foremost, financial (Briston, 1978). The potential investor must have access to the financial data of the issuing company of foreign nationality. Ding et al. (2005) state that the progressive adoption of international accounting standards by companies in continental Europe and in Asia was driven in part to compete with their counterparts in the U.K. and the United-States in the world marketplace. However, Walton (2008) emphasizes the important role played by the World Bank to promote international accounting standards in south-Asian countries and even more so in newly developing countries (PVD). It is under the influence of the World Bank and the Central Bank of the Western African states (CBWAS) that the Francophone sub-Saharan countries in Africa adopted on October 17, 1993, at Port-Louis (Mauricio Island) a treaty implementing a

harmonized²¹ judicial framework. The treaty entered in force in the 16 signatory countries in January 2001 (Perochon, 2000; Gouadain D., 2000).

After gaining independence in the 1960s, most of the former French colonies continued to use the French accounting system of 1957. Previously known as the “CFA franc zone”, it is now comprised of two groups of countries or two international organizations that have a determinant influence. One group is the West African Economic and Monetary Union (UEMOA), comprised of eight countries (Benin, Burkina Faso, Ivory Coast, Guinea-Bissau, Mali, Nigeria, Senegal and Togo), grouped around the emitting financial institution, the Central Bank of West African States (BCEAO), where the former CFA franc is now called the African financial community franc, coded as XOF. The other group is the Economic and Monetary Union of Central Africa (CEMAC), comprised of six African countries (Cameroun, Central African Republic, Republic of Congo, Gabon, Equatorial Guinea, and Chad), grouped around the emitting financial institution, the Bank of Central African States (BEAC), where the former CFA franc is now called the Central African Financial Cooperation franc, coded as XAF. Seeking a compatible accounting reference framework to match their new development policy, As well, seeking a modern accounting system, these organizations naturally turned towards France to equip themselves with an accounting reference framework more compatible with their policies for development. Such closer ties therefore led to an overlapping in the processes for normalized accounting, to the extent that we cannot examine them independently.

Furthermore, this led to the birth of the concept of “Cultural Exception for Francophone Accounting” (Blin, 1995), or the “Francophone accounting system” (Perochon, 2000). The implementation of the OCAM accounting system marks as well the beginning of the process for normalization of accounting practices in sub-Saharan Francophone countries. Thirty years later, the West African Accounting System (SYSCOA) and the OHADA accounting system will finally assert its perfection and legitimacy. The concept of harmonization has occupied considerable space in financial accounting publications (Enthoven, 1973; Nobes, 1983; Nobes & Parker, 2000; Prather-Kinsey, 2006; Zeghal & Mhedhbi, 2006). Thus, in the context where the initial orientation of certain overall accounting views could be turned towards social or fiscal considerations and others towards purely financial matters, harmonization was imposed as a necessary de facto pre-condition necessary for comprehension, and for comparing the accounting data on an international scale (Tay & Parker, 1990; Djossa Tchokoté, 2004, 2009).

On the international level, the coexistence of numerous accounting reference frameworks seeking a pre-eminent role in the financial markets, and therefore needing their accounting to be internationally legible by all investors, ultimately created the necessity of harmonizing international standards. This harmonization resulted in essential changes regarding the accounting standardization process and the very standards themselves. A few years after the accounting OHADA reference framework came into effect, along with the adoption in Europe of the IAS/IFRS standards, it now seems appropriate to question the convergent and the divergent aspects of SYSCOHADA compared to IAS/IFRS. In other words, does the standardized

²¹ The accounting standard OHADA was elaborated between 1995 and 2000 and the SYSCOA system between 1995 and 1996. However, the two systems, developed under the responsibility of Claude Pérochon, mandated by Kebe Mbaye on the part of OHADA, and mandated by Charles Konan Banny on the part of SYSCOA, eventually were merged together and hence form only one single accounting system, which we call voluntarily OHADA.

accounting model of member countries of OHADA show any similarities to the international financial reporting standards for accounting? Will there be an eventual convergence of the OHADA and IFRS reference frameworks?

The article first presents the problematic of the standardization of international accounting in the context of sub-Saharan Africa. The second part concentrates on the analyses of the convergent and divergent points between the reference frameworks OHADA and IAS/IFRS.

Problematic of Standardization of International Accounting in the Context of Sub-Saharan Africa

The standardization of international accounting is a step in normal business evolution; however, this introduces enormous difficulties in its harmonization with accounting systems in developing countries (PVD). Nevertheless, recent financial scandals in both Europe and the United-States have reinforced this need to harmonize and improve the flow of financial information to investors and economic institutions. The Enron scandal, then one of the largest American companies by market capitalization, is a perfect illustration. Created in 1985 out of a fusion of Houston Natural Gas and Internorth of Omaha, Enron was one of the largest companies in the world. It was according to all accounts falsified, a group with a revenue of \$139 billion. Senior management (K. Lay, J. Skilling) created, internally, more than 3,000 offshore companies whose head office was located in the Cayman Islands, Bermuda, or the Bahamas, and pretended that these were their suppliers, thus they could control energy prices. All this was accomplished with the assistance of the cabinets of Arthur Andersen, Citigroup, and JP Morgan. On October 31, 2001, the Securities and Exchange Commission began an inquiry, but it was only on December 2 of that year that actual proof of falsifying information was established. The multinational declared bankruptcy and its share price plunged from \$90 to \$1.²² The bankruptcy brought down in its wake the cabinet of Arthur Andersen and other accomplices. Since then, public regulators decided to reinforce the quality of financial communication in order to re-establish the confidence of the public, holders of savings accounts, and investors. Such a movement began with the adoption of several statements whose common objective was the improvement of financial security in Europe, the Sarbanes-Oxley Act in the United-States, and the implementation in 2005 of more exhaustive international accounting standards such as the IFRS (International Financial Reporting Standard), previously called in 2001 the IAS (International Accounting Standards). The international accounting standards lean much more in favour of satisfying internal needs, with a large majority of financial markets leaning in that direction.

Moreover, the European Commission announced in June 2000 it was halting an accounting standardization purely European and adhering to the accounting reference framework IASB. This option should allow the creation of a European financial market with liquidity and performance orientated (Deloitte and Touche, 2002). The African reaction faced with this new context in Europe seemed evident and predictable. All these changes present a significant problem for developing countries in general that do not yet have a sizable financial market and where the accounting is still in its embryonic stage. It is obvious that today there is a problematic of the usefulness of international standards and developing countries in general, and Africa in particular. The problem with harmonizing the African accounting standards (in particular, the OHADA

²² The embezzlement attributed to the directors of Enron will result in 6 counts against Kenneth Lay, founder and former consultant of McKinsey, and CEO (died before the sentence) and 28 counts against Jeffrey Skilling, CEO (sentenced to 24 years 4 months in prison).

standards) is evident. Proof of this problematic, as stated by Feudjo (2010), is that no country can escape the logic of the interconnection of world markets. Besides, large African companies with different strategic options for growth will or will have to express their needs to investors on large worldwide markets. They will have to present to potential investors the accounting documents and the integrated financial statements. Adapting to international standards and the considering of other dimensions of accounting in developing countries (management and fiscal data, etc.) are all themes on which African experts must focus their attention in order to define the exact accounting that will serve them best in the future. According to the accounting guide of the “Système Comptable Ouest African SYSCOA (UEMOA, 1997) or the “West African Accounting System SYSCOA”, the Anglo-Saxon standards favour data of a market nature in which financial statements are prepared as a transparent instrument of market capitalism.

Origin of International Accounting Standard IAS/IFRS

The development of world capital markets during the last thirty years created the increasing need for a common accounting reference framework. The recent financial scandals in Europe and the United-States reinforced this need to harmonize and improve the flow of financial data towards investors worldwide. Included was the aim to reinforce the transparency of financial statements of companies wishing to capitalize on public share offerings. It is in this particularly regulated environment where the new accounting reference framework IAS/IFRS was created. Established by the IASC, renamed IASB, the resulting standards are designed to formulate a unique framework, more coherent and homogenous, thereby restoring the confidence of market investors and other partners in the company. In its first version, the International Accounting Standards Committee (IASC) was founded on June 29, 1973, at the initiative of Sir Henry Benson, an associate of the London office of Coopers and Lybrandt, following an agreement between the institutions of the accounting standardization of the 10 founding member countries: Germany, Australia, Canada, France, United-States, Ireland, Japan, Mexico, Netherlands, and the United Kingdom.

IASB Conceptual Framework

The conceptual framework is a system of coherent objectives and fundamental principals linked between them that aim to provide a useful representation of a company. In other words, the conceptual framework of IASB is not, in itself, an international accounting standard; it does not have a standardized procedure for evaluating or providing information. Nothing in the conceptual framework replaces a specific international accounting standard. In an effort to promote a body of standards of high quality and to apply them rigorously, the conceptual framework plays an important role. This framework was initially developed in 1989 and its 2010 version retains a part of the initial work. Its permanent aim is to provide directives and indications facilitating the preparation of financial statements (summaries, results of accounts, financial tables, notes, appendices, and other explicative documents).

It is intended for capital investors, lenders, and for other creditors, actual and potential. It no longer includes “others” or shareholders despite the statement that the IASB will try to answer the needs of the maximum number of users.

- The conceptual framework retains the hypothesis of the continuity of exploitation: According to this hypothesis, the company should conduct its activities in a predictable future. The usefulness of this hypothesis consists of continuing to present elements of a summary of higher values to those used in case of business liquidation. If the continuance of the company

activity was not assured, we would have to evaluate the items in the summary at a liquidation value, a much lower amount.

- The technical hypothesis of accounting engagement, a characteristic of commercial companies recording their operations according to loan/debts and not by cash/expenses was not retained in the conceptual framework, but it is mentioned in the IAS1 standard.

At the European level, the conceptual framework was not adopted by the European Commission and therefore was not published as a regulation, contrary to both IAS and IFRS. However, it was published in the form of an appendix in the “observations of the European Commission concerning certain articles of regulation CE n°1606/2002, the latter having introduced the international accounting reference framework in the EU legislative community”.

Objectives of the new IASB Conceptual Framework

The initial objectives of IASC in 1973 were reviewed in 1989 and again in 2010 (Degos & Ouvrard, 2011). Their actual version, formalized in the IASB constitution in 2000, made official in 2001, revised in 2002, and modified in 2010, has the following objectives:

- Assist the IASB council in preparing the future IFRS and in revising texts already in force;
- Assist the IASB in the promotion of harmonizing the rules, standards, and accounting procedures;
- Assist national standardization organisms in preparing their own standards;
- Assist those preparing financial statements in applying the IFRS and to work on subjects that must be regulated by IFRS in the future;
- Assist the auditors in forming an opinion on the conformity of financial statements for IFRS;
- Assist users of financial statements to interpret the information contained in the financial statements prepared in conformity with IFRS;
- Provide all persons interested in the work of the IASB with information on its approach in preparing standards for IFRS.

In the effort to promote a body of standards of high quality and their rigorous application, the conceptual framework plays an essential role. Its permanent role is to provide directives and information facilitating the preparation of financial statements, but, eventually, it can also inspire others working on international accounting standardization.

The Place for SYSCOHADA²³ in International Accounting Standardization

In this sub-section, after having presented the historical and judicial frameworks of SYSCOHADA, we will endeavour afterwards to answer the question; namely, whether the reference framework OHADA can be convergent towards the International Financial Reporting System for accounting standards.

Historical Notes and Conceptual Framework for the Reference OHADA Framework

The idea to harmonize the rights of the African people appeared in the 1960s, after the first countries gained independence (Djossa Tchokoté, 2004, 2009). This idea was realized, but with considerable difficulty since each African state had its own legislation. Already, the French accounting system of 1957 was used in France and in certain African countries, until the arrival

²³ SYSCOHADA: Accounting System for the Standardization of African business rights

of the 1982 plan. Meanwhile, it was replaced by the “OCAM²⁴” (1970), Ivory and Senegalese plans (1976). However, until 1997, it was used in certain countries in the sub-region. The day after the devaluation of the franc CFA in 1994, the West African Economic and Monetary Union was created (UEMOA)²⁵. Therefore, those responsible for this union decided to avail themselves of a common accounting reference framework to replace, as of January 1st 1998, the accounting systems applied until then in the pertinent countries. The common accounting system proposed is called the West African Accounting System (SYSCOA). Meanwhile, the different Uniform Acts of OHADA were applied immediately after adoption. The Uniform Act of OHADA²⁶ pertaining to the organization and harmonization of accounting for corporate entities dated March 24, 2000 had the same objective as SYSCOA but covering a larger span.

According to Nguema and Klustsch (2010), the accounting regulations in the OHADA countries are based on the Uniform Act relating to the organization and harmonization of accounting practices by private sector firms. Excluded from the Act are banks, financial establishments, insurance companies, as well as entities subject to public accounting regulations. It should also be remembered that the Uniform Act for which SYSCOHADA is annexed establishes the accounting standards, the type of accounts, the rules for maintaining accounts, and the presentation of financial statements and financial data. It includes personal accounts for natural and legal persons, along with consolidated and combined accounts. Published in the official OHADA journal as n° 10, it came into effect on January 1, 2001, for enterprise personal accounts and on January 1, 2002, for consolidated and combined accounts.

The OHADA Conceptual Framework

The idea of an accounting conceptual framework was particularly intriguing to researchers Gouadain and Perochon (2000), where the notion can be considered indistinguishable with the Anglo-Saxon way of thinking, where accounting standardization must be based much more on substance than on the form, and on the general principles that must guide the accountant in his work, rather than on the details of the operation that he must accomplish, contrary to the French-German approach, based on nomenclatures and models. The conceptual framework elaborated by FASB specifies the objectives and the aims of the accounting by explaining the fundamental concepts designed to clarify, for the accountant, the choices by which to record, measure, and the manner by which to summarize them, with the end goal of bringing them to the attention of the interested parties. This approach also sets an example for the followers of the traditional school of thought on the continent: without renouncing the notion of the accounting plan, they took the initiative to define, in their preamble with similar wording, a conceptual framework that is meaningful. The accounting system OHADA thus adopted an approach similar to the one retained in France as seen by the reference texts (accounting plan of 1982 and accounting law of April 30, 1983), which is to provide an image that is faithful to both the situation and the history of the company. However, a certain initiative appeared when SYSCOHADA published its material for three principal reasons:

- it represented a genuine break with the OCAM accounting regulations in force;

²⁴ OCAM : Organisation Commune Africaine et Malgache (1966) puis Organisation Commune Africaine et Mauricienne (1968).

²⁵ UEMOA: Comprising Benin, le Burkina-Faso, Ivory Coast, Mali, Nigeria, Senegal and Togo.

²⁶ To date, 16 countries have signed and ratified the treaty: Benin, Burkina-Faso, Central Africa, Ivory Coast, Mali, Nigeria, Senegal, Togo, Cameroon, Chad, Gabon, Congo, Comoro, Guinea, Guinea Bissau, Guinea Equatorial

- it harmonized the accounting rights in 16 African countries;
- it formulated original positions on certain accounting subjects.

A few very important accounting advances were part of the OHADA Act, namely:

- Combining and consolidating accounts;
- counting (including) leasing operations;
- treating non-expired discounted effects;
- counting out-of-office personnel;
- an economic approach detrimental to the traditional fiscal vision in the region;
- introducing the concept of pre-eminence of economic reality over judicial form: the principal of “*substance over form*”;
- the beginning of convergence towards the IFRS standards (cost of loans) that was not applied on the international scale, at that time.

As shown in Table 1, the actual characteristics of the accounting reference framework OHADA results in an approach that tends to optimize the intrinsic qualities of the accounting standardization of both French and Anglo-Saxon models. However, as stated by Colasse in 2009, “SYSCOA-OHADA, as it has been designed, is presented as an intermediate model between the two large accounting models that we could invoke across the world at the end of the last century; namely, the Anglo-Saxon actuarial and the continental European partnership model, including Euro-Africa and by its extension in Africa, notably via various accounting plans such as OCAM.”

Table 1: Procedures and Characteristics for Accounting Standardization of Sub-Saharan Francophone African Countries

Items	Description	Affiliation
Principal body for standardization	OHADA, a regional organization, depends on treaty signatories of OHADA	Heritage: French
Objectives of accounting standards	Traditional design of accounting data exchange that retains a plurality of end users	Heritage: French
Reference to conceptual framework	Explicit conceptual framework	Heritage: Anglo-Saxon
Sources for standardization	Plurality of sources	Heritage: French
Role of the state	OHADA is an organization under the tutelage of the ministries of Justice and Finance	Heritage: French
Role of the accounting profession	Development of accounting standards ensured by members of FIDEF ²⁷ and African accounting experts	Heritage: Anglo-Saxon
Role of end users	Represented in the development procedure for standards	Heritage: French
Characteristics of standards	Accounting framework, including: rules for accounting and evaluation, rules for bookkeeping, structure and operation of accounts, and summary of documents	Heritage: French

²⁷ FIDEF: International Federation of French Speaking Accountants

The OHADA accounting reference framework: a possible convergence with IFRS?

Since the accounting system for the standardization of judicial affairs in Africa (SYCOHADA) came into force for company personal accounts on January 1, 2001, and for consolidated and combined accounts on January 1, 2002, the institutions of OHADA have had a governance problem, as stated by Nguema and Klustsch (2010). Considering the difficulties that authorities face with ensuring OHADA accounting standardization practices, notably with problems linked to governance, it is fair to ask if it is now time for the OHADA accounting standardization to converge towards the International financial reporting system (IFRS). Considering the experience in continental Europe, there are certainly doubts on a successful endeavour. We should nonetheless note that since the implementation of SYSCOHADA, there has never existed what one would call a “regulatory body” responsible for overseeing the proper functioning and success of the OHADA reference framework, following the examples of the “Conseil national de la comptabilité en France”, that became the “Autorité de Normalisation Comptable” (CNC)/ Accounting Standardization Council, or the “Accounting Standards Board” (ASB/CNC) in Canada.

It was not until December 2008 that a law creating an accounting standardization commission (CNC-Ohada), issued from the permanent secretariat, was adopted by the Council of Ministers of OHADA. Thus article 3 (cited by Nguema & Klustsch, 2010) of the regulation states that: *“the CNC-Ohada is a proposal and consultative organization for accounting standardization having as an objective to assist OHADA in the interpretation, harmonization, and updating of the accounting standards in the member states. The CNC-Ohada ensures the proper coordination and summary of theoretical and methodological research relative to the standardization and the application of accounting rules. The CNC-Ohada, on request by the permanent secretariat, develops initiatives regarding the reform of accounting rules”*. Considering the experience in continental Europe regarding the adoption of international accounting standards and the difficulties that they encountered, it is doubtful that such an endeavour would ever materialize in the two Francophone sub-Saharan African economic zones; namely, UEMOA²⁸ and CEMAC²⁹.

However, because of the fact that the OHADA Accounting Act offers good comparisons of financial statements from one country to another and from one sector to another, it seems to us as essential to attempt such a comparison between the two economic zones UEMOA-CEMAC. Since it is understood that the IFRS must, before all else, concentrate itself on listed companies, such a study deserves to be attempted since the emergence of capital markets, albeit embryonic since the year 2000, continues to steadily develop; the most notably being the “Bourse Régionale des Valeurs Mobilières” (BRVM) on the Ivory Coast, whose head office is in Abidjan, the “Bourse des Valeurs Mobilières de l’Afrique Centrale” (BVMAC), whose head office is in Gabon (Libreville), and finally the “Douala Stock Exchange” in Cameroun. The eight accounting principles retained by the OHADA accounting system are all universally accepted and are part of the international accounting standards.

In order to reinforce our line of thinking, we turn to Colasse (2009) who cites three examples that show the necessity of an eventual convergence of the OHADA accounting reference framework towards the IFRS standards. The examples are as follows:

²⁸ UEMOA: West African Economic and Monetary Union

²⁹ CEMAC: Central African Economic and Monetary Community

- (1) Convergence of the criteria for evaluation, especially their domain of applicability: According to this author, the SYSCOHADA solution appears well adapted to SMB cases since the true value only applies to fixed assets (land, buildings, etc.) and only in the scope of a certified re-evaluation by the pertinent local authority. Consider that *“the cases for applying the true value as anticipated by the IFRS are more difficult to implement by SMB such as investment securities, debt and particular currency debt, and biological assets”*.
- (2) Presentation of profit and loss accounts as well as balances: The characteristics of management, as predicted by SYCOHADA, can appear quite cumbersome but are actually a significant asset or gain when compared to the differences between the resulting profit and loss accounts of IFRS/SMB, especially in order to respond to information requests from multiple users, particularly from directors of SMB who are often deprived of accounting management. This second example can serve as a source of inspiration for international standardization; namely, IASB.
- (3) Finally, the Summary of Financial Statements for Resources and Employment (“Tleau Financier des Ressources et des Emplois”) (TAFIRE) is a complex document. It is therefore necessary to examine both documents in order to compare the advantages and disadvantages, respectively, based as always on the need for information by multiple users.

Despite all that has been mentioned, a certain number of elements could act as brakes to an eventual convergence of the OHADA accounting reference framework towards the IFRS standards. First, the accounting standards are sufficiently complex and, although well founded on principle, require a decision that Nguema and Klustsch (2010) refer to as the “judgment” from an assistant account auditor who is ill suited for small and medium sized businesses (SMB). The publication in July 2009 of the standard IFRS-SMB has somewhat tempered this judgment, as seen by Colasse (2009); however, the OHADA reference framework, from the point of view of SMBs, offers numerous advantages that could be inspired by the IFRS-SMB standards. Nevertheless, the IFRS standards, sometimes imprecise with numerous options, are constantly evolving. Another brake worth mentioning is the updating of the IFRS-SMB standards every three years. Therefore, such a change to the OHADA accounting reference framework would certainly incur important financial costs, although even OHADA itself once paid the substantial costs involved during the adoption of the OCAM and SYSCOHADA plans in 1998 for the countries of UEMOA and, in 2001, for those of CEMAC.

Accounting Principles of SYSCOHADA

All accountants use implicitly or explicitly a certain number of principles, theories, and conventions grouped here under the general title of “Generally recognized accounting principles” (PCGR). Most of these principles are used universally, thus fully accepted. A few have a limited scope of use and are principally applied in Anglo-Saxon countries. In the French accounting plan of 1957 or OCAM, no explicit mention was made of these principles. Otherwise, in the French plan of 1982, the principles retained were directly or indirectly, without comments or further details. It resulted in an accounting practice at times insufficient, often difficult when interpreting regulations, hesitant in its application and non-homogeneous in accounting circles that was, in part, corrected with the accounting plan that followed in 1999. Understanding these principles allows for a comprehension of the general objectives stipulated in all financial statements in all accounting standards: provide a “faithful image” and a true, clear, and accurate representation of the estate, the financial situation, and the results of the company.

The SYSCOHADA retains eight “accounting principles”, all mentioned in the regulation. These eight principles are unanimous in the standard international accounting community; such is not the case for the ninth item or pre-eminence of reality over appearance, a basis for Anglo-Saxon accounting.

The accounting practice therefore requires, in the preparation of financial statements within the economic scope of member countries of OHADA, the following:

- “Good Judgment” viewed as a golden rule;
- The stability of permanent methods (presentation, and evaluation);
- Intangibility of statements (beginning of an exercise must correspond to the end statement of the previous exercise) according to articles of the regulations;
- Specialization of exercise statements;
- Historical costs;
- Continuity of the exploitation and the utilization of an asset (stipulated in OHADA articles 39 and 71);
- Transparency (it is essential to obtain trusted information that is also applied internationally under different names: clarity, sound information, even regular and genuine objectives);
- Finally, the significant importance that is also applied to the attached financial statement.

With regards to the pre-eminence of substance over form, this principle of Anglo-Saxon origin is neither in line with, nor in the cultural and judicial traditions of, the economic zone of the OHADA countries. It leads to providing, in the financial statements, the priority of economic reality over form or judicial appearance. For example, its application leads to listing the balance sheet of the assets of users for the value of goods leased as if they were the owners, at the expense of judicial appearance. The use of such a principle is logical and interesting from an economical and financial viewpoint, especially if we combine it with the principle of significant importance (the pre-eminence is not worth the trouble of being implemented unless it presents a significant importance ...). Its application is, however, difficult and is not typical of general accounting standardization, notably because it requires the account managers to conduct an analysis and interpretation of the leasing contracts, with the inherent consequences. Accordingly, it was not retained in its current form for inclusion in SYSCOHADA; however, five of its applications were included that cover, in effect, the majority of the cases observed. It is the responsibility of the appropriate regulatory bodies to recognize it, if necessary, as a general principle in order to expand its field of application to other situations and other contracts when the professional accounting practice, especially at the level dealing with companies, becomes familiar with this principle. In SYSCOHADA, the applications that are a result of the principle of substance over form are the following:

- listing on the asset balance sheet (as if the company was the owner) of goods designated as “property assets”;
- listing of goods placed at the disposition of the licensee by concession (balance sheet of licensee);
- listing on the user’s (or other’s) asset balance sheet goods that are used for leasing contracts;
- listing the balance sheet assets of goods offered on sale but not yet at term or accepted;
- listing a company’s “personnel expenses” invoiced to staff by other companies.

In these five years, the accounting consequences for the following solutions are assured by SYSCOHADA:

- listing the liabilities, by way of compensation for the stock assets, accounts for specific financial liabilities (leasing, property reserves ...); other “concession funds”, treasury debts (savings credit...);
- listing in the balance sheet charges and products items corresponding to: allowance for depreciation, financial charges (leasing), charges for personnel (temporary).

The Principal Innovations of SYSCOHADA

To accompany the economic reforms initiated due to the crisis, the member countries of UEMOA adopted on January 1, 1998, a new accounting reference framework: the West African Accounting System. Obviously adapted for the temporal needs of the end users of West Africa, SYSCOA served as a basis for consideration in the scope of the work for updating and harmonizing African legal affairs. The OHADA accounting system, presented at the end of this work and adopted by the signatory countries of the OHADA treaty, does not present any significant differences vis-à-vis SYSCOA. These new accounting systems are an exception because of their content; moreover, since they did not intend to participate in a new round of internal debates in the Francophone school of thought, they adapted and applied themselves to international requirements by showing openness to new influences (Gouadain, 2000).

Innovations Stemming from the Francophone School of Accounting

The OHADA accounting system accurately reflects the traditional French reference framework, especially if we refer to the end users of information and to accounting dispositions. Moreover, it retains certain innovations of the Francophone school of thinking included in the 1982 French reference framework and again included in 1999 plan.

Information better organized. Essentially, it involves the renewal of possibilities for economic and financial analyses because of the refinement to the concept of “*value added*”, to a much greater ease in calculating the capacity for auto-financing, and to the introduction of new financial statements such as the financial table of resources and employment (TAFIRE).

Information adjusted accordingly. In order to consider unequal needs, especially the rapid expansion of informal activities, the OHADA accounting system, based on the French accounting reference framework of 1982, chose to “adjust” the accounting requirements. Regarding financial statements to be presented, it therefore proposes to create three treasury systems based on their size: a standard system, a shortened/lighter system, and a minimalist system.

- The standard system applies to common law regulations. It is intended for medium and large companies, but may also be used by small business to better analyse their particular situation and operations.
- The shortened system is the accounting system applicable to small and medium size businesses whose turnover/sales and human resources do not meet the requirements for the standard system. This results in a double simplification: the number of required financial statements is reduced to three types of accounts (summary, profit/loss accounts, and statement appendix), and the number of summary items and profit/loss items are reduced, along with the information to produce in the appendix statement.
- The minimalist treasury system applies to very small companies that generally evolve in the “unofficial” sector. It aims to encourage them to equip themselves with a minimal

accounting system in order to facilitate their progressive integration with the “official” economy. It strongly deviates from the accounting standards of common law since it rests on cash flow accounting and not on treasury commitment, although it respects the “double entry” rule. This type of treasury accounting depends on the treasury exchanges (cash inflows and outflows) of the company.

Information to encompass multinationals. Whereas the accounting reference framework OCAM had remained silent on the practices of consolidation that interested multinationals, the accounting system OHADA chose not to leave such implementation to the sole discretion of private firms. Quite simply, the need for sound information, and to be a part of the general movement towards standardization incited their interest and participation. In effect, in developed countries, many companies did not wait for consolidation to be regulated to acquire, for reasons of internal management, accounts that identify them as global entities. Thus, an important core of the modern private economic sector in the African sub-Saharan countries is comprised of subsidiaries of multinational groups, a number of which are listed on numerous financial markets, with the majority possessing experience in consolidation as per international standards. Consequently, their African subsidiaries usually send to their head office accounting information for consolidation purposes (Wade, 2002). Establishing multinational accounts was therefore a necessity that was sensed by African zone countries using the franc; hence they deliberately aligned themselves with international practices and endeavoured to adapt them to their own economic context. The OHADA accounting system thus requires a bond for consolidated accounts, that weighs heavily under certain conditions, on all major companies having its head office in one of the OHADA member states, even if the company itself is controlled outside its economic zone. Otherwise, demonstrating a pioneering spirit, the OHADA accounting system allows the creation of “combined” accounts that applies to companies belonging to the OHADA zone, but nonetheless owned by a parent company located outside the zone. They must identify publicly the African subsidiaries of large multinationals as soon as they are established simultaneously in other African zone countries (Pérochon, 2009)

Analysis of the Convergent and Divergent points Between the Reference Frameworks of OHADA and IAS/IFRS

The accounting standards IAS/IFRS were established in 2001 by the IASB and are in force since 2005 for multinational companies and for those offering public savings bonds in the European Union. Hence, after opening their economies to global competition, the countries of Central Africa and West Africa implemented the accounting system OHADA (SYSCOHADA). This accounting system certainly had as an ambition to build a general theory on financial accounting that follows the logic of international regulations. Unfortunately, we note numerous divergences between SYSCOHADA and the IAS/IFRS standards.

Comparative Study of the Reference Frameworks OHADA and IAS/IFRS at the Level of Conceptual Objectives

As we have seen, OHADA, while an economic or accounting framework, is also dedicated to numerous objectives. The objectives of the conceptual framework regarding the preparation and the presentation of financial statements of the ISA/IFRS standards are larger than those defined by the OHADA reference framework. We present a few of these divergences in Table 2.

Table 2. Conceptual Objectives of OHADA & IAS/IFRS Reference Frameworks

Accounting Frameworks	Conceptual Objectives
OHADA	<ul style="list-style-type: none"> - find better judicial solutions and place them at the disposition of all countries regardless of their resources; - establish judicial security; - re-establish judicial security; - encourage the relocation to Africa of certain large companies; - re-establish the confidence of company CEOs and investors; - develop arbitration in Africa; - facilitate economic integration on the continent; - reinforce African unity;
IAS/IFRS	<ul style="list-style-type: none"> - basis for elaborating coherent accounting standards and revising existing standards; - harmonise regulations, accounting standards, and procedures related to the presentation of financial statements; - assist national organizations in developing national standards; - assist those who prepare financial statements in applying accounting standards; - assist auditors in developing opinions on the conformity of financial statements with international standards; - provide information on the method to elaborate the standards followed by IASB; - define the objectives of financial statements; - define the essential elements of financial statements and accounting principles that serve as a base for accounting; - assist end users interpret financial statements;

The conceptual frameworks of SYSCOHADA and IASB present the same architecture: objectives, qualitative characteristics, content of financial statements (including the definition of assets, liabilities, products, costs, equity capital), and the criteria for evaluating the elements of financial statements. On the other hand, the conceptual framework of SYSCOHADA in addition anticipated elements that comprise the above structure, the definition of the accounting framework, and the structure for the chart of accounts.

Comparative study of the OHADA and IAS/IFRS reference frameworks regarding the qualitative characteristics of the financial information

The qualitative characteristics of the information that will be the object of our comparative analysis will be based exclusively on the intelligibility, the pertinence, the reliability, and the comparability. They are summarized in Table 3.

Comparative study of the OHADA and IAS/IFRS reference frameworks from an end user's viewpoint

The SYCOHADA distinguishes between internal and external users:

Internal users are: directors, senior managers who are part of the administrative apparatus, and those who are part of the different internal management of the company. External users are: all those who provide capital funds such as investors, lenders, and providers of grants, the administration, and other institutions that have regulatory authority and control, other partners in the company such as salaried and unionized employees, suppliers and other creditors, as well as customers and other beneficiaries of goods and services produced by the company. Finally, other interest groups such as professional organizations and consumer groups, the media and

specialized press groups, researchers, various associations and the public in general. However, it is important to note that SYSCOHADA considers investors and financial sponsors as privileged users of financial statements.

Regarding the conceptual framework of IASB, it counts by itself seven users of financial statements:

1. actual and potential investors who are concerned about the risk and return on their investments (they wish information that will help them make enlightened and thoughtful decisions, to either buy or sell or retain company shares;
2. salaried employees interested in the profitability of their employer so as to either change employment or retain their positions with a higher salary;
3. lenders who are interested particularly in the solvency of their debtor to know if the amount owed (interest and principal) will be reimbursed at term;
4. suppliers and other creditors interested in the solvency of their client (capable of paying at term) and also by the lasting quality of the company especially if it is a major client;
5. clients are especially preoccupied with the continuity of the exploitation of their supplier;
6. the state and public organizations: these types are interested in the distribution of dividends, all the while respecting fiscal and accounting regulations;
7. the public is interested in the contribution to the local economy but also in the tendency and the recent evolution of the prosperity of the company and the spread of its activities.

Finally, we note a point of divergence related notably to the users of accounting and financial information in the two accounting reference frameworks OHADA and IAS/IFRS. For the IASB, many users are clearly identified (investors, personnel, lenders, suppliers, and other creditors, clients, state and public organizations, and the public at large). Without prejudging any hierarchy between users, the conceptual framework of the IASB seems to direct the presentation towards investors by supposing that satisfying the needs of investors should lead automatically to also satisfying the needs of other parties involved. For its part, the conceptual framework of SYSCOHADA directs the information to all the “agents” of an economic marketplace whose center is free enterprise. The conceptual framework of SYSCOHADA classifies the users of accounting information as follows: companies, suppliers and clients, investors and company shareholders, lenders, banks, central banks, and State personnel. This same framework retains an approach more economical than financial insofar as the diffusion of accounting information.

Comparative study of OHADA and IAS/IFRS reference frameworks from an accounting convention viewpoint

The accounting conventions or accounting principles are the rules and instructions that must be respected when preparing financial statements. As we have seen above (See 1.2.4.), the SYSCOHADA defines eight basic accounting conventions that are the foundations for accounting analysis and the preparation of accounting statements. We can list other accounting conventions that can be mentioned in the annexed statement: conventions for items, monetary unit, frequency, realization of revenue, incorporating fee charges to products, objectivity, providing complete information and the pre-eminence of substance over form. The historical cost (original value) is used as the basis for posting the assets and liabilities of a company.

Table 3. Qualitative Characteristics of Financial Information in the Conceptual Frameworks of SYSCOHADA and IASB

Characteristic s	SYSCOHADA	IASB
Intelligibility	<ul style="list-style-type: none"> - information must be comprehensible to end users - this supposes that users have a reasonable knowledge of business and accounting 	<ul style="list-style-type: none"> - the conceptual framework of IASB adds that a complex information that must be included in financial statements because of its pertinence must not be excluded for the sole reason that it would be too difficult to understand by certain users
Pertinence	<ul style="list-style-type: none"> - information is considered pertinent when it can influence the economic decisions of users by helping them evaluate past, present, and future events, or ... - by confirming or correcting their previous evaluations <p>In effect, information must have three qualities:</p> <ul style="list-style-type: none"> - <i>a predictive value</i>: one that will help end users predict results and future events; - <i>a retrospective value</i> or of confirmation: one in which information can be used to understand or correct results, events, and previous predictions; - <i>speed of disclosure</i>: all information must be disclosed at the moment it is susceptible to be useful in decision making 	<ul style="list-style-type: none"> - The conceptual framework of IASB adds the notion of <i>relative importance</i> that can be defined as an information whose absence or incorrectness is susceptible to influence the decisions of users
Reliability	<ul style="list-style-type: none"> - The conceptual framework of SYSCOHADA presents three criteria for an information to be reliable: - <i>faithful representation</i>: between the description of events and the transactions they are supposed to record ; - <i>neutrality</i>: accounting information is neutral if it is devoid of possible subjectivity; - <i>verifiable</i>: it exists through accounting receipts as proof which can be shown at any time; 	<ul style="list-style-type: none"> - The IASB defines reliable information as being information free of errors and any significant bias. It identifies five criteria for reliable information: - <i>faithful image</i>: transactions and other events the information aims to represent; - <i>neutrality</i>: accounting information must not direct a user in a manner that is predetermined in advance; - <i>pre-eminence of content over form</i>: transactions and events already counted must reflect the economic aspects of the transactions and not the judicial ones;
Reliability		<ul style="list-style-type: none"> - <i>good judgment</i>: taking into account a certain degree of caution in the exercise of judgment necessary to quote estimates in order to prevent assets or products being over-evaluated and liabilities or charges being under-evaluated; - <i>exhaustiveness</i>: stipulates that the information contained in the financial statements must be exhaustive and complete as much as possible considering the relative importance;
Comparability	<ul style="list-style-type: none"> - The conceptual framework of SYSCOHADA requires that the information be comparable from one fiscal (accounting) year to another in 	<ul style="list-style-type: none"> - The conceptual framework of IASB stipulates the same; however, it adds that: the principal of comparability must not lead to a pure uniformity in

	<p>order to follow the evolution of the financial situation of the company to compare with in different time periods;</p> <p>- Regarding comparability in space, it is obtained by comparing two companies (requires using the fiscal data from the previous period as well as using the same accounting methods).</p>	<p>accounting methods; moreover, whenever a new method leads to information that is more pertinent and a better faithful image, it should be adopted accordingly. However, such a change and its impact must be noted in the notes so annexed.</p>
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The IAS/IFRS standards recognize as accounting base conventions the first three fundamental accounting principles of the accounting system, as follows: the continuity of exploitation, the permanence of methods, and the independence of exercises.

The IASB (*International Accounting Standards Board*) has not listed its accounting conventions. However, they can be drawn from the accounting standards, the conceptual framework, and especially from the IAS1 relative to the presentation of financial standards. We state but a few: the conventions for the permanence of methods, the relative importance, the frequency, just value or market value, retention of complete information as a component of reliability, good judgment, and the pre-eminence of economic substance over judicial form, along with faithful representation.

The two conceptual frameworks (IASB and OHADA) propose the same conventions, accounting principles or characteristics, such as prudence and the intangibility of the opening summary. The conceptual framework IASB, contrary to SYSCOHADADA, had replaced in 2000-2001 the principle of historical cost by the principle of just value. Since the subprime crisis of 2007 and the disorder that followed, since 2010 the modified conceptual framework is no longer as rigorous on using just value, that demonstrated during the crisis many inconveniences, and the historical cost is again used. The historical cost³⁰ constitutes the principle base accounting convention adopted for preparing financial statements in the OHADA accounting system. This is why the IAS/IFRS standards insist on the re-evaluation of intangible assets, tangible assets, and long-term investments.

In SYSCOHADADA, the principle of “good judgment” allows us to apply corrections to the historical cost. Concerning assets, the net value to enter in the summary is the lower of the two values between the entry value (original) and the actual (market) value. In effect, if the actual value is higher or equal to the entry value, we retain the entry value (the *plus-values* are not counted). However, if the actual value is absolutely lower than the entry value, we observe depreciation or, exceptionally, an amortization if the depreciation appears definite and irreversible. As for the shares in the liability summary, we note that, as a rule, the summary value is equal to the nominal value. On the other hand, the notion of a just value constitutes the key to the IAS/IFRS standards. The just value is defined as the amount for which an asset may be exchanged or a liability erased between well-informed parties, consensual, and acting under conditions of normal competitiveness. The assets must be evaluated at their market value or potential sell or exchange value, which involves an important volatility due to fluctuations in the market. This accounting method is an abstraction of the historical cost, a principle that is also a key to OHADA.

³⁰ The historical cost is the price paid at the moment of acquisition. This price constitutes the entry cost/value.

Conclusion

The adoption in the 1970s of the OCAM common framework by the member countries marked the beginning of the standardization process in Francophone Africa. Faithful to the “French” standardization, the countries of sub-Saharan Africa, which only recently applied the framework issued by their former French colonizer, now, had with the OCAM standards a much larger accounting autonomy. In order to keep things comparable between the financial statements of companies of various horizons along with a sound circulation of financial information, the IAS/IFRS accounting standards were elaborated on an international level, and applied to multinational companies, including those seeking public offerings since 2001 in the European Union. Following the opening of their market, the sub-Saharan Francophone countries (Central Africa and Western Africa) put into place the accounting system OHADA (SYSCOHADA). Conceived with the spirit to harmonized the accounting principles used in order to provide uniform information to both directors and investors in a homogenous, comprehensible, interpretable, and in a more clear and comparable manner.

Whenever the accounting standards of OHADA are silent on certain specific accounting practices of companies, they are referred to international standards, notably the International Accounting Standards Board (IASB), or the Anglo-Saxon Financial Accounting Standards Board (FASB) with the obligation today to “combine” this African accounting strategy with the member states of OHADA, along with IFRS standards, including new requirements imposed by financial globalization towards evaluating and presenting accounting information. The study shows that SYSCOHADA had the ambition to develop a general theory on financial accounting that would follow the logic of international standardization. This objective has not yet been reached since the international, European and African situations are complex; however, we can be optimistic: evolution continues its march forward and the divergences between the two accounting reference frameworks OHADA and IAS/IFRS cannot but blur.

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Key Performance Indicators: What Are Credit Unions Measuring and Why?

Introduction

The purpose of this report is, first, to identify the key performance indicators (KPIs) reported by credit unions and secondly, to gain an understanding of why and how KPIs are chosen. The report examines the various influences on selection of KPIs. These influences include the seven principles of cooperatives, strategic planning, industry benchmarks, regulation and users. It is important to conduct this study since performance in many organizations, including credit unions (CUs) is driven by their KPIs. Furthermore, stakeholders are able to discern from the KPIs reported, the focus of the organization, major initiatives and degree of success in meeting objectives. This study adds to the body of literature on CU reporting since there is a paucity of research focused on an analysis of KPI selection and reporting. This research is based on 19 CUs in Canada. This paper presents the initial findings from the study, which is intended for a practitioner audience. The next phase of the research will include a literature review and an examination of underlying theoretical models to explain the findings.

Methodology

This research uses a case study approach, which comprises semi-structured interviews and a documentary review of annual reports, performance reports and websites of participating CUs. Semi-structured interviews were held in person (with the exception of one which was held by telephone). Interviews were of one-hour duration and were held at respondents' worksites during 2011 and 2012. All respondents held senior position in the CU, ranging from Director, Vice-President, Chief Financial Officer and Chief Executive Officer. The documentary review was comprised of identifying all KPIs publicly reported by the participating CUs in their annual reports, performance reports, strategic plans and websites. A stratified sample of was selected to represent small, medium and large organizations in urban and rural areas. While case studies are not based on statistical samples, which could be extrapolated to the population at large, this research approach has the benefit of deriving rich data and gaining greater insight by providing the researcher with an opportunity to probe for more detailed information.

Respondents are coded as R1, R2, etc. Reference is also made throughout the paper to 'Centrals'. A Central refers to regional and national CU associations that provide various administrative support and statistic data to their respective CUs in a province or region. Through the paper, the term 'stakeholder' is used to refer to internal stakeholders (CEO, management and staff) and external stakeholders (members and regulators).

Research Findings: Discussion and Analysis

Semi-structured Interviews. The following sections present findings from the interviews and are groups into five major categories which impact selection of KPIs: seven principles of cooperatives, strategic plans, benchmarks, regulation and users.

1. *Seven Principles of Cooperatives*

The cooperative principles were introduced by the International Cooperative Alliance (ICA) in 1844 and have been revised several times with the most recent revision in 1995 (ICA, 2011). The cooperative principles are listed and defined in Table 1:

Table 1: Seven Principles of Cooperatives

Principle	Definition
1. Voluntary and open membership	Co-operatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership without genera, social, racial, political or religious discrimination.
2. Democratic member control	Co-operatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary cooperatives members have equal voting rights (one member, one vote) and co-operatives at other levels are also organized in a democratic manner.
3. Member economic participation	Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the co-operative; and supporting other activities approved by the membership.
4. Autonomy and independence	Co-operatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.
5. Education, training and information	Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public – particularly young people and opinion leaders – about the nature and benefits of co-operation.
6. Co-operation among co-operatives	Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.
7. Concern for the community	Co-operatives work for the sustainable development of their communities through policies approved by their members.

Source: International Co-operatives Alliance (2011)

In a study conducted by Birchall (2005) he contended that in the ten years following the ICAs most recent revisions to the principles, the focus was expected to be on making the values and principles known. Birchall anticipated that for the ten years after 2005 the emphasis would be on the operationalization of the values and principles into co-operative business practices. Therefore, one of the key topics of this research is to ascertain whether the principles are indeed the focus of CUs as illustrated in the strategic plans and KPIs.

All respondents indicated the seven principles were not explicitly monitored and measured as KPIs. One CEO explained that while the seven principles were not reflected in the strategic plan and targets, she ensured they were top of mind with employees by assigning the principles to various staff members each year and asking them to define and comment on them in staff meetings (R19). Another CEO noted she reminded employees and members of the seven principles in their annual report (R14). There were a wide range of views regarding the prominence of the seven principles. Some CUs had moved away from the seven principles, but were now returning to their roots. Other respondents indicated the principles were part of the corporate culture and were behavioral as illustrated in the following remarks:

They are part of our corporate culture, but we don't measure them. (R10). They are more behavioral (R4). Some are reflected in our annual report (R7). We are supportive of the cooperative philosophy, but it doesn't get built into the strategic plan (R9). We talk more about the seven principles than we did historically. The seven principles go back to the cooperative roots. We became more bank-like, but are now getting back to our cooperative roots (R1). The seven principles influence the values section of the strategic plan. They are fully integrated in all business decisions, they are the essence of who we are and our brand. They are ingrained in the business model (R17).

One CU was in the process of determining how to incorporate the seven principles in its strategic plan. This respondent commented: "we have just started discussing the seven principles in the context of developing the Balanced Scorecard, but we are struggling to develop appropriate measures" (R3).

Despite claims by all respondents that the seven principles informed their organizational culture, the research found a weakening awareness of the principles: "I don't know the seven principles, but I'm sure the CEO knows them by heart". One CEO stated: "they are not a part of our discussion. I looked them up a month ago. They are not top of mind" (R16). Another commented: "I can't see the seven principles governing everything. The Board is more familiar with the principles than management" (R15). The research also found different perceptions of understanding among the BOD (Board of Directors), senior management and staff:

Training is provided for the BOD and this includes the principles and the cooperative difference. Cooperation among cooperatives is important for the Board. For example, if we develop policy and procedure, we share with other cooperatives. On a day-to-day basis, the seven principles are not important for tellers, but for the CEO it is important. We talk about the seven principles in staff meetings. In each meeting, a principle is discussed. (R6)

At the other end of the spectrum, some respondents expressed little support for the seven principles. One respondent contended that cooperation among cooperatives should not entail cross subsidization. For example, he disagreed with his Central charging the same rates for processing (such as cheque clearing) regardless of size. He believed large CUs should receive volume discounts. He went on to state that he had a problem with helping the little guy if his CU was not getting anything back in return. He believed cooperation should not be about cross subsidization. The same respondent also pointed to the lack of member interest in the seven principles:

We did market research and tested if the concept of being an owner was important and had any meaning for members. The result was a decisive 'NO'. Members just wanted a financial institution to meet their needs. They do not focus on a bank or a cooperative (R11).

Concern with cooperation among cooperatives was also voiced by another respondent, who attributed his concern to competition within CUs:

Cooperation among cooperatives seems to be falling by the wayside due to increased competition among CUs. Cooperation among CUs is difficult, but if we are developing a new technology or a new policy, we will share. There is cooperation with small CUs. (R8)

This research found the seven principles were not explicitly measured, but according to some respondents informed their corporate culture, while others indicated they were getting back to their cooperative roots. Meanwhile two respondents expressed concern about the validity of cooperative among cooperatives as it relates to cross subsidization and member interest. The one exception to these general findings is that one CU discussed the seven principles in its annual report (R14).

Arguably, the seven principles could play a major role in differentiating CUs from banks. Clearly, the CUs in this study do not focus on using the seven cooperative principles in this manner. That is not to say it is impossible for CUs to differentiate themselves from banks, but the seven principles could nevertheless play an important role. Over time, it is conceivable that stakeholders will no longer be aware of any cooperative difference, particularly since they are not monitored or measured. If that happens, one has to question the very survival of credit unions as a distinct business model from banks.

2. *Strategic Plans*

All participating CUs had strategic plans and used the Balanced Scorecard (Kaplan and Norton, 1992) to report on their progress. The Balanced Scorecard (BSC) as introduced by Kaplan and Norton (1992) organizes strategic objectives into four perspectives: (1) financial which focuses on growth, profitability and risk; (2) customer perspective identified strategies to create value for customers; (3) internal business processes that emphasize the creation of customer and shareholder satisfaction; and (4) learning and growth which concentrates on a climate that supports organizational change, innovation and growth. CUs also concentrated on these four areas: employees, members, business processes and financial. However, all respondents indicated their predominant focus was on financial with considerable attention on profitability. As one respondent pointed out, profitability was essential to achieve the other main goals. In some cases,

CUs added a fifth category for corporate social responsibility (CSR). In describing her CUs approach to strategic planning, the respondent explained they focused on a few select factors rather than on many things (R18).

In all cases, strategic plans were developed by senior management and approved by the Board. Only one CU reported using a consultant to assist with the strategic planning process. However, various Centrals played an important role in assisting with strategic plan development. In one case, the respondent explained that her Central provided a strategic plan template, which they subsequently modified (R6). While development of the strategic plan was primarily the purview of senior management in most cases input from remaining management and in a couple of instances input from staff was solicited. However, all CUs shared the strategic plan with employees and provided periodic updates. Member input was not directly solicited and members were informed of the plans at the annual general meeting (AGM). Similarly, there was minimal input from employees in strategic plan development, but as illustrated in the following comment, it is beneficial to seek their input:

Employees really appreciate the opportunity to have input. At first, managers and directors were a little uncomfortable as employees advanced their ideas, but they are now more comfortable it is. Employees indicated after the process, they were very happy to have had the opportunity to have input. (R1)

While members and employees were not directly invited to be involved in developing strategic plans, most respondents indicated they conducted employee and member surveys. The survey results were used to monitor satisfaction levels and identify areas requiring improvement. CUs engaged external service providers to conduct surveys and analyze the results. In many cases, the surveys were used to monitor and measure targets related to employee and member satisfaction levels. In one CU, the strategic planning process was heavily influenced by the organization's risk management plan (R6).

All respondents indicated strategic planning results as measured through KPIs were used to calculate bonuses for staff and management. Most CUs had a two-tiered bonus scheme whereby part of the bonus was based on the CUs overall performance and the remaining part was based on attainment of individual goals. Two participants stated while they have pay-for-performance schemes in place, bonuses were not paid in the past year due to poor financial performance. Strategic plans were not simply an exercise in formality. They were closely monitored by senior management and the Board of Directors. As one respondent noted the strategic plan is meant to be a living document. That being said, strategic plans and BSCs were largely internal documents and used primarily by management rather than being distributed as an external reporting tool.

3. Benchmarking Performance

In conjunction with developing the strategic plan, various KPIs and targets were selected. Some targets were derived from internal historical trends, while others were based on industry benchmarks. One respondent advocated the use of benchmarks because they are important in giving stakeholders context. Benchmarks were derived from a broad array of sources ranging from Centrals, in-house scanning of CUs and banks, confidential peer information exchange and private research firms.

All CUs indicated they relied heavily on statistical data provided by their respective Centrals. In particular, they found data sorted according to CU size to be beneficial in identifying appropriate target levels of performance. However, some respondents expressed concern about the true comparability of the data since CUs might be using different definitions and calculation methodologies for certain statistics such as efficiency ratios. (R18) One respondent described the efficiency ratio as operational costs divided by income (R10), while another described it as operating expenses divided by average assets (R3). This is further evidence of the potential lack of comparability of KPIs due to differing calculation methodologies. A respondent suggested that variations in classification of expenses could have an impact on the data: “It is difficult to tell what is comparable. For example, there could be differences in how CUs define costs classified as technology and marketing. Overall, net income is the most comparable.” (R4). Concern was expressed with peer comparison: “The issue is definitional. Benchmarks could be misleading. We need to understand how the statistics are calculated and you need to be careful how to define your peers”. (R18)

The research revealed CUs were supplementing data provided by their respective Centrals with information obtained from environment scans of websites and annual report for banks and CUs:

We monitor the competitions’ websites every day and get reports on rates for deposits and mortgages. We also monitor service fees, new products and new services. (R8). We compare to similar-sized CUs in our province. We review their annual reports and set up a spreadsheet. (R9). We benchmark against CUs our size...we find information in their annual reports on assets and loan growth, return on equity, capital adequacy and efficiency ratio. We track mortgage growth of CUs versus banks for commercial loans, mortgages and lines of credit.” (R11)

Another source of benchmarking data was derived from some regional practices of sharing confidential information among CEOs. These networking meetings are held quarterly and include the CEOs of the largest CUs in the region or province. They share information in order to better understand their respective performances and identify best practices. This is clearly an excellent example of cooperation among cooperatives, which is unlikely to be found in major banks. In other provinces where there are no formal networking meetings, senior officials use their personal contacts in other CUs to obtain information on more general information such as audit fees, rates and impact of IFRS (R10) as a result of their non-taxable status.

The research found some CUs obtained benchmark information through the networking with Financial Executives Institute and to a lesser degree from the Filene Research Institute. The main concern with the Filene Research Institute was the perceived lack of comparability with the American CUs due to their tax exempt status. (R10).

Finally, a minority of CUs engaged external research companies to provide benchmark information. This tended to be the practice of those CUs who were interested in comparing to all financial institutions including banks. For example, one CU hired a research firm to conduct customer satisfaction surveys, which could be compared to financial institutions. Another CU hired a research firm to compile statistical data on banks and CUs. Meanwhile, Gallop was used by CUs to gather data through surveys on employee engagement (R11). This CU also engaged a research company to survey brand measurement.

The benchmarks used very much depended on what was being measured. In some cases, CUs compared with other CUs while in other situations, they were more interested in comparing to banks. For example, they compared to banks for KPIs related to productivity and return on investment, but benchmarked to CUs for data such as number of members attending the annual general meeting (R13). Another respondent noted: “We compare our efficiency ratio to banks because we compete against banks. We want to be better than banks.” (R10). Meanwhile one respondent explained: “we compare to the five banks by using their annual reports. We are interested in profit margins and rates. We compare and try to find out why they are better” (R14). According to another respondent, it is beneficial to compare to banks: “we are different, but we play in the same sandbox so they are relevant. Banks provide a good indication of where we should be” (R17). One respondent also commented on the challenges associated with comparisons to banks: “It is difficult to compare net income to banks. They are not in the same business. We don’t have wealth management.” (R4).

There appeared to be conflicting views on the merits of comparing CUs to banks. Some argued CUs do not have the same profit motivation and therefore should not be compared to banks, while others argued they should compare to banks since banks are their main competitors. One respondent cautioned against comparison to banks, particularly for large CUs: “We want to identify as a CU, not as a bank. When CUs are bigger, they look more like banks because they focus on the bottom line. We focus on what is best for our members.” (R9). Banks were not viewed as appropriate referents since some of their efficiency and productivity KPIs could be distorted by profits generated from wealth management and insurance sales (R16). Furthermore, comparison to banks was questioned by a CEO since CUs have not rationalized their operations in the same way as the banks (R19). Furthermore, concern was expressed that comparison to banks might not necessarily be appropriate since CU rates on deposits were 30 -50 basis points higher than banks and their mortgage rates were lower than banks. This respondent also explained that unlike banks, they do not negotiate rates since all members are treated the same (R19). Another stressed “the sheer size makes it difficult to compare to banks. CUs have 5% - 7% of the market. Customers deal with CUs because of convenience and service, not because they are CUs” (R18).

While there was some benchmarking to banks, the majority of CUs were comparing to CUs, particularly those of similar size. Moreover, some also reported that national CU data was helpful in setting benchmarks (R14, R15) since regional comparison might be misleading if the rest of Canada is performance at a higher level (R16). An interesting finding concerned one CU that indicated they compared to non-CU cooperatives on certain factors such as marketing and how to promote cooperatives in general (R15). Moreover, another CU revealed they compared to insurance cooperatives (R17). Certainly, there are several KPI categories such as employee diversity, employee turnover, percentage of revenue donated to the community and percentage of greenhouse gas emissions that could be compared to non-CU cooperatives. Clearly, opinions were divided as to the appropriate comparative benchmark: CUs, banks and/or non-CU cooperatives. As this research discovered there are instances where all three benchmarks could be validly used, depending on what was being measured.

Finally, several respondents highlighted that they were more interested in monitoring and measuring their own priorities:

We monitor the competition, but we still focus on our own priorities. CUs compete against each other at the expense of viability. We should go after banks instead. We work together across provinces, but compete within the provinces. CUs are moving from rural to urban markets. (R8 and R9).

However, the counterargument could be made that without reference to a benchmark, it would be difficult for stakeholders to ascertain the reasonableness of targets. For example, without benchmarking to industry standards, a CU could set targets at artificially low levels that would be easily attainable. Ideally, targets should be attainable, but at the same time, represent a reasonable challenge. The research also found that one CU stressed the importance of demonstrating the legitimacy of their KPI results by having them reviewed by their auditors (R16).

Overall, the research found that CUs monitored and compared their performance on the following KPIs:

- Efficiency ratio
- Profitability
- Productivity
- Return on investment
- Return on assets
- Income growth
- Percentage surplus returned to members
- Membership growth
- Growth in loans and deposits
- Wealth management
- Net promoter score
- Cash flows

When asked which KPIs were most important, the overwhelming majority confirmed profitability and efficiency ratio were the most closely monitored and compared indicators. Furthermore, the predominant focus was on financial indicators. Choice of comparative referents was often driven by the perceived main competitor. While some respondents viewed banks as their main competition, in other situations, CUs were seen as the competition (R8 and R7). In other cases, government-owned financial entities such as Farm Credit Canada and Alberta Treasury were viewed as major competitors. Only one respondent stressed the importance of employee engagement. The CU credited their extensive communication with employees as the chief reason why they were rated as one of the best companies to work for in their region (R16). The smallest CU participant indicated that cash flow was critical for them since they are a very small CU.

4. Regulation

All CUs in Canada are regulated by their respective provincial governments. In addition to the provincial government regulation, Canadian CUs are subject to two major federal government regulations: privacy and money laundering. Provincial regulatory authorities are primarily concerned with financial viability as reflected through capital adequacy, return on assets, capital to total assets and risk management. CUs are required to provide certain financial information and KPIs to the provincial regulator on a periodic basis – monthly or quarterly. While this regulatory data is reported to the Board of Directors, it is not included in the strategic plans of CUs and is usually not included in annual reports and Balanced Scorecards. However, one CU reported their

regulatory metrics were monitored by the audit committee (R19). Since the data is reported to the regulator, it is available to all CUs who can utilize it for comparison purposes. It is noteworthy that most CUs set their targets to achieve a higher level of performance than that required by the regulator.

While most large CUs did not have concerns with regulation, many smaller CUs viewed it as cumbersome, time-consuming and costly and some respondents of small CUs raised the possibility that increased regulation might force more amalgamations as a way of coping with this administrative burden:

With increased regulation, there is less time for corrective action and it results in increased costs with no benefits. Since we are small, we have key person dependency regarding reliance on one individual for compliance. (R8). It is onerous and a complete waste of time (R16).

Some of the larger CUs believed the regulators should be more vigilant with small CUs as reflected in the following comment:

We are concerned about CUs growing through increased commercial lending, since this often results in risks. We have met with the Central and the regulator to highlight this issue. We want the regulator to watch smaller CUs to make sure they are solvent and to encourage consolidation. CUs need to be a viable R10tive to banks and to do that we need fewer CUs. (R11).

In general, regulatory KPIs were not included in strategic plans and were not monitored and measured through BSCs. For the most part, CUs appeared to accept regulation with the exception of a couple of small CUs that expressed concern about the level of effort associated with compliance. However, there was an underlying perception by large CUs that smaller Cs were posing a risk to the financial viability of the CU system and should be encouraged to merge with larger CUs.

5. Users of KPIs

Overall, the primary users of KPI information were the CEO, senior CU executives, Board of Directors, regulators and peers. In most cases, KPIs were reported to employees through Balanced Scorecard updates. Although members were provided with a strategic plan update at the annual general meeting, respondents believed there was minimal member interest in this information:

The average member is not interested in strategic plans and KPIs. Only about 0.5% to 10% attend the annual general meeting....90% of members deal with us as a financial institution...they don't care if we are a CU. Members want free benefits not offered by banks. For CUs in general, only 5% are really involved. They say 'stop telling me you're a cooperative, just tell me the financial benefits'. (R13)

Low member interest in KPIs was attributed to lack of financial knowledge: "there are very few questions in the annual general meeting. Most members don't have the sophistication to read the annual report." (R10). The general sentiment regarding member interest was summarized by one

respondent: “members are more interested in yearly results and in their profit sharing,” (R3). This view was echoed by another respondent who stated they “were not sure if members were interested in KPIs – they were more interested in interest rates” (R14). Alternatively, it could be argued if members were invited to become more actively involved in developing the strategic plan and targets, they would have greater interest in the annual report and KPI information. In contrast, a counterargument could be made that the BOD represents the underlying membership and should ensure their issues are addressed in the plan.

Despite member apathy towards KPIs, CUs continued to provide this information in annual reports, websites, and newsletters, verbal reports at the annual general meeting and in some cases through press releases (R3). All respondents shared the strategic plan and KPIs with their employees through meetings and on internal websites. This helped to ensure employees were working towards achieving the strategic plan and in seeing their place in the plan.

Documentary Review

This section provides a summary of KPIs publicly reported in annual reports, performance reports and websites of the CUs participating in this study. It should be noted the interviews revealed CUs are monitoring other performance categories internally, but do not report on them externally. Most of the additional internally-reported KPIs have been established to aid in achieving strategic plans. In nearly every interview, respondents brought a hard copy of all the KPIs monitored internally. Perhaps these internal KPIs were not made available since they were confidential and CUs did not want to reveal their strategies to the competition. Also, it is noteworthy that there were targets for most categories. However, only the publicly available data is examined in this report. KPIs reported are grouped into two categories: non-financial indicators and financial indicators. The non-financial KPIs are presented into two sub-categories: human resources and other non-financial KPIs.

1. *Non-financial KPIs*

a) Human Resources

Table 2 provides a summary of the KPIs reported by CU in the annual reports, performance reports and websites.

By far, the highest number of KPIs publicly reported related to human resources. In total, there were 14 different KPIs in this category. However, only three, number of employees, employee engagement, benefits and training were widely reported by 6 (32%), 8 (42%) and 8 (42%) respectively. The remaining 11 KPIs were reported by one to three CUs. Of the 14 KPIs reported, targets were included for only two indicators. One CU reported targets for employee turnover and visible minorities and three CUs included targets for employee engagement.

Table 2: Human Resources KPIs

	Number	Percentage	Number	Percentage
	CU's	CU's	CU's	CU's
<u>Key Performance Indicator</u>	<u>Reporting</u>	<u>Reporting</u>	<u>with Targets</u>	<u>Targets</u>
Employee turnover rate	3	16%	1	5%
Number of employees	6	32%		
Percentage employees unionized	1	5%		
Diversity: male-female	3	16%		
Diversity: age	1	5%		
Diversity: women in management	3	16%		
Diversity: women in senior management	2	11%		
Diversity: women in non-management	1	5%		
Diversity: visible minority	2	11%	1	5%
Diversity: visible minority non-management	1	5%		
Diversity: employees with disabilities	2	11%		
Employee engagement	8	42%	3	16%
Ethical scores - employees	2	11%		
Benefits and training	8	42%		

b) Other Non-financial KPIs

Table 3 provides a summary of all other remaining non-financial KPIs found in annual reports, performance reports and websites.

Table 3: Non-financial KPIs

	Number	Percentage	Number	Percentage
	CU's	CU's	CU's	CU's
<u>Key Performance Indicator</u>	<u>Reporting</u>	<u>Reporting</u>	<u>with Targets</u>	<u>Targets</u>
Community Leadership & Reputation	2	11%		
Trust - environmental & social responsibility	2	11%		
Member loyalty scores	9	47%	2	11%
Greenhouse gas emissions	3	16%	1	5%
Number of members	13	68%		
Number of branches	13	68%		
Community donations	12	63%	5	26%

In total, there were six different non-financial KPIs reported. With the exception of community leadership-reputation, trust related to environmental and social responsibility, these categories were widely reported with over 60% providing data (1 commentary only) for community donations, number of members and number of branches. Targets were provided for three KPIs: community donations (5), member loyalty scores (2) and greenhouse gases (1).

c) Financial KPIs

Table 4: Financial KPIs

	Number	Percentage	Number	Percentage
	CU's	CU's	CU's	CU's
Key Performance Indicator	Reporting	Reporting	with Targets	Targets
Dividends	4	21%		
Efficiency ratio	7	37%	4	21%
Return on assets	5	26%	3	16%
Return on average equity	4	21%	2	11%
Growth of total assets	12	63%		

Despite the considerable emphasis placed on financial KPIs during the semi-structured interviews, only five financial KPIs were reported. While all respondents talked about the importance of the efficiency ratio, only seven CUs reported this statistic. Respondents' also stressed the importance of growth and this statistic was reported by 12 CUs. Targets were provided for three KPIs: efficiency ratio (4 CUs); return on assets (3 CUs) and return on average equity (2 CUs).

Although the CUs did not correlate their KPIs to the seven cooperative principles, several categories can be linked to the principles as illustrated in Table 5.

Table 5: KPI Linkage to the Seven Cooperative Principles

Principle	Correlating KPI
1. Voluntary and open membership	Number of branches, number of members
2. Democratic member control	Member loyalty
3. Member economic participation	Dividends
4. Autonomy and independence	Ethical employees, trust environmental and social responsibility
5. Education, training and information	Benefits and training expenditures
6. Cooperation among cooperatives	
7. Concern for community	Community donations, community leadership and greenhouse gases

Conclusions

The objective of this research was, first, to identify KPIs reported by CUs and secondly, to gain an understanding of why certain KPIs were selected. The research found KPIs were largely influenced by strategic plans. These plans were developed based on each CUs priorities and initiatives. For the most part, the strategic plans were developed by senior management and approved by the BOD with minimal input from employees and virtually no input from members. Targets for KPIs related to strategic plans were often influenced by external sources such as other CUs and banks.

According to the responses obtained in the semi-structured interviews, the seven principles of cooperatives played a very minor role in the strategic plans and were not reflected in KPIs. The seven principles were portrayed as having an influence on organizational culture and values. Moreover, some CUs even questioned the utility of the seven principles. If CUs are not using the seven principles to differentiate themselves from banks, the obvious question is how they are demonstrating the cooperative difference.

Perhaps one of the most surprising findings from the research relates to the views expressed by most respondents that members do not care about CUs as cooperatives; rather, members were perceived as more interested in convenience, service and rates. If members are not interested in the cooperative difference, then the future of CUs as distinct from banks must be considered.

Another area of concern highlighted by this research relates to appropriate benchmarks. All CUs agreed it was important to consider benchmarks when developing targets. However, there was a wide array of viewpoints regarding appropriate benchmarks. Some advocated CUs while other considered banks to be highly relevant. Meanwhile, concern was expressed about how CUs were calculated their KPIs and were consequently concerned about too much reliance on CU peer data.

Although CUs did not explicitly monitor and measure the seven principles, many of their published KPIs can be correlated to the principles as illustrated in Table 5. It is important to note that examples of KPIs reflecting cooperation among cooperatives could not be identified. This is also reflective of some of the findings regarding the perceptions of CUs as competition and not wanting to subsidize smaller CUs. In contrast, an important example of cooperation among cooperatives is the practice of CEOs in certain regions holding networking meetings where confidential information was exchanged in an effort to identify best practices.

There was considerable concern about the low interest rates and how this was squeezing margins. This might have the effect of encouraging more mergers and CUs becoming larger in order to maintain their financial viability. This has the potential, as suggested by one respondent of making CUs more like banks. The counterargument is that large CUs do not necessarily have to become more like banks.

Perhaps the most significant finding is that CUs are the best kept secret. Most members of the public are unaware of the many benefits provided by CUs in terms of lower mortgage rates and higher deposit rates. The question remains, will CUs differentiate themselves on rates or one the cooperative difference or both. As one CEO commented: “there is a need to create a national vision and a national brand. We don’t tell people what CUs are all about. We are not aggressive with the banks – we need to emphasize the strength of the cooperative principles in marketing”. (R17).

As mentioned earlier, this report presents the findings from the semi-structured interviews and documentary reviews. The next phase will include a literature review and identification of theoretic models to explain the findings. This study had highlighted the need to do more research in several areas. The next stage of this study will involve an on-line survey of all CUS to ascertain the KPIs monitored and measured internally, but not publicly reported. This research would gather only the measures, not the actual results. Such research would provide considerably more insight into what metrics are really driving the performance of CUs. There is also merit in

developing industry metrics that are calculated according to a pre-determined methodology agreed to by the industry. This would increase confidence in the validity of peer data.

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A Descriptive Analysis of Accounting Documents Nova Scotia Court of Vice Admiralty, 1749-1818

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This article reports on an examination of transactions and proceedings documents included in the Case Files and other records of the Nova Scotia Court of Vice-Admiralty during the period 1749 to 1818, with particular attention paid to the valuation and disposition through the Court of prize vessels and their cargoes in time of war. A variety of document types were encountered in these files at the Public Archives of Nova Scotia. The form, content and meaning of the documents examined is discussed and places in the context of the state of accounting practice of the age. Illustrations of the actual documents are provided where possible. The discussion includes a preliminary evaluation of the extent to which accounting information, considering both measurement and verification, may have been relevant to the judgments of the Court.

ASB Conference 2012 Proceedings

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**What Are You Doing Under the Desk?
Business Students' Surreptitious Use of Mobile Devices
in the Classroom**

Patricia Post
University of New Brunswick

This on-going study is investigating attitudes towards, and the use of, mobile devices in the classroom from the perspective of students and instructors in the Faculty of Business Administration at UNB, Fredericton, Canada. Data is being collected through in-class surveys with students, followed by interviews with self-selected instructors. So far, I have learned that ninety-percent of the 122 students surveyed, had a mobile device on or near their person the day they filled out the survey. Students are divided on the issue of incorporating mobile devices into course work: some argue that mobile devices are here to stay and could be a positive addition to the business classroom. Others suggest they should be banned completely. Professors initially view mobile devices as detracting from student learning, however, they are “open” to suggestions and would be willing to attend a workshop on the topic. Participants are in agreement that instructors should formulate individual mobile device policies and include them in the course outline along with sanctions for any infractions of that policy. As a result of reviewing the results of the student survey, instructors are considering that they should re-think their classroom policy regarding mobile-devices and would go so far as to “think about” acquiring new pedagogical approaches to meet the demands of future 'mobile' generations.

**Texting as a Discussion and Learning Technology
in Higher Education Classrooms**

Lorn Sheehan
Binod Sundararajan
Sarah Gilbert
Dalhousie University

We describe a study on the use of texting to facilitate classroom discussions and student engagement. Results indicate an innate preference for face-to-face discussions, a reluctant acceptance of instant messenger communication for class discussions and a clear reticence for using texting as a discussion tool in the classroom. There appears to be some support for the idea of using texting to discuss course material, communicate better with teammates and helping to focus on task. The findings from this research can be used to explore the use of an additional dimension of learning in school and university classrooms.

Lessons in Communicating Bad News Messages: An Evaluation of Existing Models

Valerie Creelman
Saint Mary's University

How to write negative or bad news messages effectively is a topic that continues to spark debate among business communication educators and researchers. Even where business communications textbooks emphasize the importance of context and audience analysis to determine whether to adopt a direct or indirect arrangement when expressing bad news, many still favour an indirect approach. In examining 50 years of negative news research, this paper highlights the major themes that continue to influence the debate as educators question existing models for addressing this rhetorically complex message genre.

“You Can’t Always Get What You Want”: Student Suggestions for Improving a Business Communications Course

Karen Grandy
Saint Mary's University

This paper examines the recommendations of students in an undergraduate business communications course on what elements of the course to retain and what to change. I hope the presentation will prompt discussion of how business communications instructors might respond to and make best use of differences in our own perception and expectations of our courses and those of our students.

Asian Communication Styles: A Suggested Theory

Nancy Chesworth
Mount Saint Vincent University

Westerners conducting business with Asians seldom consider the basis of their communication. Many books, training programs, and web-sites focus on the 'do's and don'ts'. This is useful information in terms of avoiding rude or insulting behaviours. However, unless one understands that Asians communicate differently from those raised in the other parts of the world, ultimately communication will be more time consuming, riskier and less effective than if an understanding of the communication differences exists.

The human trait, by which we tend to assume that others think as we do and have the same information and knowledge, is an aspect of most business communication. Westerners, raised to be direct in communication, have difficulty understanding the communication styles of those raised in other cultures. This paper proposes a means of understanding Asian communication styles and posits a theory, built on previous work by the author, that will it is hoped, help to demystify the communication process used among Asians.

Engagement vs Indifference: Are professors inadvertently undermining student integrity in self-and-peer-evaluations?

Jill Manderson
Binod Sundararajan
Dalhousie University
Malavaka Sundararajan
University of North Carolina

Self-and-peer evaluations are commonly used as part of the grade for university assignments that include group work. While everyone does not agree on their efficacy, most would not see them as actually doing harm to the integrity of the student. However, when about a third of the evaluations are submitted with perfect scores across the board it begs the question of whether professors are inadvertently undermining student integrity by normalizing deceit.

ASB Conference 2012 Proceedings

Business History Stream

Dalhousie University

28-30 September 2012

ASB 2012
Halifax, Nova Scotia

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Visualizing the ASB Actor-Network: A Management Scholarship Training Camp

This paper explores the sociology of management knowledge through a case study of the Atlantic Schools of Business conference. Drawing on actor-network theory and social network analysis, we construct a graph of relationships within this conference and use it to “browse” through traces of the micro-processes that underpin knowledge production. We discover that the conference acts as a venue where new researchers take to the field, returning players try out some new moves, and everyone on the team becomes socialized.

Introduction

It is common to speak about “knowledge production” as if scholars were working in gold mines. This positivist view is of a three-step process: prospecting for hypotheses, methodically unearthing pre-existing facts, and then staking/defending knowledge claims. In this way, scholarship could easily be an “every *man* for *himself*” rush into the wilds of society.

Alternate perspectives have recast knowledge production as socially-embedded political action, rather than an objective process of discovery (Kuhn 1962). Burrell and Morgan's (1979) important critique of management scholarship pointed to the dominance of the positivist view in organizational studies. This spurred considerable interest in the epistemology and ontology of management research. And the so-called “historic turn” has since led to an increasing interest in the sociology of management knowledge (Durepos and Mills 2012).

This paper contributes to our understanding of the micro-processes by which management knowledge is socially-constructed. In particular, it explores the Atlantic Schools of Business (ASB) conference as an actor-network (Latour 2005; Law 1994) engaged in knowledge production. We begin with an overview of various ASB histories. Then we follow Latour et al (Forthcoming) in using social network analysis (SNA) software to visualize the ASB actor-network. This leads to an exploration of ‘knowledge’ as a social process.

The ASB: Management Knowledge Bush-League?

The Atlantic Schools of Business is the only regional management conference in Canada, and one of the longest standing conferences of business scholars in the country (Mills 2005). What is remarkable about the ASB is not only that it has been convened annually since 1970, but that this recurred for 35 years without any formal organizational structure. For each of those years, the eleven business schools in Atlantic Canada “took turns” hosting the conference on an informal rotational basis. Thus, its precarious existence hinged on volunteers, particularly hosts/conference chairs, area chairs, and reviewers.

In their examination of the ASB, Long, Pyper and Rostis (2008) argued that perceived organizational crisis led, isomorphically, to the formalization of an executive committee in 2005. Then in 2006, PhD students at Saint Mary’s University began writing ‘histories’ and/or narrative accounts of the ASB. Most helpful to this paper is the work of Durepos (2006), MacAulay, Mills, and Durepos (2008), and Hartt (2009) on ANT and the ASB; Campbell (2007) on scholars’ curricula vitarum (CVs); Murray (2007) on doctoral students’ identity construction; McLaren and Mills (2008) on awards discourse; and Barragan and Mills (2008) on the conference’s social construction.

Amid these accounts of the social construction of ASB over time are many rich narratives about the conference’s significance (or lack thereof) to management scholarship. One of the researchers interviewed by McLaren and Mills (2008) framed the conference this way:

Well, it’s nice to win an award but it’s, like, if I won an award... if I won an ASB award it really wouldn’t mean much to me because, you know, I mean the quality of papers generally at ASB is not terribly high (p. 313).

This theme of illegitimacy permeates the ASB accounts. Barragan and Mills (2008) interviewed an ASB participant who likened the conference to an academic “farm team”:

It’s like... you’re trying to make the NHL, it’s your goal to be a professional hockey player and you can’t make it so you play in the farm leagues. If you don’t have to play in the farm leagues, and you can get to the NHL, you’re going to skip those farm leagues (p. 9).

Meanwhile, more extreme skeptics have characterised the ASB as something closer to baseball’s “bush-leagues” (that is to say, it is sub-standard to the point of embarrassment). Due to the alleged low-quality of the conference, one business school Dean is said to have suggested that “god forbid” professors send papers to the ASB (Barragan and Mills 2008). Interestingly, Campbell (2007) found that many tenured faculty do present papers at the conference, but make no mention of this in their CVs.

“True believers” in the ASB have justified presenting research at the conference based on the feedback they receive (Barragan and Mills 2008). Many of the ASB studies have noted the value of this feedback to the career development of students and junior faculty. The conference has been characterized as “friendly” and “developmental” (McLaren and Mills 2008, p. 312), a venue for “junior scholars establishing their practice and academic record” (Campbell 2007, p. 40), and

“an environment in which junior academics can begin to practice their roles” (Murray 2007, p. 54).

In the terminology of actor-network theory, these true believers are the human actors who have become “enrolled” (Callon 1986) in the ASB. The process of enrollment (with the prerequisite interest work) is the focus for this paper. We will not only explore how human actors have become enrolled in this network, but also how the conference has become enrolled as an actor in those individuals’ networks.

Of course, we acknowledge that our exploration of the ASB actor-network is a function of our own “interessement” (Callon 1986). The first author of this paper is a PhD student who presented at ASB in 2011. He is using this paper to explore his interests in post-structural approaches to social network analysis. The paper is also strongly influenced by the second author’s work to enroll the first author in the ASB network and in actor-network theory. The second author is among those that (Durepos 2006) describes as,

various ASB enrolled faculty members at SMU [who have] continued to perform interest work on behalf of the ASB network, sharing their thoughts on the valuable nature of a small and local conference which could provide incoming PhD students a great venue to gain experience on presenting research (p. 116).

Therefore, this paper is simultaneously examining the ASB’s role in the production of management knowledge, and attempting to use the ASB in the production of that knowledge.

Visualizing Actor-Networks

Actor-network theory (ANT) is a research approach that focuses on how relationships of actors and non-actors (e.g., computers) construct scientific knowledge (Callon, Law, and Rip 1986; Law 1994; Law and Hassard 1999; Latour 2005, 1987; Latour and Woolgar 1986). ANT scholars appreciate the complexity of the social. They understand that social ordering is the result of heterogeneous networks: human and nonhuman actors that have enrolled other actors into their cause. An “actor” can be any entity with the capacity to act upon another (Law 1986). When many of these entities begin to act as one, their network is said to become punctuated as a black box (Durepos and Mills 2012, p. 103-105). That is to say, the network becomes an actor.

MacAulay, Mills, and Durepos (2008) discuss the process by which the ASB has become black-boxed. They seek to “unravel the black boxed entity of ASB” (MacAulay, Mills, and Durepos 2008, p. 1; see also Durepos, 2006 and Hartt, 2009). The challenge, as with any complex actor-network, is the sheer volume of actors that emerge in this unravelling.

When it is difficult to access the list of all actors in a particular network, the tendency is to continue treating that network as a black-box. In this way, the ASB could easily be written-off as “yet another academic conference.” But every actor-network is a “sui generis entity” (Latour et al. Forthcoming): a one-of-a-kind. To understand this, we must open the black-box and deploy the network. We must attempt to describe the countless bits and pieces (Law and Hassard 1999) that have come to constitute the ASB. ANT tells us to do this by following the traces left by actors, but it “does not tell anyone the shape that is to be drawn” (Latour 1999, p. 21).

Latour et al (Forthcoming) recently highlighted a new option for tracing the “shape” of actor-networks. They join Kilduff and Tsai (2003, p. 121-122) in noting the potential common-ground between ANT and social network analysis (SNA). New network visualization techniques allow us to truly “flatten” (Latour 2005) hierarchies: to browse through data sets without shifting between the micro (“individual”) and macro (“society”) levels. Latour and his colleagues are suggesting that network analysis software could facilitate navigation between flattened “monads”. Following on Gabriel Tarde’s “Monadologie” (Tarde and Alliez 1999), they explain that “ a monad is not a part of a whole, but a point of view on all the other entities taken severally and not as a totality” (Latour et al. Forthcoming, p. 7).

They provide the hypothetical example of a professor named “Hervé C” (p. 3). Before we meet Hervé, his name is but a meaningless string of letters (not unlike the acronym ASB, as it appears to those who have not attended one of the conferences). But once we conduct a web search, we begin to deploy the “Hervé C.” network. We discover his current institutional affiliation, the topics of his research, and the institution at which he completed his PhD. All of these are attributes that define Hervé; they are actors in his network. At any point we can shift our perspective from the “Hervé C.” monad to a monad representing the university where he is but one of many defining actors. In this way, the “network is not a second level added to that of the individual, but exactly the same level differently deployed” (Latour et al. Forthcoming, p. 3).

We deployed the ASB network/monad in an attempt to understand its role in the production of management knowledge. We used Gephi (Gephi Consortium 2012) to graph the affiliations between four types of actors: track chairs, authors, universities, and calls for papers. Durepos (2006) argues that the “calls for papers” are particularly noteworthy actors. When a conference chair writes a call for papers, s/he “delegates” certain responsibilities for attracting conference papers. The call is disseminated, interested authors respond, peer-review ensues, and accepted papers are then inscribed into the conference proceedings. These proceedings are the only trace that remains from much of the ASB’s existence (excepting authors’ CVs, which we will discuss later). These traces are far from complete. In fact, a complete set of proceedings has not been preserved.

We accessed proceedings beginning with the earliest available (ASB 1980)¹ and ending in 2006, when the ASB history project commenced (ASB 2006). Only limited data was available for 1981, 1982, and 1997. We focused specifically on the management tracks of the conference, defined across various years as “Management”, “Organizational Behaviour”, “Human Resource Management/Industrial Relations”, “Policy/General Management”, and “Women in Management/Gender and Diversity.” We recorded each author ($n = 253$), university institution ($n = 24$), and call for proposals ($n = 26$) as a node in the network. We also recorded each track (co)chair ($n = 63$), where those individuals were not already listed as authors. We then created “edges” (linkages) between affiliated authors, chairs, calls and universities (for those universities with more than one affiliated author). Co-authors were linked to one another. In total, 317 nodes and 884 edges were entered into the network analysis software.

¹ As part of the ‘ASB History Project’ proceedings were collected from a number of sources and housed in the Sobey PhD Reading Room. The 1980 proceedings were the earliest to be accessed from a call to business scholars throughout the Atlantic region.

A graph was plotted using Gephi's ForceAtlas2 algorithm. This "pulled" related nodes together, and "pushed" unrelated nodes apart. Nodes were then resized and shaded based on their degree (Scott 2000): with the most connected nodes becoming larger and darker than the least connected nodes. Edges were shaded according to their associated nodes. Figure 1 is the resulting network graph of ASB's management tracks (1980-2006).

We chose to chart edges as curved lines to insert a sense of fluidity to the chart. The greatest risk of our approach is that networks may (unintentionally) be presented as fixed and static. However, we contend that no representation can truly mirror the complexity of social phenomenon (Chia 1996, p. 38). As Latour says, society "is only visible by the traces it leaves" (2005, p. 8).

The ASB Actor-Network

Defining Actors. ANT is considered a 'symmetrical' analysis because no actant (whether human or nonhuman) is superior to another (Latour 1987). We are advised to begin research with a blank canvas, and let the actors speak for themselves. Along the way, we are able to see that actors become stronger when they are able to enroll other actors to suit their interests. This is a common application of social network analysis in organization studies: flattening organizational hierarchy and discovering where 'informal' power resides (Kilduff and Tsai 2003). In SNA language, actors who are well-connected act as hubs within their networks, and accrue many benefits as a result (Kilduff and Tsai 2003, p. 5). In the case of an academic conference, we might expect 'calls for proposals' to be the strongest actors. After all, they are commonly seen as the actant that encourages paper submissions. However, our analysis reveals a much more central actor in the ASB management tracks: Saint Mary's University (SMU).

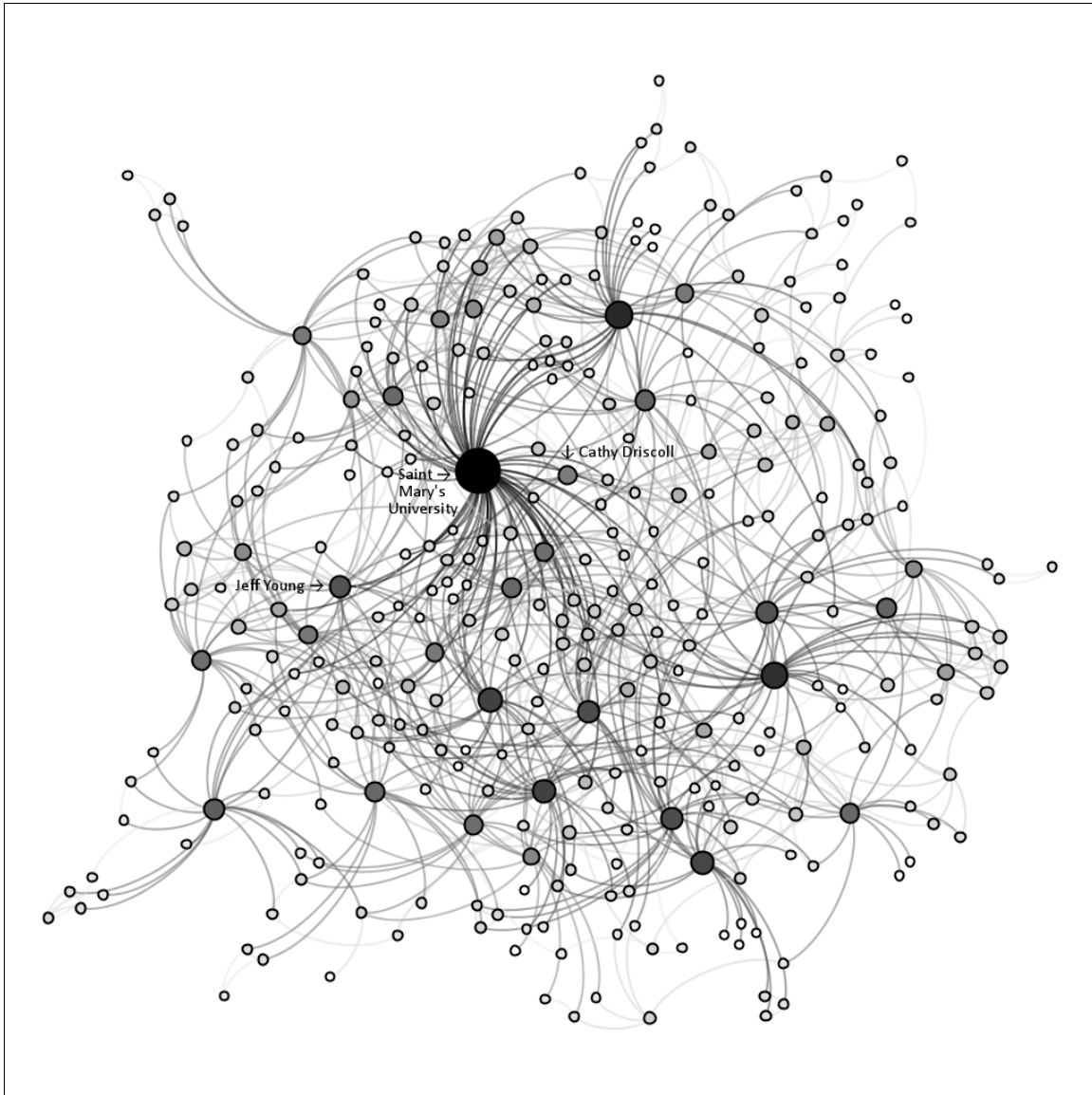
Although SMU is but one of 11 institutions involved in hosting ASB conferences, it has a disproportionate number of connections in our network. Saint Mary's is connected to 62 authors in our graph. This is partly explained by the number of student authors who are identified in connection with SMU. This university is home to the only PhD (management) program in the region (with which the authors of this paper are affiliated). Since the program began in 2000, the majority of its students have presented papers at ASB. But even prior to this PhD program, SMU-affiliated authors were central to the ASB's management tracks. A number of SMU faculty were prolific ASB contributors, and often co-authored with SMU MBA students.

Professor Jeff Young, long-term faculty member of the business department at MSVU, was the single most prolific of these contributors over our 26-year time period. Dr. Young (co)authored a total of 14 papers, collaborated with 8 co-authors, was associated with two universities (SMU and Mount Saint Vincent University), and was a management track chair 5 times.

Figure 1 gives us some indication of the defining role Dr. Young has played in the ASB management area. But to understand the role of ASB in Dr. Young's network, we must shift from examining the ASB monad, to examining the "Jeff Young" monad. A quick web search reveals Dr. Young's condensed CV on the MSVU website (Young 2009). Since 2000, his network appears to have included at least 18 co-authors, 5 journal articles, 8 conference papers (including one at ASB in 2004), and one organizational behaviour textbook. But, as McLaren and Mills (2008) demonstrated, CVs are far from complete pictures of an actors' network (particularly the condensed CVs academics tend to post on their university websites). As noted earlier, it is problematic to suggest that any network can be completely mirrored. This caveat aside, the traces

left in Dr. Young's CV do tell us something about the way he has enrolled in the ASB. It was interesting to see that two of Dr. Young's recent journal publications (Doucette et al. 2001; Doyle and Young 2001) have the same coauthors, and very similar titles, as papers that had been presented at ASB (Doyle and Young 1995; Young et al. 1999). Was he (with his coauthors) using ASB as a testing ground for preliminary research findings?

Figure 1: Network Graph of the ASB Management Tracks (1980-2006).



Enrollment

Jeff Young is one of many recurring authors who could be considered ‘enrolled’ in the ASB management area. Table 1 lists those individuals with five or more papers in the ASB proceedings.

Table 1
Authors with five or more papers in ASB proceedings (management tracks), 1980-2006

Name	University Affiliation(s)	Papers
Jeff Young	SMU, MSVU	14
Cathy Driscoll*	Queen’s, SMU	11
Hari Das	SMU	11
Albert Mills	SMU	8
Daniel Coleman	UNB	8
Terry Wagar	SMU	7
André de Carufel	Ottawa	6
Elizabeth Gilbert	UNB	6
Kelly Dye*	SMU, Acadia	6
Patricia Fitzgerald	SMU	6
Barry Boothman	UNB	5
Barry Wright*	Queen’s, St. F.X.	5
Gregory Irving*	Western, UNBSJ	5
Jim Grant*	NSTU, SMU	5
Shripad Pendse	SMU	5

** indicates individuals who first appeared in the proceedings when they were students.*

Our data include some traces of interest work by a number of these actors. In particular, Hari Das and Albert Mills authored multiple papers with students. The traces suggest these faculty were working to enroll students in the ASB network, and thereby in the world of academic knowledge production.

A total of 40 students were identified from among the authors in our data. Some students were evident from an explicit declaration after their name. However, this did not become common practice at the conference until the later years of our study period. It was also possible to identify students from the shifts in their institutional affiliations. Individuals who were associated with various PhD-granting universities also appeared, in later years, to be associated with other institutions. Brief web searches were used to locate these individuals’ current profiles and confirm their places of study.

Twenty-one of the students that were identified were affiliated with the Sobey PhD program at SMU (Sobey School of Business 2011). Other doctoral students participating in ASB’s management tracks were affiliated with Western, Queens, York, and Guelph. Many of the network’s most deeply enrolled actors began submitting papers as students. These individuals are labelled with an asterisk in Table 1. Although only about 11% of human actors were confirmed as students, many of these seem to play a significant role in the ASB network.

The most notable student actor in the network is also one of the most connected human actors overall (16 edges). Cathy Driscoll’s earliest papers in the proceedings (ASB 1991) were written as a doctoral student at Queen’s University. Her six co-author connections at the ASB include

two individuals who were also Queen's PhD students, two with the family name Driscoll (affiliated with University of Calgary and State University of New York at Cortland), and one doctoral student from SMU (where Dr. Driscoll is has served on the faculty since 1993). Has Dr. Driscoll been involved in interest work on behalf of the ASB?

As with Dr. Young, we shifted our focus from the ASB monad to the "Cathy Driscoll" monad. Dr. Driscoll is currently a full-professor at SMU, and provides a long-form CV via the university website (Driscoll 2012). The document lists 19 journal articles, 4 book chapters, and 53 conference papers/presentations. Twenty-one of these conference papers and presentations are from the ASB. Thirty-nine co-authors are listed, 13 of whom were also enrolled in the ASB management track during our study period. What is most interesting is the way that a number of ASB papers can be seen to "evolve" across the CV. For example, research on the natural environment as a "stakeholder" is presented at an ASB conference (Driscoll 1998), the American Management Association Meetings (Driscoll and Starik 2001), the Canadian Society for the Study of Practical Ethics conference (Driscoll and Starik 2003), and then published in the *Journal of Business Ethics* (Driscoll and Starik 2004). Finally, Dr. Driscoll and her coauthor published an expanded version of their work as a book chapter (Driscoll and Starik 2008).

Some of Dr. Driscoll's other research takes a less circuitous route from ASB to a journal. For example, a critique on the marketing of university education was presented at ASB (Wicks and Driscoll 1997), and then published a year later in *The Journal of Education for Business* (Driscoll and Wicks 1998). A case study on small community stakeholders won a best paper award at ASB (Mullally and Driscoll 2010a) and was published the same year in *The Workplace Review* (Mullally and Driscoll 2010b). All of these connections among actors in the "Cathy Driscoll" network could be visualized in the same way as our graph of the ASB network. We could fully deploy and explore another sui generis entity.

By deploying the "Cathy Driscoll" network, we have begun to see the ASB conference as an actor. It appears as if the ASB conference first acted as a venue for Dr. Driscoll's early career publishing. Later in her career, it became a venue for preliminary research and co-authorship with students. Meanwhile, a social interest is also suggested by the coauthors that appear on some of her ASB papers. Dr. Driscoll has clearly become enrolled in the ASB network. The ASB conference has also clearly become enrolled in her network. It is unlikely that she would speak of this conference as a "farm team" or "bush-league."

A Brand-New Ball Game

Some of the micro-dynamics of knowledge production have been revealed as we browsed between monads: from visualizing the ASB monad, to browsing CVs for the "Jeff Young" and "Cathy Driscoll" monads. As we have shown, the ASB is defined by a composition of actors. The ASB persists not because it eventually became a 'formal organization'. It persists because many actors contribute(d) to its durability. In turn, the ASB became an actor within each author's network. In fact, we have seen that the ASB has been a defining actor in some academic careers. Rather than a second-rate "bush league," the ASB is starting to look more like a regional training camp. It is a place where new players take to the field, returning players try out some new moves, and everyone on the team becomes socialized.

Setting aside the gold mining and baseball metaphors we have used thus far, we propose that the production of management knowledge might be more like astrophysics than any management scholar would care to admit. We study organizations from either incredibly close or at a great distance, and make tidy distinctions between the micro (individual) and macro (organization/society) levels. However, as Latour has said, this contrast is merely a function of,

where the observer is placed and of the number of entities they are considering at once. The gap between overall structure and underlying components is the symptom of a lack of information: the elements are too numerous, their exact whereabouts are unknown, there exist too many hiatus in their trajectories, and the ways in which they intermingle has not been grasped (Latour 2010, p. 146)

The alternative is to focus our attention on flat monads. Our network graph of the ASB (Figure 1) looks something like a stellar nebula photograph. We recognize that it is a weak two-dimensional rendering. It is far from a complete picture of the network. However, it is a starting-point from which we were able to navigate to complementary perspectives. Latour et al (Forthcoming) argue that,

any thread may be chosen as our departing point [...]: a researcher, a paper, a university, a concept or keyword. Each of them is equally a 'part' and a 'whole', that is, a monad (or an actor-network). In other words, each entity is entitled to have its own curriculum vitae, that is, its own trajectory through successive attributes (Latour et al. Forthcoming).

In this way, the ASB is part of every participant's 'curriculum vitae', and every author is a part of the ASB's 'proceedings'. Actors are defined by their networks (Law and Hassard 1999), and networks are defined by their actors (Latour et al. Forthcoming). Amid this complexity, digital data sets and network visualization techniques become telescopes for studying the social.

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ASB Conference 2012 Proceedings

Case Track

Dalhousie University

28-30 September 2012

If We Build It They Will Come: The Role of Governance in Expansion Decisions at Crandall University

Robert MacDonald
Heather Steeves
Crandall University

During the first decade of the 21st Century Crandall University, a private Christian liberal arts university in Moncton, NB, had experienced significant growth in terms of enrolment and governance structure. This case examines the dilemma faced by one member of the University's Board of Governors as he seeks to determine how to deal with decisions made by the Board that he believes are not in keeping with the requirements of sound policy governance. The narrative traces the history of the adoption of the Carver model at the University, and examines the role played by the Board in a critical capital expansion decision in 2010. The reader is invited to consider the roles and responsibilities of board members both corporately and individually, and to evaluate the difference between fulfilling the mandate to govern and meddling in the affairs of management.

Tebow versus Manning: Showdown in the Mile High City

Robert MacDonald
Heather Steeves
Tommy Wood
Crandall University

Tebow versus Manning: Showdown in the Mile High City examines the challenges involved in determining the "value" of a quarterback in the National Football League. In 2011, the Denver Broncos were swept by "Tebowmania" during their attempt to secure a berth in the Super Bowl as quarterback Tim Tebow consistently led the team to come-from-behind victories. Now in March 2012 the Broncos' CEO and VP have the option to sign a new quarterback—2006 Super Bowl Champion and four-time league MVP Peyton Manning, but at a considerably greater cost than Tebow. The reader is invited to consider issues of individual performance and the dynamics of a professional sports league in seeking to answer the question: how much is a good quarterback worth?

Leader Interactive: Sport Leader and Fitness Leader Product Launches

Dan Shaw, Dalhousie University

In 2010 Leader Interactive is a start-up interactive web-based software company focused on the health and sport/fitness markets. The case follows founder Travis McDonough, a serial health and fitness entrepreneur, as he tries to manage the growth of his portfolio of companies, and focuses on sales management themes with regards to the firm. Major decisions must be made: should he focus on the direct or indirect sales channel? How should his sales organization be structured? Should he consider licensing the products to distributors? What kind of talent must be hired? What resources and infrastructure will be needed? The reader is invited to put on the shoes of a dynamic young leader, and deal with significant entrepreneurial and sales management challenges.

ASB Conference 2012 Proceedings

Entrepreneurship Stream

Dalhousie University

28-30 September 2012

Influence of Venture Capital Syndication on Governance and Performance of New Ventures

The research examines the effectiveness of governance systems in venture capital (VC)-backed technology-based new ventures that are not yet at the initial public offering stage. The novel study from 98 VC-backed technology-based new ventures examines how the role of Founder-CEO and venture performance varies in venture capital syndicated new ventures. Strategic innovation enables the new ventures to position their products differently from their competition and achieve strategic financial rewards, which compensates the investors and founders for their willingness to take risks. The research finds that VC-Syndication results in more Founder-CEO succession than solo VC new ventures. Additionally, foreign VC-Syndication encompasses more Professional-CEOs than domestic VC-Syndication. Consistent with our theoretical framework of VC-Syndication and the involvement of foreign venture capitalists, not only results in changing the CEO role, but also influences the innovative and financial performance. Changing the Founder-CEO reflects the strategic challenges new ventures face in their development. The results are consistent with the assumption that governance factors are important tools used to provide resources and capabilities, while being involved in mitigating agency risks associated with venture capital involvement in new ventures, and reflect positively on new venture performance.

Introduction

The Organisation for Economic Co-operation and Development (OECD 1996) argues that the financing of entrepreneurship and innovative ideas will facilitate economic growth and the competitive advantage of nations in the 21st century. The small, growth-oriented, technology-based start-up companies contribute disproportionately to innovation and economic growth (World Bank, 2004; Canada, 2006). The primary source of capital for these companies is venture capital, and venture capital facilitates the success of firms that eventually list on stock exchanges. In the 1983-1992 period, while venture firms averaged less than 3 percent of corporate research and development, they were nevertheless responsible for more than 8 percent of industrial innovation in the US (Kortum & Lerner, 2000). A widely held perception is that entrepreneurial companies are not able to raise all the capital they need and that good companies are not getting funded. In theory, one might expect such a 'capital gap' because investment in entrepreneurial companies, not listed on stock exchanges, is typically highly illiquid and riskier than most other investments, due to information asymmetries and the nascent technologies such firms are developing.

Technology-based new ventures (TBNV) can access human capital, social capital, and other resources, by finding venture capital (VC). This requires the venture to sell a part of their equity in the venture, which results in the formation of a new partnership. The new partner will put specific controls on the management of the business even though they will rarely participate in the day-to-day operations. There are times that more than one VC would be involved in a venture, or even a foreign VC might be present. The relationship of co-investing jointly by venture capitalists in new ventures is VC syndication (Wilson, 1968). Syndication enables better and more informed investment decisions (Sah & Stiglitz, 1996), and mitigates the hold-up problem inherent with a single supplier of capital (Rajan, 1992; Hooks & Opler, 1993). Venture capital, according to the Webster's dictionary, is capital invested or available for investment in the ownership element of new or fresh enterprise.

Hypotheses Development

Venture Capital Syndication's Impact on Governance

A key influence of venture capital syndication, when they get involved in new ventures, is going to be in terms of changes they exert on the governance of their portfolio company. By changes to governance, in this research, the focus is whether the founder retains the CEO position or is replaced by a Professional-CEO, who the venture capitalists bring in to run the venture. The Founder-CEO succession would depend mainly on how the founder is performing and if the investors have confidence that the right individual is in place to continue the venture along the development cycle. Both the VCs and founder would like to be in a position to demonstrate their power by influencing the CEO position. For example, the syndicating venture capitalists might be in a position to attract a Professional-CEO with the knowledge of business areas such as marketing and sales, finance, operations, and specific industry sectors that most stakeholders agree that this individual would be appropriate to lead the venture moving forward.

Prior research indicated that venture capital syndication drove independent boards (i.e., more involvement by individuals outside the venture, by drawing on agency theory to mitigate the associated risk (Filatotchev et al., 2006). The main reason for this was due to the higher risks associated with ventures involving venture capital syndication as compared to ventures involving a solo venture capitalist (Brander et al., 2002). Baker and Gompers (1999) found that venture capitalists simultaneously attempt to enhance the incentive effects for the CEO while reducing their equity holdings, which mitigates the negative aspects of control that comes with higher levels of Founder-CEO ownership. Baker and Gompers (2003) found that venture capitalists have more board members that are independent and fewer directors who are insiders. The board is used as a tool by the investors to monitor and control the CEO, the top management team (Barney et al., 1989; Gompers, 1995), and particularly the founders, due to their equity ownership. Filatotchev et al. (2006) found that IPO ventures that were syndicated by venture capitalists were more likely to develop independent boards. Researchers have mainly studied IPO ventures, due to the lack of data, and by mainly considering ventures that went public the research suffers from 'survivor bias' (Stuart et al., 1999; Higgins & Gulati, 2003). This is surprising, given the importance of TBNVs that Clarysse et al. (2007) points out. For example, when a venture capitalist is interested in a new venture, but feels that they would rather share the financial risk (Lockett & Wright, 2001), particularly due to the bursting of the dot-com bubble and the current financial crises, that forces venture capitalists to syndicate, while giving them an opportunity to also invest in other portfolio companies (Cumming, 2003; Zacharakis, 2002) or save the funds to make it available for their portfolio companies in the next financing round.

Given the need to perform many different tasks when trying to grow the new venture, we argue that the founder's breadth of resources and capabilities begins to hinder the development of the venture. If individual venture capitalists' funds are considered smart money, due their access to resources, this would naturally increase in scenarios where capitalists syndicate. Thus, the resource and capabilities strapped founder would work with the syndicating investors to identify a replacement by a Professional-CEO, and this would be more likely in syndicated venture capitalist investments, due to their access to a greater pool of resources, as compared to solo VC investment.

Hypothesis 1a: Founder-CEO succession in VC-Backed technology-based new ventures will be more positively associated with VC-Syndication than solo VC backed.

In syndication, when foreign venture capitalists get involved, they might have a different vision for the TBNV, from what the domestic venture capitalist had in mind. The new vision, based on the foreign venture capitalists' understanding of their own market opportunities for the venture, may create serious agency problems between both the principal-agent and principal-principal (Young et al., 2008) members of the syndication.

The lower the level of co-operation among syndicate members the greater the levels of risk, and higher the associated agency costs. The agency costs may arise due to the diverse objectives of the syndicate members and the time-consuming nature of coordination (Filatotchev et al., 2006). In this principal-principal relationship, the agency problem is due to the failure of the controlling shareholders and their opportunistic behavior (Shleifer & Vishny, 1997).

The implications, due to the rapid growth in the US venture capital market, have led venture capital firms to look increasingly at alternatives abroad. This expansion has consequences on both the venture's governance and performance factors. Black and Gilson (1998) argue that the key source of the US competitive advantage in venture capital is the existence of a robust IPO market. Venture capitalists can commit to transfer control back to the entrepreneur when a public equity market for new issues exists. This commitment device is unavailable in economies dominated by banks, such as Germany and Japan. These arguments, however, have less credibility in light of the events of the past few years. There has been a surge in venture capital investment, particularly relating to the internet, in a wide variety of nations across Asia, Europe, and the Americas. While local groups (many recently established) have made some of these investments, much of the activity has been driven by US based organizations. In Canada, there has been a decrease in the investment activity by domestic venture capitalists, while the involvement of US based venture capitalists is at record levels (Thomson Financial, 2008).

Jeng and Wells (2000) in a pioneering study examine the factors that influence venture capital fundraising in 21 countries. They find that the strength of the IPO market is an important factor in the determinant of venture capital commitments, echoing the conclusions of Black and Gilson. Jeng and Wells find, however, that the IPO market does not seem to influence commitments to early-stage funds as much as later-stage ones. While this work represents an important initial step, a significant amount of research exploring the involvement of venture capitalists remains uncovered.

The monitoring, governance and value adding practices are different in different parts of the world (Wright et al., 2002; Bruton et al., 2005; Pruthi et al., 2003), and venture capitalists

understand these differences. The foreign venture capitalists can bring benefits regarding the internationalization of new ventures (Mäkelä & Maula, 2006, 2008), and would be key drivers for both the entrepreneur and the domestic investors courting them. Previous studies of venture capitalists monitoring and providing a value-add involvement has not distinguished the behavior of domestic from foreign venture capitalists within a particular market. Given the recent development of foreign venture capital investment, this is an important gap in the literature (Mäkelä & Maula 2006; Wright et al. 2005).

The agency problem is further enhanced between the foreign and domestic members of the syndication, due to their cultural differences. We anticipate that in a setup where a foreign venture capitalist is part of the syndication, from an agency theory perspective the board would be more independent, by further reducing founders as compared to domestic syndication. It implies that the founder would not be the CEO of the venture (Daily & Dalton, 1993); more directors that are independent would be on the board; and there would be less CEO duality (Hellmann & Puri, 2002; Baker & Gompers, 2004). A foreign venture capital syndicated investment would enhance board independence by replacing founders, such that they would be in a position to further increase their monitoring and resource providing capabilities that would have otherwise not been possible for the venture to be competitive, when compared to domestic syndication.

The hypothesis developed with the framework, where Founder-CEO succession is compared when foreign venture capitalists are involved in the syndication, as compared to domestic syndication. Therefore:

Hypothesis 1b: Founder-CEO succession in VC-Backed technology-based new ventures will be more positively associated with foreign VC-Syndication than domestic VC Syndication.

VC Governance and Performance

In this section, the direct relationships between venture capital syndication and venture performance are considered. Venture capital firms are involved in risky markets and therefore expect a higher return (Brophy & Gunter, 1988). As the syndicated investments are even more risky, and the associated returns are expected to be even higher. Bygrave (1989) as well as Chiampou and Kallet (1989) found that venture capital funds provide returns in excess of 15% per annum. The study by Huntsman and Hoban (1990) found that on average the returns were 18.9% per year. The ventures that go public produce higher returns for the venture capitalists (Gompers, 1995). The VCs that invest in the early seed stage require 65-70% return, and the VCs that invest in the late exit stage expect 25-35% return for their investment (Ruhnka & Young, 1991).

The research on VC syndication and its performance implications is a new area of investigation and this study would compare the performance of syndicated verses solo VC-backed investments in TBNV. Venture capitalists syndicate to reduce their investment risk (Brander et al., 2002), therefore since TBNVs are highly risky there is an expectation that these investments would produce much higher returns for the investors. The investment members of the syndication would be carefully monitoring their investment, while also providing their resources to ensure that the highly risky entrepreneurial new ventures are performing well.

The research builds on previous research done on IPO ventures, where the performance implication in a syndicated relationship was studied by Sorenson and Stuart (2001). They

examined syndication and the spatial distribution of US venture capital investments. Syndication networks diffuse information across these boundaries, and expand the spatial radius of exchange. Venture capitalists that build axial positions in the syndication network invest more frequently in spatially distant companies. The position in the syndication network also affects the possibilities for establishing new syndication partners. Anand and Piskorski (2001) found that ventures in central positions in the syndication network could establish relationships with other ventures regardless of their financial resources. Further studies by Hochberg et al. (2007) examined the relationship among various venture capital investors in syndicated networks and the performance of the IPO companies in which they invest. Portfolio companies that receive an investment by a venture capital firm that is more central to the industry are more likely to be successful. Bonacich (1987) measure was used to find out how central a venture capital firm is to the entire industry.

The venture capital syndicated ventures should have better innovative and financial performance, as they are associated with much higher risk. The different board mechanisms mitigate the higher risk, and these mechanisms would be required to provide further resources. Pearce and Zahra (1992) suggest that the board is an important mechanism for control over sources of uncertainty in the venture's external environment. Therefore, we would expect that venture capital syndicated ventures would have superior performance as compared to ventures with solo venture capitalists.

There is a direct impact on performance due to venture capital syndication as indicated by previous research, and there are also indirect effects on performance due to Founder-CEO succession. Hence, the theoretical framework predicts that syndicated venture capitalists are going to push for more independent boards making them even more effective to perform their monitoring as well as resource providing function to improve the new venture's strategic performance. The hypotheses focus on the innovative and financial performance of syndicated investments versus solo venture capital investment in TBNV. Therefore:

Hypothesis 2a: Innovative performance in VC-Backed technology-based new ventures is more positively associated with VC-Syndication than solo VC backed.

Hypothesis 2b: Financial performance in VC-Backed technology-based new ventures is more positively associated with VC-Syndication than solo VC backed.

Venture capital firms may invest in foreign countries, even where the agency risks are higher, with the anticipation of much higher returns (Baygan & Freudenberg, 2000). The foreign venture capitalists are aware of the market opportunities in their home market, and provide resources to their portfolio companies in order to help their internationalization in target markets (Johanson & Vahlne, 1990; Kwok & Reeb, 2000). The research expects ventures where foreign venture capitalists are involved in the syndication would have superior performance, as compared to the syndication involving domestic venture capitalists.

Park et al. (2001) found that ventures are dependent on resources for their survival, based on the resource-based view. Ventures that desire to internationalize would need to establish relationships to access resources, and these relationships ensure venture survival and financial benefit. Venture capitalists provide the value-added function to their portfolio ventures (MacMillan et al., 1989; Sapienza et al., 1996), and one can presume that when foreign venture capitalists get involved in the syndication they would be instrumental in providing not only financial support but also very valuable internationalization support for the venture's products. The research stream on internationalization of ventures has largely ignored the role of venture capitalists (McDougall et al., 1994; Oviatt & McDougall, 1994; McDougall & Oviatt, 1996; Oviatt & McDougall, 1997;

Reuber & Fischer, 1997; Shrader et al., 2000; Zahra et al., 2000). The foreign venture capitalists involved in syndication bring important resources to the new venture and aid in the internationalization of the venture's products, which is reflected in the venture's performance. Yli-Renko et al. (2002) showed that new ventures could achieve benefits for their international growth by fostering relationships with ventures in foreign markets.

The main reason for a foreign venture capitalist to get involved in the syndication process is that they see huge potential for the new venture. The foreign venture capitalist would be more active to professionalize the venture by replacing the Founder-CEO and making the board more independent as compared to domestic venture capitalists. Ranft and O'Neill (2001) suggested that having a Founder-CEO is a negative attribute and is further enhanced when a new venture is exploring foreign markets. Similarly, CEO duality is also an undesirable characteristic, and reduces the capabilities of the board to make effective decision (Pearce and Zahra, 1992) particularly in the context of exploring foreign markets.

The theoretical framework predicts that the involvement of foreign venture capitalists in venture capitalist syndication is going to push for more independent boards, making them even more effective to perform their monitoring as well as resource providing function to improve the TBNV's performance. Additionally, the foreign venture capitalists would also push for the professionalization of the new venture, resulting in better performance. The hypotheses focus on the innovative and financial performance of foreign venture capital syndicated investments versus domestic venture capital syndicated investments. Hence:

Hypothesis 2c: Innovative performance in VC-Backed technology-based new ventures is more positively associated with foreign VC-Syndication than domestic VC Syndication.

Hypothesis 2d: Financial performance in VC-Backed technology-based new ventures is more positively associated with foreign VC-Syndication than domestic VC Syndication.

Methods

The empirical research is implemented in two sequential phases: (1) exploratory pre-test qualitative phase, and (2) quantitative phase. The two phases are outlined below:

1) Exploratory Pre-Test Qualitative Phase: This phase was completed in the initial part of the research to first have a better understanding of the entrepreneurial landscape, and also get feedback about the survey instrument. Data has been collected from secondary sources and from exploratory interviews. In total, four semi-structured interviews were conducted with entrepreneurs and venture capitalists.

Because the focus of the research was on technology-based new ventures, many of the organisations interviewed and networking events were attended that were technology related. The purpose of these exploratory interviews was to have a better understanding of the problem field, thus shaping and informing the study. This stage was absolutely crucial for the formulation of the research question and for the definition of the overall research design, and formed the basis of the quantitative work. Although the bulk of this phase was carried out for my own appreciation of the entrepreneurial ecosystem and get early feedback on the survey tool that was going to be critical for the research moving forward. There was a need for conducting further interviews to have a better understanding of the results from the quantitative phase.

2) Quantitative Phase: The second phase is the empirical research and it took three times longer than planned. The quantitative phase of the study was based on a survey and the missing data was obtained from the company website or VCReporter. The survey instrument was prepared based on the exploratory pre-test interviews, combined with an extensive review of the literature.

Firms were sampled from the VCReporter database and only technology-based new ventures in Canada were selected. The research has used the terminology “technology-based” which was consistent with the database. The completed surveys from the CEO of the technology-based new ventures were obtained. This was an important stage of the research and yielded 98 usable responses which were used for empirically testing the hypotheses, to examine the relationship between the venture capitalists and the founders.

Survey

Thomson Financial's VCReporter database was extensively used in the research. VCReporter is Canada's only online venture capital database that has information on the deals, the players, the companies, the investment funds and individual investors. Similar sources have been used widely in earlier research on venture capital (e.g. Bygrave, 1987, 1988, 1989; Gompers, 1995; Gompers & Lerner, 1998; Kelley & Spinelli, 2001; Kortum & Lerner, 2000; Lerner, 1994; Sorenson & Stuart, 2001). The database provided access to 19,334 people associated with 11,134 companies, and deals involving 1,577 investors. The database was analyzed and out of the 11,134 companies only 1,209 were technology-based and the database had multiple entries for several of the ventures for the different stages they got funding (i.e. had multiple entries for the same company), out of which email addresses of 411 CEOs of technology-based companies were identified.

The primary source of data in this research is an online survey administered to the CEOs, chairmen or founders of the whole population of the identified technology-based new firms that are pre-IPO new ventures. The survey is described in the following sections.

In the first email request to complete the survey, 197 email addresses failed and only 214 got through. An analysis was conducted on the reasons why only 52% of the email was successful and it was found that the main reason for failure was that these companies were no longer around (due to failure or M&A), the CEO was not at the company, and a small number of companies were now registered under a new name. For the companies that had changed their name, I was able to easily change the email address by using the new company domain name and resend the email (3 companies). From the 217 companies that got the email only one responded, a reminder was sent after two weeks that resulted in five additional responses (a total of 6) and a month later a final reminder was sent that resulted in an additional two responses (total of 8). The next strategy was to call the companies one by one and in most cases I had to leave voicemails asking them to complete the survey. This resulted in a total of 27 responses.

Canada's Venture Capital & Private Equity Association was contacted and they agreed to support my research and contacted all their 211 Venture Capitalists and Private Equity member firms to help with the research. This resulted in 0 Venture Capitalists and Private Equity firms helping with the research and the reason was twofold: first, because most of the partners were on vacation in July and August, and second, that these are very challenging times for the industry and they have much higher priorities than helping with doctoral research.

VCRReporter was used to identify which venture capital firms have been the most active over the last three years and invested in companies at different stages of their life cycle. A total of 139 VC firms were emailed and 57 of the VC firms were then again contacted over the phone. While most of the partners refused to help as they were not comfortable with the CEO of their portfolio company spending time on academic research, 11 VCs did agree to help. These venture capital firms said they were keen to help because the results would be very valuable; I held several meetings with them. The meetings resulted in five partners from VC firms getting actively involved with the research and inviting me to meetings of venture capitalists as well as meetings where venture capitalists would meet entrepreneurs of their portfolio companies. This one-on-one interaction resulted in 162 additional responses, yielding a total of 170 completed responses. Several respondents recommended that it would be wise to create the survey so that it could be easily done on the Smartphone (e.g. BlackBerry). The response rate to the survey was 45%.

The survey instrument used in the present study was a four page questionnaire with a section covering company profile, value-added provided by the venture capital investors, value-added provided by the Board of Directors, the founder's characteristics, the performance of the company. The questionnaire was pre-tested with several CEOs (Fowler, 1993; Spector, 1992). The relevance and clarity of the questions were also checked with several venture capital investors and researchers familiar with the topic area. Because of the need to connect the data to other data, the names of the respondent and investor firms were asked in the questionnaire. This could have reduced the willingness of some potential respondents to answer the questionnaire. However, confidentiality was assured and the interviewed CEOs were provided with a letter from the ethics committee approving the research methodology (it was also made available online). Answering was encouraged by promising a summary of the results in return and also the opportunity to be entered into a draw for a \$500 donation to a registered charity of their choice.

Because the survey was answered by a single key informant, it was important that the respondent be knowledgeable about the operations of the firm (John & Reve, 1982). The survey was sent primarily to CEOs of the target firms based on information obtained from VCRReporter. The database was not accurate as some CEOs were working in a different capacity at the firm. The great majority of the respondents were CEOs of the sample companies (74%).

There were very few missing values in the data and the respondents were contacted to investigate the reasons for the missing values, and details were incorporated. We administrated a follow-up survey two months after the original survey was sent in June 2008 (similar to Litwin, 1995). The follow-up survey was administered to the sample companies CEOs that answered the original survey. The purpose of the survey was to re-test some of the key dependent variables measured in the original survey.

The online questionnaire was sent to 170 CEOs and senior executives that were included in the study from the original survey. Of these, 58 CEOs and senior executives did answer the follow-up survey. This corresponds to a response rate of 34%, which can be considered good given this kind of target audience. The answers to the follow-up questions were strongly and significantly correlated with the original constructs supporting the reliability of the results. The inter-rater reliability between the two responding executives on items used in this chapter was $r=.93$.

Results

Impact on Founder-CEO

In SPSS Binary Logistic Regression was used and by using the BACKWARD: WALD option which is a backward elimination technique that computes the regression equation with all the variables, and then deletes the independent and control variables that are not significant. The procedure stops when there are no variables in the equation that satisfy the removal criteria. In SPSS the regression results presented two models, the initial Model 1 (Step 1) and the final Model 2 (Step 8). The logistic regressions are captured in Table 1.

Table 1: Founder-CEO Binary Logistic Regression

<i>Independent and Control Variables</i>	<i>Model 1</i>	<i>Model 2</i>
Venture Capital Syndication		
Is the new venture syndicated (Syndicated)	-29.243 (6374.353)	-2.936** (0.918)
Does the syndication involve foreign VC (F_vs_D_Syndication)	-3.490 (1.791)	-1.791* (0.830)
Control		
Size of the Board (Board_Size)	-0.732 (1.401)	-
CEO is also the Chairman of the Board (CEO_Chairman)	-0.296 (4.182)	-
Proportion of independent directors on the Board (Outsiders_BoD)	14.740 (24.685)	-
Proportion of the Board with VCs as directors (VC_BoD)	13.152 (24.973)	-
Founder is on the Board (Founder_BoD)	0.559 (3.845)	-
Size of the top management team (Size_TMT)	0.522 (0.402)	-
N	98	98
Model Chi Square	72.102	61.217
Model Chi Square Significance	0.000	0.000
-2 Log Likelihood	30.483	41.369
Cox and Snell R Square	0.623	0.563
Nagelkerke R Square	0.830	0.750
Overall Predictive Accuracy (%)	89.2	85.1

() - is stand. errors; Note: † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

The regression results were consistent with the simpler non-parametric tests for the variables Syndicated ($p < 0.01$), and F_vs_D_Syndication ($p < 0.05$). The binary regression models were evaluated in three different ways. The first method was based on the overall model fit and the use of the log likelihood value, which reflects the likelihood that the data would be observed based on the parameter. A well fitting model has a small value for -2LL (the minimum value for -2LL is 0). The -2LL for our models are far from zero, however, because there is no upper boundary for 2LL it is difficult to make a statement about the meaning of the score. It is more often used to see whether adding additional variables to the model leads to a significant reduction in the 2LL. The difference between the 2LL for two models, in the present study the -2LL equaled 30.483 and 4.369 (for Models 1 and 2), indicating a good model fit. Model chi square values (72.102 and

61.217) also met the standard levels of significance (0.000 and 0.000) at the 0.1 per cent level, indicating that that it is a useful model and a group of independent and control variables were successful in differentiating between the two groups of the dependent variable.

Second, the Cox and Snell R square and Nagelkerke R square are closely related statistics, and basically summarize how much of the variability in the data is successfully explained away by the models. Larger values of these R squares (the Nagelkerke has a maximum value of 1) indicate that your model captures more of the data variability. The Cox and Snell measure of R square equalled 0.623 and 0.563 (for Models 1 and 2), and while the Nagelkerke adjustment raised this measure to 0.830 and 0.750.

Third, the predictive accuracy of the model was evaluated. This approach to model evaluation compares predicted group membership with observed group membership (Pampel, 2000). The percentage of correctly classified cases provides a crude measure of predictive accuracy. In the present case, the models showed high predictive accuracy, correctly predicting 89.2 and 85.1 per cent of the cases.

The variable's correlations are checked in the Table V (at end of paper). The variables in the final Model 2 did not contain variables that would raise questions about multicollinearity in the final model. It is safe to assume that we don't need to worry as the program did not allow a variable to enter the final model if the threshold level for either tolerance or VIF values was crossed, thus affirming the absence of multicollinearity.

Results in Table I (Models 2) showed support for three out of four hypotheses related to Founder-CEO. Hypotheses H1a, and H1b were supported. Hypothesis H1a found support (-2.936, $p < 0.01$) as shown in Model 2 in Table 5-25. The venture capital syndication (Syndicated) was significant and negatively associated with 'Founder-CEO' (Founder_CEO). Therefore, it says that when VC syndication is involved in TBNV they would have a significantly negative impact on the founders' role as the CEO and would likely be replaced by a Professional-CEO.

The study by Filatotchev et al. (2006) as stated in chapter 2 and 3 did state that when venture capitalist syndicate they would likely strive for greater independence. The relationship between syndicated investments and Founder-CEO was negatively related as well as significant.

The Table I shows that based on Model 2 Hypothesis H1b found support (-1.791, $p < 0.05$). The independent variable F_vs_D_Syndication was significant and negatively associated with Founder_CEO. Thus, it says that when foreign VCs are involved in syndication they would have a significantly negative impact on Founder_CEO and the CEO role would be played by a Professional-CEO.

The researchers have shown a deep interest in investigating the movement of venture capitalists into foreign markets (Mäkelä & Maula, 2006, 2008; Wright et al., 2005). Chapters 2 and 3 illustrate the importance of investing this gap, as foreign venture capitalist involvement in syndication would look at driving for replacing the Founder-CEO. Therefore, the relationship between foreign involved syndication was significantly negatively associated with Founder-CEO.

Impact on Performance

In SPSS, Linear Regression was used first with ENTER option, followed by STEPWISE, and finally the BACKWARD option was used. Generally, the STEPWISE option is the most common (Hair et al., 1998), but the BACKWARD method was selected as the option of choice. The backward techniques elimination first computes with all the variables, and then deletes the independent and control variables that are not significant. The procedure stops when there are no variables in the equation that satisfy the removal criteria. Hair et al. (1998) stated that it is a valid regression procedure for researchers and Stel et al. (2003) used the method to establish an 'optimal multiple regression specification' in their study. The regression resulted in six Models and only the significant models that provide the best predictive results were selected (Table 2).

Table 2: Financial Performance Change in Revenue – Linear Regression

<i>Independent and Control Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Venture Capital Syndication				
Is the new venture syndicated (Syndicated)	1.539* (0.771)	1.423† (0.740)	1.177† (0.672)	1.351* (0.632)
Does the syndication involve foreign VC (F_vs_D_Syndication)	1.698** (0.574)	1.631** (0.560)	1.525** (0.543)	1.470** (0.537)
Founder-CEO				
Founder is the CEO (Founder_CEO)	0.399 (0.539)	0.426 (0.535)	-	-
Control				
Size of the Board (Board_Size)	-0.783† (0.394)	-0.780† (0.392)	-0.776† (0.392)	-0.517* (0.208)
CEO is also the Chairman of the Board (CEO_Chairman)	-2.418* (1.168)	-2.414* (1.163)	-2.294* (1.151)	-1.484** (0.499)
Proportion of independent directors on the Board (Outsiders_BoD)	4.623 (5.721)	4.546 (5.698)	4.437 (5.684)	-
Proportion of the Board with VCs as directors (VC_BoD)	8.530 (6.023)	8.597 (5.999)	8.554 (5.986)	4.109* (1.842)
Founder is on the Board (Founder_BoD)	2.031* (0.977)	1.991* (0.971)	1.997* (0.969)	1.324** (0.444)
Size of the top management team (Size_TMT)	-0.060 (0.107)	-	-	-
Constant	-0.094 (1.817)	-0.273 (1.782)	0.103 (1.715)	1.292 (0.785)
N	98	98	98	98
R square	0.200	0.198	0.192	0.186
Adjusted R square	0.119	0.125	0.129	0.133
F Stat	2.451	2.739	3.052	3.474
F Sig	0.015	0.009	0.006	0.004

() - is stand. errors; Note: † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

The R square values for the four models (0.200, 0.198, 0.192, and 0.186, respectively) are indicated in Table 5-29. R Square is the measure of correlation and indicates the proportion of the variance in the criterion variable that is accounted for by our model. It is a measure of how good a prediction of the criterion variable we can make by knowing the predictor variables. However, R square tends to somewhat over-estimate the success of the model when applied to the real world, so an Adjusted R Square value is calculated which takes into account the number of variables in the model and the number of observations (participants) our model is based on. This Adjusted R Square value gives the most useful measure of the success of our model. Thus, as we move from Model 1 to Model 4 the R square goes down (0.200, 0.198, 0.192, and 0.186, respectively) as the variables are removed and so does the adjusted R square (0.119, 0.125, 0.129, and 0.133, respectively). The F statistics for the four final models were also statistically significant at 5% (2.451* for model 1, 2.739** for model 2, 3.052** for model 3, and 3.474** for model 4), which implies that the changes in the independent variables involved made the model more predictive (Hair et al., 1998).

Four coefficients were found to be significant in their impact on Change_Rev: Syndicated (R2 = 0.186, b = 1.351, p < 0.05), F_vs_D_Syndication (R2 = 0.186, b = 1.470, p < 0.01), Board_Size (R2 = 0.186, b = -0.517, p < 0.05), CEO_Chairman (R2 = 0.186, b = -1.484, p < 0.01), VC_BoD (R2 = 0.186, b = 4.109, p < 0.05), and Founder_BoD (R2 = 0.186, b = 1.324, p < 0.01).

The regression resulted in 8 Models and only the significant models that provide the best predictive results were selected (Table 3).

Table 3: Financial Performance Change in Exports – Linear Regression

<i>Independent and Control Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Venture Capital Syndication				
Is the new venture syndicated (Syndicated)	0.328** (0.099)	0.333** (0.097)	0.293*** (0.079)	0.280** (0.078)
Does the syndication involve foreign VC (F_vs_D_Syndication)	0.320*** (0.077)	0.317*** (0.076)	0.302*** (0.072)	0.303*** (0.072)
Founder-CEO				
Founder is the CEO (Founder_CEO)	0.068 (0.091)	0.059 (0.086)	-	-
Control				
Size of the Board (Board_Size)	-	-	-	-
CEO is also the Chairman of the Board (CEO_Chairman)	-0.025 (0.081)	-	-	-
Proportion of independent directors on the Board (Outsiders_BoD)	-	-	-	-
Proportion of the Board with VCs as directors (VC_BoD)	0.743* (0.293)	0.713* (0.275)	0.728** (0.273)	0.816** (0.260)
Founder is on the Board (Founder_BoD)	0.131† (0.066)	0.131* (0.065)	0.131* (0.065)	0.151* (0.063)

Size of the top management team (Size_TMT)	-	-	-	-
Constant	-0.253* (0.120)	-0.253* (0.119)	-0.204* (0.095)	-0.180† (0.092)
N	98	98	98	98
R square	0.410	0.409	0.406	0.399
Adjusted R square	0.364	0.370	0.374	0.373
F Stat	8.935	10.513	12.593	15.450
F Sig	0.000	0.000	0.000	0.000

() - is stand. errors; Note: † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

The R square values for the four models (0.410, 0.409, 0.406 and 0.399, respectively) and the adjusted R square (0.364, 0.370, 0.374, and 0.373, respectively), are indicated in Table 5-30. The F statistics for the four final models were also statistically significant at 0.10% (8.935*** for model 1, 10.513*** for model 2, 12.593*** for model 3, and 15.450*** for model 4), and it shows that the changes in the independent variables involved made the model more predictive (Hair et al., 1998).

Four coefficients were found to be significant in their impact on Change_Export: Syndicated (R2 = 0.399, b = 0.280, p < 0.01), F_vs_D_Syndication (R2 = 0.399, b = 0.303, p < 0.001), VC_BoD (R2 = 0.399, b = 0.816, p < 0.01), and Founder_BoD (R2 = 0.399, b = 0.151, p < 0.05).

The regression resulted in 10 Models and only the significant models that provide the best predictive results were selected (Table 4).

Table 4: Innovative Performance Change in Product – Linear Regression

<i>Independent and Control Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Venture Capital Syndication				
Is the new venture syndicated (Syndicated)	-	-	-	-
Does the syndication involve foreign VC (F_vs_D_Syndication)	-	-	-	-
Founder-CEO				
Founder is the CEO (Founder_CEO)	-	-	-	-
Control				
Size of the Board (Board_Size)	0.310 (0.201)	0.336† (0.198)	0.265 (0.195)	-
CEO is also the Chairman of the Board (CEO_Chairman)	1.543* (0.711)	1.593* (0.708)	1.535* (0.713)	1.269† 0.689
Proportion of independent directors on the Board (Outsiders_BoD)	-	-	-	-
Proportion of the Board with VCs as directors (VC_BoD)	-	-	-	-

Founder is on the Board (Founder_BoD)	-1.120† (0.625)	-1.004 (0.611)	-	-
Size of the top management team (Size_TMT)	0.812*** (0.157)	0.803*** (0.156)	0.817*** (0.158)	0.891*** 0.149
Constant	-4.055** (1.299)	-3.963** (1.293)	-3.965** (1.305)	-2.624 .856
N	98	98	98	98
R square	0.321	0.315	0.295	0.281
Adjusted R square	0.284	0.286	0.273	0.266
F Stat	8.706	10.693	13.121	18.598
F Sig	0.000	0.000	0.000	0.000

() - is stand. errors; Note: † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

The R square values for the four models (0.321, 0.315, 0.295, and 0.281, respectively) and the adjusted R square (0.284, 0.286, 0.273 and 0.266, respectively), indicated in Table 5-31. The F statistics for the four final models were also statistically significant at 0.10% (8.706*** for model 1, 10.693*** for model 2, 13.121*** for model 3, and 18.598*** for model 4), and it demonstrates that the independent variables involved made the model the model more predictive.

Four coefficients were found to be significant in their impact on Change_Prod: CEO_Chairman (R2 = 0.281, b = 1.269, p < 0.10), and Size_TMT (R2 = 0.281, b = 0.891, p < 0.001).

The regression resulted in 8 Models and only the significant models that provide the best predictive results were selected (Table 5).

Table 5: Innovative Performance Change in Patents – Linear Regression

<i>Independent and Control Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Venture Capital Syndication				
Is the new venture syndicated (Syndicated)	-	-	-	-
Does the syndication involve foreign VC (F_vs_D_Syndication)	1.344 (0.851)	1.372 (0.850)	1.499† (0.848)	1.466† (0.844)
Founder-CEO				
Founder is the CEO (Founder_CEO)	0.768 (0.845)	-	-	-
Control				
Size of the Board (Board_Size)	-0.524 (0.329)	-0.669* (0.288)	-0.472† (0.247)	-0.395† (0.215)
CEO is also the Chairman of the Board (CEO_Chairman)	-	-	-	-
Proportion of independent directors on the Board (Outsiders_BoD)	5.085 (4.303)	5.589 (4.263)	-	-

Proportion of the Board with VCs as directors (VC_BoD)	5.274 (4.269)	5.816 (4.223)	1.923 (3.014)	-
Founder is on the Board (Founder_BoD)	2.336* (0.951)	2.578** (0.912)	1.816* (0.706)	1.709* 0.683
Size of the top management team (Size_TMT)	-	-	-	-
Constant	1.808 (2.151)	2.434 (2.035)	4.556*** (1.239)	4.608*** (1.232)
N	98	98	98	98
R square	0.197	0.190	0.175	0.171
Adjusted R square	0.135	0.137	0.130	0.136
F Stat	3.164	3.560	3.898	4.801
F Sig	0.005	0.003	0.003	0.001

() - is stand. errors; Note: † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001

The R square values for the four models (0.197, 0.190, 0.175, and 0.171, respectively) and the adjusted R square (0.135, 0.137, 0.130, and 0.136, respectively) are indicated in Table 5-32. The F statistics for the four final models were also statistically significant at 0.10% (3.164** for model 1, 3.560** for model 2, 3.898** for model 3, and 4.801** for model 4), and it demonstrates that the independent variables involved made the model more predictive.

Four coefficients were found to be significant in their impact on Change_Patents: F_vs_D_Syndication (R2 = 0.171, b = 1.466, p < 0.10), Board_Size (R2 = 0.171, b = -0.395, p < 0.10), and Founder_BoD (R2 = 0.171, b = 1.709, p < 0.01).

The correlation between the variables was checked in Table V. The regression results in the final model for Change_Rev showed that none of the coefficients fell below 0.1 tolerance (min. = 0.441, max. = 0.708) and VIF did not exceed 10 (min. = 1.412, max. = 2.269); Change_Export (min. = 0.805, max. = 0.965) and VIF did not exceed 10 (min. = 1.021, max. = 1.222); Change_Prod (min. = 0.987, max. = 0.987) and VIF did not exceed 10 (min. = 1.013, max. = min. = 1.013); and Change_Patents (min. = 0.776, max. = 0.906) and VIF did not exceed 10 (min. = 1.104, max. = 1.288). In summary none of the coefficients fell below the threshold of 0.1 and VIF figures for none exceeded 10 (Hair et al., 1998). The regress program only let all the variables at the initial state but did not allow variable in the final model that crossed the tolerance or the VIF value, therefore we no longer need to worry about multicollinearity.

Table 2 shows that based on Model 4 Hypothesis H2b found support for Syndicated in terms of Change_Rev (R2 = 0.186, b = 1.351, p < 0.05). Table III shows that Syndicated also found support for Change_Export (R2 = 0.399, b = 0.280, p < 0.01). Therefore, syndication made a positive and significant impact on both Change_Rev and Change_Export.

The research argues that the upward trend in venture capital syndication and presents an argument that VCs syndicate to share knowledge (Bygrave, 1986, 1988) and capabilities (Brander et al., 2002) as well as to mitigate risk the associated financial risk (Lockett and Wright, 2001).

Table II shows that the regression Model 4 for Hypothesis H2d found support for F_vs_D_Syndication in terms of Change_Rev ($R^2 = 0.186$, $b = 1.470$, $p < 0.05$). Additionally, Table 5-30 also shows support for F_vs_D_Syndication in terms of Change_Export ($R^2 = 0.399$, $b = 0.303$, $p < 0.001$). F_vs_D_Syndication where we have syndication involving foreign venture capitalists made a significantly positive and impact on both Change_Rev and Change_Export.

The research argues that the foreign venture capitalists help ventures internationalization into target markets (Johanson & Vahlne, 1990; Kwok & Reeb, 2000), thus have a positive influence on the ventures revenue and export.

Several of the control variables were introduced to examine the governance implications on the TBNVs financial and innovative performance. The controls (Board_Size, CEO_Chairman, VC_BoD, and Founder_BoD) were significantly related to Change_Rev in Model 4, and Change_Export was also related significantly to controls (VC_BoD, and Founder_BoD).

The rationale for including the control variables is drawn from literature to further examine what other factors could have implications on the financial performance of TBNVs. Hellmann and Puri (2002) pointed to the important role that venture capitalist play to professionalize their portfolio ventures. Further Filatotchev et al. (2006) pointed that syndication would drive board independence.

Table VI shows that based on model Hypothesis H2a found no support for Syndicated in terms of Change_Prod. Table IV also found no support for Syndicated in terms of Change_Patents. The results demonstrates that Syndicated dose not influence innovative performance to make the model predictive.

The research argues that syndication would have a positive impact on innovative performance (Sorenson & Stuart, 2001). The logic was that syndication would have a better understanding of the market and strive for greater innovative performance.

Table VI shows that based on model Hypothesis H2a F_vs_D_Syndication found no support for Change_Prod. Table IV found support for F_vs_D_Syndication in terms of Change_Patents ($R^2 = 0.171$, $b = 1.466$, $p < 0.10$). F_vs_D_Syndication did not even enter into the models for Change_Prod showing that it did not make the model more predictive. In the case for Change_Patents it was seen that F_vs_D_Syndication was included until the final model demonstrating that it added to the partial predictability of innovative performance.

The research argues that foreign venture capitalists involved in the syndication will have a positive impact to drive innovative performance further. Yli-Renko et al. (2002) explained that the performance would grow due to a stronger relationship in the foreign market due to the foreign venture capitalists.

Several of the control variables were introduced to examine the governance implications on the TBNVs financial and innovative performance. The controls (Board_Size, CEO_Chairman, and Size_TMT) were significantly related to Change_Prod in the models, and Change_Patents was also related significantly to controls (Board_Size, and Founder_BoD).

The reasoning for including the control variables drawn from literature was to further examine what other factors could have implications on the innovative performance of TBNVs. Again that professionalization of the TBNV as well as the drive for greater board independence would result in greater innovative performance (Hellmann & Puri, 2002; Filatotchev et al., 2006).

Discussion

The quantitative analysis of the 98 TBNV, based on the survey data. First, the descriptive statistics were presented to have a better understanding of the natures of the new ventures, in terms of age, size, location, internationalization, equity financing, VC ownership, and communication with VCs. Second, the descriptive statistics related to key dependent and independent variables were presented for founders' industry experience, founders' entrepreneurial experience, venture capital syndication, foreign involved venture capital syndication, Founder-CEO, change in revenue, change in exports, change in product, and change in patents.

The regression looking at the key governance role found that while both venture capital syndication (Syndicated) and foreign venture capital involvement were likely to result in Founder-CEO (Founder_CEO) succession; the foreign venture capitalists were significantly more likely to result in Founder-CEO (Founder_CEO) succession.

Financial performance when looking at change in revenue (Change_Rev) found it to be significantly increase by venture capital syndication (Syndicated) as well as syndication involves foreign venture capitalists (F_vs_D_Syndication). It also showed that both the size of the board (Board_Size) as well as CEO that was also the venture Chairman (CEO_Chairman) had a significantly detrimental influence on change in revenue (Change_Rev). That being said the both the proportion of the board with VCs as directors (VC_BoD) as well as having founder on the Board (Founder_BoD) had a significantly increase in change in revenue (Change_Rev). The second component of financial performance is the change in exports (Change_Export) which was found to be significantly related to venture capital syndication (Syndicated) as well as syndication involving foreign venture capitalists (F_vs_D_Syndication). It too showed that both the proportion of the board with VCs as directors (VC_BoD) as well as having founder on the Board (Founder_BoD) had a significantly increase in change in exports (Change_Export).

The innovative performance is considered in two components change in product (Change_Prod) and change in patents (Change_Patents). The results showed that both duality i.e. when CEO is also the venture Chairman (CEO_Chairman) as well as the size of the top management team (Size_TMT) significantly increase with the change in products (Change_Prod). Finding no support for the key independent variables for change in product is discussed further in the conclusion chapter. The second component of innovative performance change in patents (Change_Patents) significantly increased due to the involvement of foreign venture capitalists (F_vs_D_Syndication). Further the results showed that size of the board (Board_Size) significantly reduced with the change in patents (Change_Patents), while the presence of founder is on the board (Founder_BoD) significantly also increased with change in patents (Change_Patents).

In the chapter where possible the results were elaborated on and supported with literature. Multicollinearity amongst predictors was very carefully managed firstly by looking at the

correlation and finally in the regression model that eliminated variable causing multicollinearity to ensure a stable final model.

Conclusions

The research makes a novel contribution to the understanding of corporate governance and performance in new ventures. The research focuses on syndicated investments, analyzes the operations of syndicating venture capitalists, and the nature of foreign venture capitalists in the syndication, while also looking at the role of founders in venture capitalist backed new ventures. The integrated framework used resource-based view and agency theory to formulate the hypotheses. The resource-based view predicts that the venture capital firms provide benefit to their portfolio companies, by providing critical resources to ensure viability and continuity to the new ventures. The agency problems are associated with principal-agent and principal-principal, between the founder and the venture capitalists, and the second between the members of the VC-Syndication involved in technology-based new ventures. The central theme, based on the integrated framework, is to mitigate the higher agency risk associated with VC-Syndication, which requires more independent boards. This can only be done effectively when critical resources are added to the board to ensure that important competences, as well as capabilities, are available to the new venture for their development. In summary, the board members can only effectively monitor the new venture when they have the necessary skills and capabilities, and further be in a position to also provide resources.

Building on literature reviews of earlier empirical research and theoretical framework, the models were built focusing on (1) VC-Syndication and Founder-CEO, and (2) VC-Syndication and firm performance. Together these five sub-models comprise an integrated model of the mechanisms and the factors influencing firm growth and development.

These models were validated using survey data collected from the CEOs of Canadian technology-based new ventures. The models were tested using multivariate regression analyses. These models are the first theory-based, empirically validated models that examine the relationships between founders and their venture capital investors, when considering syndication and the impact of foreign investors. The implications for the founder, is a very important part of the study as they have a considerable amount of equity control of the new venture. They also have associated sweat equity, as well as emotional attachment to the venture. Founders play a key role in the development of the new venture, as well as changes to the board. The study looks at how VC-Syndication and founder's capabilities influence the board, as well as the performance of TBNV. In addition to looking at the founder's capabilities and performance, the study also looks at the impact of Professional-CEO on performance.

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Les Motivations et la Croissance des Femmes Entrepreneures : Une Etude Internationale¹

On assiste ces dernières décennies à un accroissement du nombre d'entreprises créées par des femmes. Cependant, malgré l'augmentation du nombre de femmes en affaires, les recherches dans le domaine rapportent que les entreprises appartenant à des femmes sont plus petites et moins portées vers la croissance que les entreprises appartenant à des hommes. L'objectif de cette recherche est d'aller mettre à jour l'état des connaissances dans ce champ d'études sachant que le profil des femmes entrepreneures évolue, et que les caractéristiques de leur entreprise changent également. Pour répondre à ces objectifs, l'étude a eu recours à un échantillon de 1 211 entrepreneurs provenant du Canada, des États-Unis et du Mexique.

Introduction

On assiste ces dernières décennies à un accroissement du nombre d'entreprises créées par des femmes. A titre d'exemple, entre 1987 et 2010, le nombre de travailleuses indépendantes au Canada est passé de 513 300 à 933 500 (hausse de 82%) comparativement à une hausse de 46% (1 185 800 à 1 736 300) dans le cas des hommes entrepreneurs pour la même période. De plus, en 2007 un peu plus de 260 000 entreprises appartenaient en majorité à des femmes, ce qui représente 16% des PME du Canada. Près de la moitié des PME au pays comptaient au moins une femme parmi les propriétaires (Gouvernement du Canada, 2010) Ce même phénomène est aussi observé aux États-Unis puisqu'en 2007 on avait recensé 7.8 millions d'entreprises appartenant majoritairement à des femmes ce qui représentant 28% des entreprises au niveau national. Ces entreprises employaient 7.6 millions de travailleurs soit 6% de la main d'œuvre. De plus, la croissance du nombre d'entreprises appartenant à des femmes était de 20% par rapport aux données de 2002. (US Census Bureau, 2010). En ce qui concerne le Mexique, l'étude de GEM en 2010 semble démontrer que le nombre d'entreprises appartenant à des femmes est moindre que celui des hommes. (10,2% vs 10,72%). En revanche, l'implication des femmes dans l'activité économique tel que démontré par le facteur TEA (Total Early-Stage Entrepreneurial Activity) développé par GEM démontre que le nombre d'entreprises nouvellement créé par les femmes est supérieur à celui des hommes (10,8% vs 10,2%),

¹ Remerciements: Les chercheurs désirent remercier les Comptables Généraux Licenciés du Canada (CGA) pour leur support financier.

L'analyse de ces données démontre que les entreprises appartenant à des femmes contribuent de façon considérable à l'économie et que leur importance relative s'est accrue rapidement dans les dernières décennies. Cependant, malgré le nombre accru des entrepreneurs et leur impact sur l'économie les recherches en entrepreneurship rapportent que les entreprises appartenant à des femmes sont souvent plus petites quant à leurs caractéristiques organisationnelles et moins portées vers la croissance que les entreprises appartenant à des hommes (Cliff, 1998 ; Lerner, Brush et Hisrich, 1997; Orser et Hogarth-Scott, 2002; Manley et Gallivan, 1997; Anna *et al.*, 2000; Du Rietz et Henrekson, 2000; Rooney *et al.*, 2003; Robichaud et McGraw, 2003; Minniti *et al.*, 2005; Fuller-Love, 2008 ; Cole et Mehran, 2009). L'ensemble de ces résultats laisse présumer que, pour un certain nombre de femmes entrepreneures, le profit et la croissance ne seraient pas les principales motivations dans la conduite de leur entreprise ou encore qu'il existe des facteurs qui empêchent les femmes de développer leur entreprise au même rythme que les hommes.

Il s'avère donc important de comprendre les facteurs qui expliquent la petite taille des entreprises appartenant aux femmes et qui limitent la croissance de leur entreprise, d'autant plus que le profil des femmes entrepreneures évolue, et que les caractéristiques de leur entreprise ainsi que leurs problématiques changent également. Morris *et al.*, (2006) a proposé un modèle qui identifie six dimensions à l'étude de l'orientation des femmes entrepreneures par rapport à la croissance : les caractéristiques personnelles, les objectifs entrepreneuriaux, les obstacles, les caractéristiques organisationnelles, les attentes des entrepreneures ainsi que l'identité de l'entrepreneure. La section qui suit présente en détail chacune des dimensions de ce modèle. Plus précisément, notre étude cible davantage les dimensions suivantes du modèle de Morris: les caractéristiques personnelles, les objectifs entrepreneuriaux, les caractéristiques organisationnelles et les attentes des entrepreneures. Nous espérons, par l'étude de ces dimensions, d'expliquer pourquoi les entreprises appartenant aux femmes sont de plus petite taille et moins portées vers la croissance que celles appartenant à des hommes.

L'étude proposée poursuit 3 objectifs. Le premier objectif tente de déterminer si les caractéristiques organisationnelles et la croissance des entrepreneures de notre échantillon reflètent ce qui est décrit dans la littérature à savoir que les entreprises appartenant à des femmes sont plus petites quant à leurs caractéristiques organisationnelles et moins portées vers la croissance que les entreprises appartenant à des hommes. Le deuxième objectif cherche à déterminer si les motivations entrepreneuriales des entrepreneures de l'échantillon diffèrent de celles des hommes entrepreneurs. Le troisième objectif vise à préciser l'orientation des motivations des femmes entrepreneures et à vérifier si les motivations entrepreneuriales des femmes diffèrent selon le pays étudié.

Pour répondre à ces objectifs, l'étude a eu recours à un échantillon de 1 211 entrepreneurs (862 femmes et 349 hommes) provenant du Canada, des États-Unis et du Mexique. Notre étude se démarque des autres études sur le sujet, en comparant les résultats obtenus des trois pays participants à l'étude². A notre connaissance, aucune étude internationale comparative n'a déjà été menée sur le domaine des motivations et la croissance des PME ce qui justifie amplement la réalisation de cette étude.

² Les 3 pays participant à l'étude sont membres d'un consortium international sur l'entrepreneurship. Ce consortium regroupe des institutions d'enseignement du Canada, des États-Unis et du Mexique. L'objectif premier de ce consortium est de sensibiliser les étudiants à l'entrepreneurship.

L'atteinte des objectifs de l'étude apportera plusieurs contributions à l'avancement des connaissances scientifiques tout en fournissant différents éléments de référence à plusieurs intervenants du domaine de l'entrepreneuriat. A titre d'exemple, les gouvernements, surtout préoccupés par leurs politiques et leurs programmes d'aide aux entreprises et par la création d'emplois pourraient utiliser de telles informations pour mettre sur pied des programmes en fonction des besoins spécifiques des entrepreneures notamment les nouveaux entrepreneurs et celles axées sur la croissance. Dans le même ordre d'idées, les chercheurs en entrepreneuriat pourraient s'y référer pour améliorer leur état de connaissances dans ce champ d'études et ainsi permettre d'élaborer des modèles plus sophistiqués pour expliquer la performance des entreprises appartenant à des femmes. Finalement, cela permettrait de livrer des informations clés aux entrepreneures eux-mêmes (les erreurs à éviter, les précautions à prendre, les compétences à acquérir, les problématiques et les défis à rencontrer) ainsi qu'aux personnes qui doivent assumer le risque financier de leurs projets (par exemple, les institutions financières).

Le plan de travail est le suivant : après une revue de la littérature, nous présenterons la méthodologie, puis nous terminerons avec les résultats de l'étude suivi d'une conclusion.

Cadre théorique de recherche et revue de la littérature

L'élaboration de notre cadre conceptuel de recherche est basée sur le modèle de Morris *et al.*, (2006) qui identifie six dimensions à l'étude de l'orientation des femmes entrepreneures par rapport à la croissance : les caractéristiques personnelles, les objectifs entrepreneuriaux, les obstacles, les caractéristiques organisationnelles, les attentes des entrepreneures (définition de succès) ainsi que l'identité de l'entrepreneure. Le modèle de Morris *et al.*, (2006) présume qu'une plus forte orientation par rapport à la croissance aura un effet bénéfique sur la croissance de l'entreprise. Chacun de ces thèmes sont discutés plus en détails dans les paragraphes qui suivent.

Les recherches effectuées sur le premier thème démontrent des différences évidentes entre les hommes et les femmes entrepreneurs. Ces différences ont été observées aux niveaux de l'expérience de travail, de la scolarité, des habiletés financières et relationnelles (Hisrich et Brush, 1984; Fischer *et al.* 1993; Brush, 1992; Belcourt, Burke et Lee-Gosselin, 1991; McGraw et Robichaud, 1998; Gouvernement du Canada, 2002; Filion *et al.*, 2004). Ainsi, certaines études (McGraw et Robichaud, 1998; Gouvernement du Canada, 2002; Filion *et al.*, 2004) ont trouvé que les femmes propriétaires d'entreprise avaient une expérience et une formation dans des domaines autres que les affaires tandis que Hisrich et Brush (1984) et Chaganti (1986) faisaient ressortir que les femmes évaluaient fréquemment leurs habiletés financières en dessous de celles des hommes mais estimaient posséder plus d'habiletés interpersonnelles que ces derniers.

Les études sur les objectifs entrepreneuriaux font d'abord ressortir une grande diversité d'objectifs chez les entrepreneurs en général (Robichaud *et al.*, 2001). Parmi les études qui ont tenté plus spécifiquement d'établir des distinctions entre les objectifs poursuivis par les hommes et par les femmes, les études de Cadieux *et al.* (2002), Cliff (1998), Holmquist et Sundin (1988), Chaganti (1986), Kaplan (1988) et Hisrich et Brush (1987) suggèrent que les femmes qui gèrent des petites entreprises ont tendance à accorder une importance comparable aux objectifs sociaux et aux objectifs économiques, alors que les hommes entrepreneurs privilégient souvent les objectifs économiques (Kent *et al.*, 1982; Stevenson et Gumpert, 1985). Les résultats d'autres recherches plus récentes pointent dans la même direction et arrivent à la conclusion que la principale différence se situe au niveau des dimensions intrinsèques (non économiques) qui seraient souvent plus

privilegiées par les femmes (McGregor et Tweed, 2000; Lee, 1997; Kirkwood, 2003; Robichaud *et al.*, 2005).

Quant au troisième thème soit celui sur les obstacles, des recherches (Belcourt, Burke, Lee-Gosselin, 1991; Bullers, 1999; Scarborough et Zimmerer, 2000 ; Robichaud et McGraw, 2004) ont trouvé que la gestion des conflits entre les responsabilités personnelles et celles liées au travail était le problème souvent mentionné par les femmes entrepreneures. A cet effet, les études de Liang et Dunn (2002) et de Ferguson et Durup (1997) ont identifiés un certain nombre de facteurs qui sont à l'origine de ces conflits notamment un manque de support de la famille, un revenu instable et incertain, le risque de pertes financières, des longues heures de travail ainsi qu'un niveau élevé de stress. L'équilibre entre les responsabilités familiales et les exigences de l'entreprise est une source de pressions additionnelle pour les femmes en affaires. Cette source de pressions se traduit par le manque de temps et d'énergie pour faire ce qu'il y a à faire (par ex., réfléchir aux problèmes financiers et fixer des priorités), par un manque de vie sociale et de participation à des réseaux et par des pressions de leur famille pour être plus disponible.

Le financement et l'accès au crédit semble aussi constituer une inquiétude majeure chez les femmes entrepreneures comme le dénote le nombre considérable d'études qui ont abordé ce sujet (Marleau, 1995; Taylor et Schorg, 2001; Coleman, 2000; Haines *et al.*, 1999; Haynes et Haynes, 1999; Gouvernement du Canada, 2000; Coleman, 2002). Deux grandes tendances semblent se dégager de ces études : un premier groupe de chercheurs (Marleau, 1995; Coleman, 2000; Riding et Swift, 1990) soutiennent qu'il existe une discrimination dans l'attribution des prêts selon le genre de l'emprunteur. Selon ces auteurs, les femmes obtiendraient des prêts avec des conditions moins favorables que ceux des hommes notamment des taux d'intérêts plus élevés ainsi que des garanties plus importantes seraient exigées sur les prêts consentis aux femmes. Un second groupe de chercheurs tentent de démontrer le contraire et argumentent que les difficultés d'accès au financement seraient plutôt liées à des caractéristiques propres à l'entreprises (taille, âge, secteur d'activité) plutôt qu'à une discrimination homme-femme (Coleman, 2002; Gouvernement du Canada, 2000). Il ressort de ces études qu'il y a encore des contradictions qui subsistent sur les difficultés d'accès au financement par les femmes entrepreneures.

L'importance des réseaux comme thème de recherche n'est plus à démontrer puisqu'il se retrouve dans bon nombre de publications qui s'accordent pour dire que c'est un élément clé de la performance entrepreneuriale. (Filion, 1990; Aldrich, Reece et Dubini, 1989; Staber, 1993; McGregor et Tweed, 2000; Lerner *et al.*, 1997, St-Cyr et Gagnon, 2004). Par exemple, les études de McGregor et Tweed (2000), St-Cyr et Gagnon (2004) et Lerner *et al.* (1997) ont établi un lien entre l'utilisation des réseaux et la performance. En particulier, le rapport GEM 2004 sur les femmes entrepreneures (Minniti *et al.*, 2004) suggère que les femmes qui connaissent d'autres entrepreneurs seraient plus susceptibles de démarrer une entreprise. Par ailleurs, d'autres chercheurs (Lavoie, 1988; Collerette et Aubry, 1990; Cromie et Birley, 1992; Minniti *et al.*, 2004) ont trouvé que les femmes tendent à sous-utiliser les réseaux.

Les recherches sur le quatrième thème du modèle soit les caractéristiques organisationnelles indiquent que les entreprises appartenant à des femmes sont souvent plus petites et moins portées vers la croissance que les entreprises appartenant à des hommes (Cliff, 1998; Lerner, Brush et Hisrich, 1997; Orser, Hogarth-Scott et Wright, 1997; Manley et Galliran, 1997; Du Rietz et Henrekson, 2000; Anna *et al.*, 2000 ; Rooney *et al.* 2003; Robichaud et McGraw, 2003; Reynolds, Bygrave et Autio, 2004). Une des raisons relevées dans la littérature pour expliquer ce

phénomène est que la croissance est plus grande dans les entreprises qui n'évoluent pas dans les secteurs des services et du détail où le rendement financier est faible (Cooper *et al.*, 1994). Or, les entreprises appartenant à des femmes demeurent fortement concentrées dans les secteurs des services et du détail (Gouvernement du Canada, 2002 ; Smaili, 2002 ; Légaré et St-Cyr, 2000 ; Ratté, 1999 ; Baygan, 2000 ; Belcourt, Burke et Lee-Gosselin, 1991).

Les recherches sur la dimension attendues des entrepreneures montrent que les femmes entrepreneures n'ont pas les mêmes aspirations pour leurs entreprises que leurs collègues masculins dans la mesure où elles poursuivent davantage un mélange d'objectifs économiques et non économiques et qu'elles mesurent le succès différemment (Robichaud, McGraw, Roger, 2005). Le même phénomène a été observé dans l'étude qualitative (Robichaud, 2001) où neuf des vingt-huit répondants (dont huit femmes) ont défini le succès ou la performance de leur entreprise par la reconnaissance des clients et du milieu, par la satisfaction personnelle qu'ils retireraient de leur commerce et par les réalisations atteintes. Pour ces entrepreneurs, l'aspect financier ne constitue pas une priorité mais un prérequis pour l'atteinte de leur objectif intrinsèque. Les renseignements tirés de ces travaux pourraient expliquer pourquoi les entreprises appartenant à des femmes sont plus petites, compte tenu de leurs caractéristiques organisationnelles, et moins portées vers la croissance économique que les entreprises appartenant à des hommes.

De façon générale, l'ensemble des écrits répertoriés et regroupés autour des dimensions du modèle de Morris et al., (2006) tendent à démontrer qu'ils existent bel et bien des différences entre les hommes et les femmes aux niveaux des caractéristiques personnelles et organisationnelles, des objectifs entrepreneuriales et des attentes ainsi que des problématiques spécifiques aux femmes entrepreneures dans les domaines suivants: financement et accès au crédit, fréquentation des réseaux, et conflit travail-famille.

Dans la prochaine section, nous présentons la méthodologie de notre étude quantitative selon l'ordre suivant : définition d'une PME, mesure des variables, population et échantillonnage et traitement et analyse des données.

Méthodologie

Définition d'une PME

Les recherches démontrent qu'il n'y a pas de définition standard d'une petite et moyenne entreprise (PME). Dans notre étude, nous avons retenu la définition de PME de l'Organisation de Coopération et de Développement Économiques (OCDE) qui définit une PME comme une entreprise de moins de 250 employés.

Mesure des variables

La collecte des informations s'est faite au moyen d'un questionnaire qui a été traduit en espagnol et validé. Les instruments qui ont servi à mesurer les objectifs des entrepreneurs ainsi que les critères subjectifs de la performance s'inspirent des instruments de mesure développés et validés par Robichaud (2011). L'instrument de mesure des objectifs entrepreneuriaux met en évidence 18 énoncés. Ces énoncés ont été identifiés par une revue de littérature et validés au moyen d'entretiens qualitatifs.

Des échelles de type Likert furent utilisés pour mesurer ces variables. Pour les variables « objectifs entrepreneuriaux », l'échelle Likert allait de 1 = aucune importance à 5 = une très grande importance tandis que pour les variables « satisfaction exprimée par les répondants par rapport au succès de leur entreprise » et « évaluation personnelle du succès de leur entreprise performance », les échelles Likert étaient les suivantes: 1 = non profitable à 5 = extrêmement profitable et 1 = très insatisfait à 5 = extrêmement satisfait.

Population et échantillonnage

Le cadre d'échantillonnage pour le Canada correspond à 6 000 entreprises soit 3 000 entreprises de l'Ontario et à 3 000 entreprises des provinces de l'Atlantique. Ces données proviennent d'une banque de données obtenue d'InfoCanada. Une fois la population définie, la collecte des données s'est faite de deux façons: dans le cas de l'Ontario, les données ont été collectées au moyen d'entretiens téléphoniques tandis que pour les provinces de l'Atlantique, les entrepreneurs contactés par téléphone étaient invités à remplir le questionnaire en ligne au moyen du logiciel « SurveyMonkey » ou par la poste, et dans ce cas, une copie papier leur était envoyé. Dans les deux cas, des appels téléphoniques ont été effectués au préalable afin d'obtenir la participation des entrepreneurs. Cette procédure d'expérimentation a permis de contacter 2 544 entreprises en Ontario pour un taux de réponse de 8.7% (221/2 544) et 1 002 entreprises dans les provinces de l'Atlantique pour un taux de réponse de 15.4 % (154/1002) pour un total de 375 répondants.

Pour les États-Unis, les 5 530 entreprises contactées proviennent du Western Kentucky, du Tennessee (3 530) et de l'Illinois (2 000). Les données utilisées proviennent de répertoires obtenus des chambres de commerce et de centres régionaux des affaires dans le cas de Western Kentucky et du Tennessee et de Dun and Bradstreet dans le cas de l'Illinois. Tout comme le Canada, les entrepreneurs contactés étaient invités à remplir le questionnaire en ligne au moyen du logiciel « SurveyMonkey » ou par la poste. Cette procédure d'expérimentation a résulté en un taux de réponse de 11.2% (395/3 530) dans le cas de Western Kentucky et du Tennessee et de 11.2% (224/2 000) dans le cas de l'Illinois pour un total de 619 répondants.

Finalement, dans le cas du Mexique, les données utilisées proviennent des chambres de commerce. Un total de 278 participants ont accepté de participer à l'étude soit 78 de Guadalajara (état de Jalisco) et 200 de Monterrey (état du Nueva Leon). Dans le cas du Mexique, les entrepreneurs qui ont participé à l'étude ont été interviewés.

Traitement et analyse des données

Le traitement statistique des données a été fait à l'aide du logiciel SPSS. Les données furent d'abord codées dans chacune des institutions participantes puis envoyées à l'Université Western Kentucky pour leur compilation et leur vérification.

Résultats

Profil des répondants

Comme première étape d'analyse nous avons procédé à une analyse descriptive des données pour dégager les principales caractéristiques des entrepreneurs et des entreprises de l'échantillon. Le tableau 1 présente les résultats à ce niveau.

Les résultats démontrent une assez bonne répartition selon le sexe des entrepreneurs (29% de l'échantillon est composé de femmes versus 71% d'hommes). La répartition de l'âge selon le sexe est essentiellement la même dans la catégorie de 20 à 29 ans mais on retrouve plus d'hommes dans la catégorie de 50 ans et plus que de femmes. Le niveau de scolarité des hommes est plus élevé que celui des femmes (71% des hommes ont un degré collégial ou plus en comparaison avec 61% dans le cas des femmes). Les hommes ont un peu plus d'années d'expérience en gestion que les femmes (50% des hommes ont 6 ans et plus d'expérience versus 45% dans le cas des femmes) et ont plus ou moins les mêmes proportions quant au nombre d'années d'expérience dans le domaine que les femmes. Dans les deux cas, ils ont majoritairement créé leur entreprise (69% dans le cas des hommes et 76% dans le cas des femmes) et la même proportion (30%) a commencé leur entreprise pour des raisons de nécessité. Finalement, le conjoint est impliqué dans l'entreprise dans une proportion de 40% dans le cas des hommes et de 37% dans le cas des femmes. Enfin, la contribution du conjoint au revenu familial est plus importante dans le cas des femmes (30%) que dans le cas des hommes (18%).

Dans le cas des entreprises de l'échantillon, les entreprises appartenant aux femmes sont plus jeunes (29% des entreprises appartenant aux femmes ont moins de 5 ans versus 18% pour les hommes), plus petites en terme d'employés (74% ont 5 employés et moins en comparaison à 56% dans le cas des hommes), plus petites en terme de chiffre d'affaires (39% ont un chiffre d'affaires inférieur à 100 000\$ comparativement à 17% pour les hommes) et réparties uniformément, comme dans le cas des hommes selon la taille des villes où elles sont situées (32% des entreprises sont localisées dans des villes de moins de 25 000 de population, 31% dans des villes entre 25 000 et 100 000 de population, 37% dans des villes de plus de 100 000). Finalement, la répartition des entreprises selon le secteur d'activités se ressemble beaucoup chez les deux sexes avec la majorité opérant dans le secteur du service (48% dans le cas des hommes et 46% dans le cas des femmes)

**Tableau 1 : Profil des hommes et des femmes
(Femmes : n=349, Hommes : n=862)**

Caractéristiques personnelles			Caractéristiques organisationnelles		
	Homme %	Femme %		Homme %	Femme %
Âge de l'entrepreneur*			Taille de la ville où est située l'entreprise		
Entre 20 et 29 ans	6	7	Moins de 25 000	30	32
Entre 30 et 49 ans	36	44	25 000 à 100 000	32	31
Entre 50 et +	58	49	Plus de 100 000	38	37
Niveau de scolarité**			Chiffre d'affaires***		
Secondaire non complété	5	7	Moins de 100 000 \$	17	39
Secondaire	24	32	100 001\$ à 500 000\$	28	31
Collège ou universitaire	71	61	500 001\$ et plus	55	30
Création de l'entreprise**			Nombre d'employés***		
Créé	69	76	1 à 5 employés	56	74
Acheté	21	16	6 à 10 employés	16	14
Hérité et franchise	10	8	11 employés et plus	28	12
Marié ou vie avec conjoint***	87	76	Secteur d'activité		
Conjoint impliqué dans l'entreprise	40	37	Commerce de détail	21	25
Contribution du conjoint au revenu familial***	18	30	Commerce de gros	9	10
			Service	48	46
			Fabrication	22	19
Débuté l'entreprise par nécessité			Âge de l'entreprise***		
Oui	30	30	1 à 5 ans	18	29
Non	70	70	6 à 10 ans	21	23
			11 ans et +	61	48
Années d'expérience dans le domaine					
Aucune expérience	38	35			
1 à 5 ans	25	28			
6 à 10 ans	17	16			
11 ans et +	20	21			
Années d'expérience en gestion*					
Aucune expérience	24	32			
1 à 5 ans	26	23			
6 à 10 ans	19	16			
11 ans et +	31	29			

* : p<0,05; **: p<0,01; *** p<0,001 (Test du t pour les variables métriques, et du Chi carré pour les variables non métriques)

Résultats relatifs à la performance

Afin de vérifier la croissance des entreprises nous avons comparé le nombre d'employés et le chiffre d'affaires des entreprises créées seulement selon l'âge de l'entreprise. Le tableau 2 présente les résultats de cette analyse. Les résultats démontrent que la taille des entreprises

(nombre d'employés) et le chiffre d'affaires augmentent de façon significative avec le nombre d'années d'existence de l'entreprise chez les deux sexes.

A titre d'exemple, la proportion du nombre d'employés chez les hommes entrepreneurs pour la catégorie 1 à 5 employés, diminue de 79% dans la catégorie de 1 à 5 ans à 71% dans la catégorie 6 à 10 ans et à 52% dans la catégorie 11 ans et plus, alors qu'on observe une augmentation dans les mêmes catégories dans le cas où il y a 6 employés et plus (21%, 29% et 48% respectivement). On observe le même phénomène chez les femmes entrepreneures qui voit, pour la catégorie 1 à 5 employés, les effectifs diminuer de 86% (catégorie 1 à 5 ans) à 85% (catégorie 6 à 10 ans) et à 67% pour la dernière catégorie. En revanche, la proportion du nombre d'employés, dans la catégorie 6 employés et plus, augmente de façon continue passant de 14% à 15% et à 33% pour les catégories 1 à 5 ans, 6 à 10 ans et 11 ans et plus, respectivement.

L'analyse des résultats par pays révèle clairement que ce sont principalement les femmes entrepreneures des États-Unis qui contribuent à rendre significatifs les résultats obtenus sur les deux variables ($p=0,02$ pour le chiffre d'affaires et $p=0,01$ pour le nombre d'employés). Ces dernières sont nettement plus axées vers la croissance que leurs homologues canadiens et mexicains pour lesquels le résultat n'est pas significatif. En revanche, les résultats obtenus chez les hommes indiquent que ce sont surtout les entrepreneurs mexicains et canadiens, dans le cas du nombre d'employés, et de l'ensemble des entrepreneurs des trois pays, dans le cas de la variable chiffre d'affaires, qui influencent les résultats.

Tableau 3
Croissance des entreprises créées selon le sexe de l'entrepreneur, l'âge et les caractéristiques de l'entreprise

Sexe	Caractéristiques organisationnelles		Âge de l'entreprise			
			1 à 5 ans	6 à 10 ans	11 ans et +	Total
Hommes	Taille*** (n=553)	1 à 5 employés	80 (79%)	85 (71%)	174 (52%)	339
		6 employés et +	21 (21%)	35 (29%)	158 (48%)	214
	Chiffre d'affaires*** (n=514)	0 à 500 000 \$	75 (74%)	65 (64%)	121 (39%)	261
		+ de 500 000 \$	27 (26%)	37 (36%)	189 (61%)	253
Femmes	Taille** (n=235)	1 à 5 employés	55 (86%)	41 (85%)	82 (67%)	178
		6 employés et +	9 (14%)	7 (15%)	41 (33%)	57
	Chiffre d'affaires*** (n=225)	0 à 500 000\$	59 (92%)	38 (84%)	73 (63%)	170
		+ de 500 000\$	5 (8%)	7 (16%)	43 (37%)	55

** : $p < 0,01$; *** : $p < 0,001$ (test du Chi carré)

Le tableau 4 révèle qu'une majorité d'entrepreneurs de l'échantillon considèrent leur entreprise comme étant très profitable ou extrêmement profitable soit 63% dans le cas des hommes contre 55% dans le cas des femmes. Cependant, les hommes de l'échantillon le serait

avantage, par rapport aux femmes, comme en témoigne le résultat statistiquement significatif obtenu au moyen du chi carré ($p=0,05$).

Par ailleurs, les entrepreneurs de l'échantillon sont généralement très satisfaits du succès de leur entreprise et cela bien que les entreprises appartenant aux femmes sont plus petites quant à leurs caractéristiques organisationnelles (effectifs et chiffre d'affaires). En effet, les entrepreneurs de l'échantillon, sans égard au sexe, qualifient leur succès d'extrêmement satisfaisant dans une proportion de 70%. C'est donc dire que les femmes entrepreneures se montrent aussi satisfaites que les hommes entrepreneurs malgré qu'elles qualifient leur succès comme étant inférieur à celui des hommes. Ces résultats sont aussi conformes à une étude menée auprès des propriétaires de petites entreprises de l'état Nouvelle-Angleterre selon laquelle 91% des femmes se disaient satisfaites du succès de leurs entreprises comparativement à 80% pour les hommes (The Hartford, 2012).

Tableau 4
Évaluation du succès et satisfaction de la performance des entreprises selon le sexe

Succès de l'entreprise*	Homme	Femme	Satisfaction de la performance	Homme	Femme
Non profitable/sous la moyenne	35 (4%)	20 (6%)	Très insatisfait et insatisfait	52 (6%)	26 (7%)
Moyen	285 (33%)	134 (39%)	Quelque peu et très satisfait	201 (24%)	78 (23%)
Très profitable et extrêmement profitable	535 (63%)	190 (55%)	Extrêmement satisfait	599 (70%)	243 (70%)

* : $p<0,05$ (test du Chi carré)

Résultats relatifs aux motivations

Afin de clarifier la façon dont les motivations des entrepreneurs peuvent expliquer les résultats obtenus nous avons, dans un premier temps, comparé les objectifs entrepreneuriaux des femmes à ceux des hommes (tableau 5) et des femmes entre elles c'est-à-dire selon leur pays d'origine (tableau 6). Le tableau 5 présente le résultat de cette analyse en classant les objectifs selon le degré d'écart entre les hommes et les femmes. L'analyse de celui-ci fait ressortir que les femmes et les hommes de l'échantillon ont choisi comme premier et deuxième choix « pouvoir décider ce que je veux faire » et « être mon propre patron » et comme troisième choix « augmenter les profits et les ventes de mon entreprise » dans le cas des hommes et, « créer mon propre emploi » dans le cas des femmes. De plus, on remarque une plus grande importance accordée par les hommes aux objectifs extrinsèques comme le démontre les résultats statistiquement significatifs obtenus sur les objectifs suivants: « maximiser la croissance de mon entreprise » ($p= 0,029$), « augmenter les profits et les ventes de mon entreprise » ($p=0,022$), « bâtir un fonds de pension pour mes vieux jours » ($p=0,046$) et « augmenter les sommes d'argent que je tire de mon entreprise » ($p=0,034$). De leur côté, les femmes entrepreneures sont plus préoccupées que les hommes par l'objectif « créer mon propre emploi » ($p=0,047$).

L'analyse des résultats par pays révèle que ce sont les hommes du Canada et des États-Unis qui rendent les résultats obtenus sur les motivations extrinsèques statistiquement significatifs. En effet, à l'exception de l'énoncé « maximiser la croissance de mon entreprise » qui n'a pas obtenu un coefficient proche du seuil significatif de 0,05 dans le cas du Canada seulement, tous les autres énoncés extrinsèques mentionnés à la fin du paragraphe précédent se sont révélés significatifs. C'est à noter qu'aucune différence statistiquement significative n'est ressortie entre les femmes et les hommes du Mexique.

Tableau 5
Motivations des hommes et des femmes de l'échantillon

Variabes de motivation	Hommes N=860	Femmes N=348	Écart
Maximiser la croissance de mon entreprise*	3,89	3,75	0,14
Augmenter les profits et les ventes de mon entreprise*	4,08	3,94	0,14
Bâtir un fonds de pension pour mes vieux jours*	3,92	3,78	0,14
Augmenter les sommes d'argent que je tire de mon entreprise*	4,19	4,06	0,13
Bâtir quelque chose pouvant bénéficier à mes enfants	3,11	2,99	0,12
Pouvoir décider ce que je veux faire	4,30	4,22	0,08
Relever un défi	3,98	3,92	0,06
Procurer des emplois à mes enfants	2,82	2,76	0,06
Bâtir une entreprise qui me permet de vivre confortablement	4,16	4,12	0,04
Être plus près de mes enfants	3,53	3,50	0,03
Aider à mon développement personnel	4,11	4,10	0,01
Obtenir une sécurité personnelle en me garantissant un emploi	3,82	3,83	-0,01
Maintenir un sentiment de liberté de d'indépendance	4,05	4,03	-0,02
Me faire connaître dans la communauté	2,85	2,87	-0,02
Prouver que je peux réussir ce que j'entreprends	3,85	3,90	-0,05
Être mon propre patron	4,21	4,27	-0,06
Faire un travail que j'aime faire	3,38	3,44	-0,06
Créer mon propre emploi*	4,04	4,17	-0,13

* : $p < 0,05$ (test du Chi carré)

Afin de préciser davantage l'orientation des motivations des femmes entrepreneures, le tableau 6 présente les motivations des femmes entrepreneures selon leur pays d'origine. Voici les principales observations qui se dégagent de ce tableau :

- Les résultats obtenus du Canada et des États-Unis se ressemblent beaucoup dans la mesure où cinq des six premiers choix ont été identiques: « pouvoir décider ce que je veux faire », « être mon propre patron », « créer mon propre emploi », « bâtir une entreprise qui me permet de vivre confortablement », et « aider à mon développement personnel ». La seule différence relevée a été « maintenir un sentiment de liberté de d'indépendance » sélectionné au troisième rang par les

femmes des États-Unis, et « relever un défi » choisi au cinquième rang par les canadiennes. C'est à noter que les six premiers objectifs retenus par les femmes entrepreneures de ces deux pays sont de type intrinsèque.

- Les choix les moins importants pour l'ensemble des répondantes ont été « procurer des emplois à mes enfants », « me faire connaître dans la communauté » tandis que « bâtir quelque chose pouvant bénéficier à mes enfants » a été le troisième choix le moins populaire seulement pour les femmes américaines et canadiennes alors que les femmes mexicaines optaient pour « faire un travail que j'aime faire ».

- Contrairement aux femmes canadiennes et américaines, les femmes mexicaines ont privilégiées un mélange d'objectifs intrinsèques et extrinsèques. Elles ont, en effet, favorisé des objectifs à caractère intrinsèque tels que « être mon propre patron », « créer mon propre emploi », « aider à mon développement personnel » et « maintenir un sentiment de liberté de d'indépendance » et des objectifs extrinsèques : « augmenter les profits et les ventes de mon entreprise » et « augmenter les sommes d'argent que je tire de mon entreprise ». C'est à noter que ce dernier objectif a été le tout premier choix des femmes mexicaines.

Comme vous pouvez le constater à la lecture des deux derniers paragraphes, il est évident que les femmes entrepreneures mexicaines ne sont pas en affaires pour le plaisir mais bien par nécessité.

Afin de supporter les résultats obtenus au tableau 6, nous avons, de façon arbitraire, créé deux variables de motivation soit une variable formée de motivations intrinsèques et une autre formée de motivations extrinsèques. Ces deux variables exploratoires furent ensuite soumises à un test de t pour voir s'il existait un lien entre ces variables et les femmes entrepreneures des trois pays participants à l'étude. La composition de ces deux variables ainsi que les résultats de cette analyse sont présentés au tableau 7.

Les résultats de l'analyse vont dans le même sens que les résultats obtenus au tableau 6 dans la mesure où aucune différence statistiquement significative n'a été relevé entre les femmes entrepreneures des trois pays au niveau des motivations intrinsèques alors qu'une différence statistiquement significative a été trouvée chez les motivations extrinsèques entre les entrepreneures du Mexique et du Canada ($p=0,04$) et, entre les entrepreneures du Mexique et des États-Unis ($p = 0,001$). Ce dernier résultat confirme donc un comportement plus axé vers la poursuite d'objectifs extrinsèques de la part des femmes mexicaines.

Tableau 6
Motivations des femmes entrepreneures selon le pays

Variables de motivation	Canada N= 145, Rg	États-Unis N= 118, Rg	Mexique N= 84, Rg
Aider à mon développement personnel	3,93 06	4,19 04	4,28 02
Créer mon propre emploi	4,25 03	4,09 06	4,17 03
Faire un travail que j'aime faire	3,63 14	3,71 12	2,73 18
Me faire connaître dans la communauté	2,89 16	2,67 17	3,12 17
Maintenir un sentiment de liberté de d'indépendance	3,86 11	4,25 03	4,07 06
Obtenir une sécurité personnelle en me garantissant un emploi	3,74 13	3,71 12	4,08 05
Relever un défi	3,95 05	3,94 08	3,86 11
Pouvoir décider ce que je veux faire	4,36 01	4,26 02	3,94 10
Prouver que je peux réussir ce que j'entreprends	3,92 08	3,94 08	3,81 12
Être mon propre patron	4,29 02	4,32 01	4,16 04
Augmenter les sommes d'argent que je tire de mon entreprise	3,93 06	3,98 07	4,41 01
Maximiser la croissance de mon entreprise	3,77 12	3,57 14	3,98 09
Bâtir une entreprise qui me permet de vivre confortablement	4,16 04	4,13 05	4,02 08
Être plus près de mes enfants	3,44 15	3,40 15	3,71 13
Augmenter les profits et les ventes de mon entreprise	3,92 08	3,88 10	4,07 06
Bâtir un fonds de pension pour mes vieux jours	3,91 10	3,85 11	3,37 15
Bâtir quelque chose pouvant bénéficier à mes enfants	2,76 17	2,81 16	3,65 14
Procurer des emplois à mes enfants	2,74 18	2,38 18	3,35 16

Tableau 7
Classification des variables de motivation selon intrinsèque ou extrinsèque

Variables de motivation intrinsèque	Variables de motivation extrinsèque
Aider à mon développement personnel Faire un travail que j'aime faire Me faire connaître dans la communauté Maintenir un sentiment de liberté de d'indépendance Relever un défi Pouvoir décider ce que je veux faire Prouver que je peux réussir ce que j'entreprends Être mon propre patron Être plus près de mes enfants Obtenir une sécurité personnelle en me garantissant un emploi	Créer mon propre emploi Augmenter les sommes d'argent que je tire de mon entreprise Maximiser la croissance de mon entreprise Bâtir une entreprise qui me permet de vivre confortablement Augmenter les profits et les ventes de mon entreprise Bâtir un fonds de pension pour mes vieux jours Bâtir quelque chose pouvant bénéficier à mes enfants Procurer des emplois à mes enfants
Pays/moyenne des variables intrinsèques Canada 3,81 États-Unis 3,86 Mexique 3,73	Pays/moyenne des variables extrinsèques Canada 3,69 États-Unis 3,58 Mexique 3,90
Différence entre les pays T-test Canada vs États-Unis ,571 Canada vs Mexique ,453 États-Unis vs Mexique ,204	Différence entre les pays T-test Canada vs États-Unis ,264 Canada vs Mexique ,042 États-Unis vs Mexique ,001

Discussion et Conclusion

En premier lieu, nos résultats montrent que les entreprises appartenant aux femmes sont plus petites que celles des hommes quant à leur effectif et leur chiffre d'affaires. Cependant, contrairement à la littérature, les résultats obtenus sur la croissance, tel que mesurés par la croissance des effectifs et du chiffre d'affaires selon l'âge de l'entreprise, montrent que les entreprises appartenant aux femmes de l'échantillon prennent de l'expansion tout comme celles appartenant aux hommes à mesure qu'elles avancent en âge. Les résultats de notre étude tombent donc dans la même catégorie que celles de Chaganti et Parasuraman (1996) et Fischer et al. (1993) qui ont trouvé que la croissance des effectifs des entreprises, sans égard au sexe du propriétaire, étaient similaires. Ces constats confirment l'importance des femmes entrepreneures comme source de croissance économique et de création d'emploi bien que cette croissance semble être moins prononcée que celle des hommes entrepreneurs. Toutefois, il y a peut-être lieu d'émettre une réserve en ce qui concerne les résultats obtenus dans la mesure où l'analyse selon les pays montre que ce sont uniquement les femmes entrepreneures des États-Unis qui démontrent une croissance significative aux niveaux des effectifs et du chiffre d'affaires et non l'ensemble de l'échantillon.

Un aspect intéressant qui est ressorti de nos résultats sur la performance porte sur la satisfaction exprimée par les femmes entrepreneures à l'égard du succès de leur entreprise. Ces dernières ont, en effet, exprimées le même niveau de satisfaction vis-à-vis le succès de leur entreprise que les hommes et cela, malgré une évaluation subjective de la performance qualifiée d'inférieure à celle des hommes ($p < 0,05$). D'autres études (Cooper et Artz, 1995; Callahan-Levy et Messé, 1979) suggèrent également que les femmes entrepreneures seraient plus satisfaites que les hommes pour une performance financière égale. À titre d'exemple, dans l'étude de Cooper et Artz (1995), les femmes entrepreneures qui démontraient des résultats financiers inférieurs à ceux des hommes se disaient être plus satisfaites que ces derniers. Ces auteurs en ont conclu que d'être leur propre patron, même avec des résultats financiers limités, procure aux femmes en affaires plus de satisfaction personnelle que de travailler pour un employeur. Ces résultats viennent appuyer le postulat que les femmes seraient en affaires principalement pour des raisons intrinsèques et que la poursuite d'objectifs extrinsèques, bien que nécessaire pour la pérennité de l'entreprise, ne serait pas le principal objectif de la présence des femmes en affaires.

Parallèlement, nos résultats montrent que les femmes entrepreneures n'ont pas les mêmes motivations que les hommes entrepreneurs dans la mesure où les hommes de l'échantillon poursuivent davantage des objectifs extrinsèques alors que les femmes semblent plus insistées sur la poursuite d'objectifs intrinsèques. Ces résultats vont dans le même sens que d'autres études (Malaya, 2006; McClelland et al, 2005; Buttner et Moore, 1997) qui affirment que les femmes ne démarrent pas leur entreprise pour des raisons économiques et que leur succès se mesurerait plutôt par des objectifs non économiques tels que la satisfaction personnelle ou un besoin d'indépendance et d'autonomie.

Lorsqu'on regarde plus en détails à l'orientation des motivations des femmes entrepreneures selon le pays d'origine on remarque que les motivations entrepreneuriales des femmes américaines et canadiennes sont presque identiques puisque cinq de leurs six premiers choix sont les mêmes et orientées vers des motivations de type intrinsèque. Seules les femmes mexicaines démontrent un comportement différent en favorisant davantage des motivations économiques telles que « augmenter les profits et les ventes de mon entreprise » et « augmenter les sommes tirées de mon entreprise » choisis respectivement au sixième et au premier rang. Cependant, certains facteurs peuvent expliquer un tel comportement. En effet, 47% des femmes mexicaines ont dit être en affaires par nécessité comparativement à 18% et 30% pour les femmes canadiennes et américaines. De plus, seulement 10% de leur conjoint contribuerait au-delà de 30% au revenu familial en comparaison à 41% dans le cas des conjoints canadiens et à 23% dans le cas des conjoints américains. Ces résultats montrent qu'il y a plus de pression sur les épaules des femmes entrepreneures mexicaines à performer davantage afin d'assurer un revenu familial adéquat leur permettant de vivre convenablement.

Des théories féministes ont été avancées afin de permettre de mieux comprendre les différences dans l'orientation des motivations entre les hommes et les femmes. Des tentatives de modélisation sur la situation des femmes entrepreneures ont donné lieu aux deux perspectives suivantes : le "féminisme libéral" et le "féminisme social" (Fischer et al. 1993). La perspective "féminisme libéral" est basée sur l'affirmation que les femmes sont autant capables de rationalité que les hommes et suggère qu'elles sont désavantagées par rapport aux hommes à cause de leur manque d'expérience, de leur faible niveau de formation en gestion et de certains facteurs discriminatoires (par exemple un traitement inégal lorsqu'elles ont un besoin de financement). Les différences observées dans les réalisations des hommes et des femmes peuvent alors s'expliquer par le fait que les femmes n'ont pas

pu développer leur pleine capacité. Ainsi, si elles avaient accès aux mêmes opportunités que les hommes, elles seraient en mesure d'actualiser leur plein potentiel et, de ce fait, les différences entre hommes et femmes disparaîtraient. La perspective "féminisme social", par contre, affirme que les différences entre les hommes et les femmes sont attribuables aux expériences vécues au tout début de leur vie, ce qui les a amenés à une manière différente de voir et de comprendre le monde. Les hommes et les femmes développent alors des compétences distinctives qui vont donner lieu à des comportements entrepreneuriaux propres à chaque sexe. Cette perspective sociale peut justifier ainsi le fait que les femmes soient motivées principalement par l'intérêt de leur travail, même si c'est au détriment de l'aspect financier, souvent plus privilégié par les hommes.

Ces tentatives d'explications des différences dans les motivations des entrepreneurs selon le sexe appuient l'hypothèse selon laquelle les femmes entrepreneures favorisent davantage que les hommes entrepreneurs les objectifs de nature intrinsèque. Ainsi, les renseignements tirés de ces travaux jumelés aux résultats de l'étude peuvent expliquer, en partie, pourquoi les entreprises appartenant aux femmes sont plus petites, compte tenu de leurs caractéristiques organisationnelles, et généralement moins portées vers la croissance que les entreprises appartenant aux hommes.

Comme limites mentionnons d'abord que l'échantillon présente certaines limites en termes de validité externe. Par exemple, le fait que les petites entreprises sélectionnées ne sont pas nécessairement représentatives des entreprises en général ne nous permet pas de dégager des conclusions pouvant être généralisées à l'ensemble des petites entreprises. Aussi, notre recherche ne porte que sur quelques variables dont les motivations entrepreneuriales et ne prend pas donc en compte les autres déterminants du développement ou de la croissance des petites entreprises. Dans le cadre d'une recherche future, il serait judicieux d'intégrer à notre modèle d'autres variables afin d'obtenir un modèle de recherche plus complet.

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An Exploration of Information Sharing in the Canadian Anti-Money Laundering/Counter-Threat Financing Regime

Network theory was used to develop a theoretical framework to study the links (relationships or ties) between the various departments and agencies involved in the Canadian anti-money laundering/counter-threat financing regime. Content analysis was used to assess various pieces of legislation, as well as agency annual reports. The results indicate possible room for improvement in communication and information sharing between some of the partners in the Canadian AML/CTF regime.

The Canadian anti-money laundering/counter-threat financing (AML/CTF) regime represents the federal Government of Canada's response to illicit acts of money laundering, terrorist financing, and associated crimes. Although the AML/CTF regime is principally coordinated by federal departments and agencies, many public and private organizations participate in the regime. Without the various public and private organizations' due diligence, adherence to the laws governing their responsibilities as financial institutions, and countless professionals who ensure our financial system is protected from abuse Canada's economy and reputation would suffer significantly. In this paper, we explore the communication and information sharing relationships of the AML/CTF partners. These partners collectively monitor, analyze, and disseminate advice to government, and enforce the laws associated with the Canadian AML/CTF regime.

This research is relevant and timely for a number of reasons. First, three significantly important reports relating to the AML/CTF regime in Canada have recently been released; the Final Report of the Air India disaster; the Treasury Board mandated 10 Year review of Canada's Anti-Money Laundering / Anti-Terrorist Financing Regime (fiscal year 2010/2011); and the Interim Report of the Special Senate Committee on Anti-terrorism – Security, Freedom And The Complex Terrorist Threat: Positive Steps Ahead. These reports explain the AML/CTF regime, identify current concerns, and suggest recommendations to improve among other things – communication and information sharing. These reports helped to direct this study, by identifying key legislation, protocols, agreements, and regime participants' mandates.

The media has recently described how the perpetrators of money laundering and terrorist financing “remain largely unknown and unpunished” (Sher, *Globe and Mail*, 2011). Another article states, “communication and feedback between the [AML/CTF] regime's partners [should] be improved” (Staff report, *Canadian Press*, 2011). This study may contribute to understanding and addressing these reported deficiencies. Finally, this study provides a valuable resource to those individuals who work within the AML/CTF regime, and to academics and members of the general public who take an interest in this aspect of public policy, and public safety.

The AML/CTF Regime

As one of the wealthiest countries, a population of over 34 million people, and one of the most advanced financial services industries in the world – Canada is an attractive locale for business and investment, by individuals, entities and groups who may want to take advantage of this prosperity – through both legal and illegal methods. Financial institutions in general are designed to move large quantities of funds between individuals and entities, often in and through various foreign jurisdictions. The complex web of banks, money service businesses, correspondent banks, alternative remittance companies, etcetera, complicates the AML/CTF regime. In addition to banks, there are various money service businesses (e.g. Western Union), credit card companies (e.g. Visa), credit unions (e.g. Desjardins Group), and debit card companies (e.g. Interac) in Canada. Each type of financial institution quite often provides different, yet often complimentary, financial services. And each has legislated responsibilities under the AML/CTF regime in Canada, which often involve reporting certain transactions to the proper authorities, and “know your client” (KYC) requirements.

The AML/CTF regime is composed of several departments and agencies at the federal, provincial, and municipal levels, as well as numerous organizations (e.g. public and private companies, such as reporting entities, and national as well as provincial regulators). The federal Department of Finance is the lead agency charged with the mandate of protecting the Canadian financial system. Several key agencies report to the Minister of Finance or report to Parliament through the Department of Finance including the Financial Transactions and Reports Analysis Centre, and the Office of the Superintendent of Financial Institutions of Canada. Moreover, the Department of Public Safety houses several government agencies which contribute and fulfill roles related to the AML/CTF regime, namely, the Royal Canadian Mounted Police, the Canadian Security Intelligence Service, and the Canada Border Services Agency. And finally, the Canada Revenue Agency contributes to the AML/CFT regime through a variety of facets associated with its administration of the Income Tax Act. In-depth discussion of each partner and their specific mandate and priorities is outside the scope of this paper. International non-governmental organizations such as The United Nations, The International Monetary Fund, and The World Bank contribute to, or affect the AML/CTF regime in Canada as well.

The Theoretical Framework and Relevant Assumptions

Network Theory (e.g., Granovetter, 1973; Snijdersy, van de Buntz, and Steglich, 2010; Wasserman & Faust, 1994) examines the links or relationships between actors. Actors could be any number of things, such as individuals, organizations, or countries, depending on what is being studied. For our purposes, the departments and agencies involved in the AML/CTF regime in Canada are the actors, and the formal and informal associations, connections, legislated mandates and processes through which they interact are the links or relationships between those actors. The work of Dr. Stephen Schneider, particularly his article on Money Laundering in Canada: A Quantitative Analysis of Royal Canadian Mounted Police Cases in the *Journal of Financial Crime* (2004, p.282) also guided the proposed framework for evaluating the relationships between the partner agencies within the AML/CTF regime.

Granovetter (1973, p.1361) defined “the strength of a tie as a combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie.” Similarly we will use the notions of time (e.g. time spent working with or for colleagues from across the AML/CTF regime), intimacy (e.g. the extent of working relationships with colleagues from across the AML/CTF regime), and reciprocal services (e.g. mandates to assist domestic agencies involved with the AML/CTF regime), to examine the strength of the ties between those departments and agencies. Our study also focuses on notions of legality (e.g. legal frameworks, legislated mandates) and privacy, and how these notions interact with the communication and information sharing between partners.

The assessments of time and intimacy in the context of interagency and interdepartmental cooperation and communication are based on whether joint management meetings, interdepartmental expert groups (IEGs), strategic level exchanges of personnel (secondments), tactical level exchanges of personnel, or Mutual Legal Assistance Treaties (MLATs) are in place. More specifically, relating to time, are these meetings scheduled regularly? Are these secondments ongoing? An overall assessment (strong, weak, or absent) is provided. Adding to the complexity of the notion of time are the concepts of intimacy and reciprocal services, which are anticipated to be more difficult to measure. The following questions will be used to help assess the intimacy and level of reciprocal services. How well do the individuals meeting one another (joint management meetings, IEGs) know each other? Do they communicate only through formal channels, or is it possible for them to make informal disclosures and/or informal requests? Are there mutual training opportunities? At what level does communication occur (executive level, managerial level, analyst level)?

Guiding Assumptions

Following Snijdersy, van de Buntz, and Steglich (2010), the ties (links) discussed throughout this paper are assumed to be static relationships that have and will endure over time. These ties exist beyond the current government, beyond the state of the current political environment, and beyond those public servants who are currently employed within the framework of the AML/CTF regime. This will avoid an assessment based on relationships between friends or colleagues who happen to currently get along well. Snijdersy et al. (2010, p. 46) also assume that “actors control their outgoing ties.” We similarly assume that the various agencies and departments (the actors) involved with the AML/CTF regime control the communication and ultimately the information passed between them. In other words, this communication is based on their legislated mandates (attributes and position), and the status of cases and/or investigations (perceptions).

Only legislation, official statements or information sheets will be assessed. This study does not examine strategic exchanges of information, though this level of exchange is considered important. Instead, we will only assess tactical information exchanges as these have the most immediate effect on individuals and groups. For example, a tactical level exchange of information may lead to an enforcement action, such as charges being laid against an individual, or have immigration implications, such as the refusal of immigration visas etc. Finally, this report will also only examine domestic exchanges of information. Although international information exchange is vital, and undoubtedly ongoing, this research will not extend beyond Canadian borders.

Methods and Analysis

Agencies and Documents Examined

Purposive sampling was used to determine appropriate units to include in the study (Neuendorf, 2002). As such, not all domestic departments and agencies involved in the AML/CTF regime in Canada were studied. Moreover, not all relevant documents were coded. The list of agencies examined included Canadian Security Intelligence Service (CSIS), Royal Canadian Mounted Police (RCMP), Financial Transactions and Reports Analysis Centre of Canada (FINTRAC), Canada Border Services Agency (CBSA), and Canada Revenue Agency (CRA). The documents examined included FINTRAC Annual Report 2011, CSIS Public Report 2009-2010, CSIS Act (C-23), Criminal Code (C-46), Proceeds of Crime (Money Laundering) Terrorist Financing Act, FINTRAC Pamphlets (Sharing Intelligence – Making The Links and Connecting the Money to the Crime). Once all the relevant documents were located, they were saved in digital format (PDF format). Text content analysis was used (Holsti, 1969; Neuendorf, 1969).

Coding

The first author was the “active coder”, utilizing digitized documents and the imbedded search / find features of computer programs. Coding forms were separated into positive terms (suggest a strong information sharing relationship between AML/CTF regime partners), quasi-positive terms (suggest a weak information sharing relationship), and negative terms (suggest a negative information sharing relationship). Terms associated with a strong indication of information sharing were Disclosure, Disclose, Advice, Advise, Recommendation, Suggestion, Direction, Cooperation, Formal, Partnership, Relationship, Memorandum of Understanding, Mandate, Lawful, Query, Involuntary (disclosure...), Report, Provide, Agreement, Share, Guidance, and Sharing. Terms associated with a weak indication of information sharing were Mutual (training, management), Informal, Collaborate, Voluntary disclosure, Choice, Option, Ability, Joint (training, management), and Meeting. Terms associated with a negative indication of information sharing were Prohibited, Not allowed, Discouraged, Illegal, Unconstitutional, Unlawful, Discourage, Arms length, Privacy, and Non-disclosure. For each document, the terms were searched, located, documented, and counted. The coding forms contain references such as P4Pg6L3, which corresponds to: page 4, paragraph 6, and line 3. The assessment for the CSIS Act is documented on a “coding form” in Appendix 1 (space limitations do not allow us to include our analysis for all of the documents in our sample).

Following this part of the analysis, a more detailed qualitative analysis of the information sharing links was carried out. For each of the documents examined, each quality was assessed against the parameters of strong ties, weak ties, absent ties, or unknown ties. The coding legend (Neuendorf, 2002) is presented in Figure 1 and the “Code Book” (Neuendorf, 2002) is found in Appendix 2.

The Results

The “coding” totals for the first part of the analysis are presented in Table 1. These totals were tallied from the individual coding forms described above. To interpret the information, the first number is: terms present / total number. For example, under the positive category, out of the twenty-two (22) terms identified as positive examples of information sharing, nine (9) are located

within the Criminal Code of Canada. The second number is: the total number of instances of those nine positive terms are located within the Criminal Code of Canada.

Table 1 – Coding Forms Totals

Criminal Code of Canada	9 / 22 ; 66	1 / 9 ; 6	3 / 10 ; 12
CSIS Act	10 / 22 ; 61	0 / 9 ; 0	3 / 10 ; 3
CSIS Public Report 2009/2010	16 / 22 ; 84	3 / 9 ; 6	2 / 10 ; 7
FINTRAC Annual Report 2011	16 / 22 ; 141	4 / 9 ; 5	3 / 10 ; 12
FINTRAC - Connecting Money to the Crime pamphlet	5 / 22 ; 23	2 / 9 ; 2	4 / 10 ; 5
FINTRAC - Law Enforcement and Intelligence Partners: Sharing Intelligence, Making the Links	12 / 22 ; 52	0 / 9 ; 0	1 / 10 ; 1
PC(ML)TFA	14 / 22 ; 191	0 / 9 ; 0	2 / 10 ; 13
	Positive	Quasi-Positive	Negative

There are significantly higher frequencies of positive information sharing terms compared to quasi-positive and negative terms. The results also show significantly higher instances of these positive terms when compared to the total number of quasi-positive and negative terms within the documents examined. It should be noted, however, that the total number of positive information terms searched for (22) is higher than quasi-positive terms (9) and negative terms (10). At the same time, when the results of quasi-positive and negative terms are combined, the total number of positive terms found within these documents still significantly outnumbers that of the former. Of the documents examined, therefore, the impression is that there is a strong propensity or a strong requirement to share information. However, the presence of quasi-positive and negative terms indicates that there are likely limits on the extent of allowable information sharing, or that information sharing can only occur under certain situations or when certain requirements are satisfied. To confirm this assessment, as mentioned above, a more detailed qualitative analysis was carried out. First, we provide a detailed analysis for the CSIS Act. Due to space limitations, we cannot provide this level of detail for all of the documents.

There are numerous sections of the CSIS Act which pertain to the sharing of information related to the contribution of the CSIS to the AML/CTF regime in Canada, namely Sections 12 to 14, Section 17 and Section 19. More specifically, Section 12 sets out the general information sharing protocols of the CSIS mandate as stated by “[T]he Service shall...report to and advise the Government of Canada.” The CSIS Act requires that the CSIS can only enter into an arrangement with a province with the approval of the Federal Minister responsible for the CSIS and if the CSIS is providing security assessments to any police force in a province, the approval of the provincial Minister responsible for police forces is required. Section 14 states that the CSIS may advise any Minister on matters related to the security of Canada which would include money laundering and terrorist financing. Furthermore, Section 14 also states that the CSIS may provide

any Minister with information relating to security matters or criminal activities. The limit established by Section 14 is that this information sharing can only occur “related to the exercise of any power or the performance of any duty or function under the Citizenship Act or the Immigration and Refugee Protection Act”. Much like Section 13, Section 17 states that the CSIS may cooperate with any province of Canada, however the approval of the Minister is required. And again the same as Section 13, if the CSIS wants to cooperate with any police force within a province, the approval of the provincial Minister responsible for police forces is also required. And finally, Section 19 discusses the authorized disclosure of information. Interestingly, Section 19 states “information obtained by the Service shall not be disclosed except in accordance with this section”. This is an interesting approach, as it dictates strict guidance describing the circumstances under which disclosure is allowed. This section does not direct or proscribe the CSIS to disclose; rather, it gives the CSIS the authority to disclose should it choose to do so.

Analysis of Information Sharing

In Table 2 below, the letter refers to the assessment of the strength of the link from an information sharing perspective, strong, weak, absent, or unknown and the numbering refers to the item from the coding legend in Figure 1. For example, in the first completed cell in the first row, the S-2,6,7 indicates that CSIS and the RCMP have strong ties under mandate, process, and threshold. In other words, information sharing is directly linked to their primary mandates, they have strategically established information sharing as a process, and they have a formal test (threshold) that must be met to share information. Details for all assessments are found in the code book in Appendix 2.

Figure 1 - Coding Legend

Items

1 = Legislation; 2 = Mandate; 3 = Priorities; 4 = Inter-Governmental Working Groups (IGWGs), 5 = Inter-Governmental Expert Groups (IGEGs), Joint Management Groups (JMG), and Joint Intelligence Groups (JIGs); 5 = Working level collaboration; 6 = Process; 7 = Threshold; 8 = Secondment(s); 9 = Liaison(s); 10 = Educational exchanges; 11 = Memorandum of Understanding

Assessment

S = Strong Tie or Link; W = Weak Link; A = Absent Link; U = Unknown Link

Table 2 – Assessment of Information Sharing

From

CSIS		S-2,6,7 W-1,3 U-4,5,8, 9,10,11	S-2,6,7 W-1,3 U-4,5,8,9, 10,11	S-2,6,7 W-1,3 U-4,5,8, 9,10,11	S-2,6,7 W-1,3 U-4,5,8, 9,10,11
RCMP	S-7 W-2,6 U-1,3,4,5, 8,9,10,11		S-6,7 W-1,2,3 U-4,5,8,9, 10,11	S-7, U-1,2,3, 4,5,6,7, 8,9,10,11	S-7 U-1,2,3, 4,5,6,8, 9,10,11
FINTRAC	S-2,3,6,7 W-1 U-4,5,8,9 10,11	S-2,3,6,7 W-1 U-4,5,8, 9,10,11		S-2,3,6,7 W-1 U-4,5,8, 9,10,11	S-2,3,6,7 W-1 U-4,5,8, 9,10,11
CBSA	W-1,2,6 U-3,4,5,7,8, 9,10,11	W-1,2,6 U-3,4,5, 7,8,9,10, 11	S-2,6,7 W-1,3 U-4,5,8,9, 10,11		U-1,2,3, 4,5,6,7,8, 9,10,11
CRA	S-6,7 W-1,2,3 U-4,5,8,9, 10,11	S-6,7 W-1,2,3 U-4,5,8, 9,10,11	S-6,7 W-1,2,3,4, 5,8,9,10,11	W-1 U-2,3,4, 5,6,7,8, 9,10,11	
	CSIS	RCMP	FINTRAC	CBSA	CRA

To

Discussion and Implications

Our results indicate that there might be room for improvement in communication and information sharing between some of the partners in the Canadian AML/CTF regime. This research should be considered exploratory in scope for a number of reasons. Under the Access to Information Act regime, additional information may be available concerning memoranda of understanding, secondments, etc. that may facilitate information sharing between departments

and agencies. Expanding this research, choosing different assumptions, and sending key departments and agencies ATIP requests may shed light on, or reveal enhanced and/or limited relationships.

An effective AML/CTF regime is one in which the various departments and agencies of government mandated to prevent, detect, and deter money laundering and terrorist (or “threat”) financing also work with the private sector and educate the public writ large. Numerous entities, for example banks and financial institutions have a legal responsibility under Canadian law to help in the prevention, detection, and deterrence of ML and TF. A transparent dialogue between all stakeholders can only help to improve the AML/CTF regime in Canada.

Overall, Canada is mostly compliant with the recommendations offered by the Financial Action Task Force (FATF) (FATF, 2008). The Canadian AML/CTF regime has the legislation in place to effectively share information. However, without detailed information concerning the implementation and use of that legislation, it is impossible to absolutely confirm the AML/CTF regimes’ information sharing effectiveness. More research and analysis would be beneficial in that regard.

An issue with the FATF, and more specifically concerning the 49 recommendations to combat money laundering and terrorist financing, is that no member of the FATF is fully compliant with all the recommendations; this includes the founding members of FATF (of which Canada is one). Many of these recommendations concern the sharing of information. Is this simply hypocritical? Or is FATF setting the ideal example for countries to strive for? It seems this is a complicated, and often political, issue that goes beyond simple hypocrisy. Consider that the legislative and legal environments vary considerably from country to country. For example, Canada has taken a strong stance protecting individual rights and freedoms, as enshrined in the Constitution and the Charter of Rights and Freedoms. Not all countries share these types of documents nor collective values. Again, we illustrate this using the case of CSIS.

CSIS has the authority to disclose or share information with a variety of government departments and agencies at both the federal and provincial levels. The CSIS is not obliged to share information. There is a review body (the Security Intelligence Review Committee and possibly other internal mechanisms yet to be identified) that is charged with ensuring the CSIS acts in accordance with all applicable laws and directs its activities to fulfill government and Ministerial direction. The CSIS is an integral component of the AML/CTF regime in Canada and, although outside of the scope of this research, plays a role in Canada’s international commitments in tackling the world-wide concerns of money laundering and terrorist financing. It seems the government of Canada is attempting to strike a balance between the constitutionally and legislatively protected privacy afforded to individuals against the mandated duties of law enforcement and intelligence services to protect Canadians, Canadian interests, and Canadian society writ large. For example, the FINTRAC has an important role in the detection of money laundering, terrorist financing, and threat resourcing. However, the Centre is bound by legislation and privacy constraints, to only disclose information when it is suspected that it might assist a designated law enforcement or intelligence service in them fulfilling their mandates. And only certain information (designated information) will be disclosed.

An educated public debate on security issues and the stability of our financial system is important to all Canadians, but particularly important to many business people in many sectors. As highlighted by the Proceeds of Crime (Money Laundering) and Terrorist Financing Act, as

well as the many public documents released by FINTRAC, there are many sections that have reporting requirements, notably the financial services industry, the real estate industry, and the gambling industry to name just a few.

As this research and analysis is exploratory in scope, numerous outstanding questions remain that may be answered with further study. For example: What is potentially contained in a security assessment? Could money laundering and terrorist financing be components of these security assessments? Future research could consider expanded examination of secondary and tertiary departments and agencies involved in the AML/CTF regime in Canada. Another potential area of study would be information sharing from a strategic perspective between Canadian domestic departments and agencies involved in the AML/CTF regime, as well as information sharing with foreign governments and non-governmental organizations, at either the tactical or the strategic level.

Canada's obligations under numerous international agreements and treaties call for a strong AML/CTF regime of which information sharing and communication are integral components. The AML/CTF regime partners need to act in accordance with the new realities of the global financial system and be prepared to defend against the threats posed by corrupt regimes, terrorists and criminals, as well as to ensure all applicable Canadian law is upheld and enforced. Increased awareness will help facilitate a public debate, ultimately assisting in bringing these issues and concerns into the public sphere for discussion. This discussion will then hopefully encourage the implementation of improvements (if necessary) of the government's response to money laundering and terrorist resourcing, ultimately in line with the Canadian public's expectations.

Appendix 1 – Coding Form for CSIS Act

Positive

Date: Dec 05, 2011

Coder: John A. W. Ross

<i>Positive terms (allowing information sharing)</i>	<i>Is the searched term present? Y or N</i>	<i>Reference: Section, page number, paragraph etc...</i>
Disclosure	Y	Sections 19, 19(2)(d), 19(3), 25(a), 25(b)
Disclose	Y	Sections 18(1), 18(2), 19(1), 19(2), OATH OF SECRECY
Advice	Y	Sections 7(3), 14, 15
Advise	Y	Sections 7(3), 12, 14(a)
Recommendation	Y	Sections 52(1)(a), 52(2)
Suggestion	N	N/A
Direction	Y	Sections 6(1), 6(2), 6(3), 7(1)(a), 7(3), 33(2)(a), 38(a)(ii), 40
Cooperation	Y	Section 17
Formal	N	N/A
Partnership	N	N/A
Relationship	N	N/A
Memorandum of Understanding	N	N/A
Mandate	N	N/A
Lawful	Y	Section 2(d)(note)
Query	N	N/A
Involuntary (disclosure...)	N	N/A
Report	Y	Sections 12, 19(3), 20(2), 20(3), 31, 33(1), 33(2), 33(3), 38(a)(i), 38(a)(iv), 38(c)(ii), 39(2)(a), 40(a), 52(1)(a), 52(1)(b), 52(2), 53, 54, 55(b), 56(2),
Provide	Y	Sections 5(2), 8(1)(a), 13(1), 13(2)(b), 13(3), 14(b), 16(2), 40(a), 42(2), 42(3)(b), 52(1)(a), 52(1)(b), 52(2),
Agreement	N	N/A
Share	N	N/A
Guidance	N	N/A
Sharing	N	N/A

Quasi-Positive

Date: 2011 12 05

Coder: John A.W. Ross

<i>Positive terms (allowing information sharing)</i>	<i>Is the searched term present? Y or N</i>	<i>Reference: Section, page number, paragraph etc...</i>
Mutual (training, management)	N	N/A
Informal	N	N/A
Collaborate	N	N/A
Voluntary disclosure	N	N/A
Choice	N	N/A
Option	N	N/A
Ability	N	N/A
Joint (training, management)	N	N/A
Meeting	N	N/A

Negative

Date: Dec 05, 2011

Coder: John A.W. Ross

<i>Negative terms (prohibiting information sharing)</i>	<i>Is the searched term present Y or N</i>	<i>Reference: Section, page number, paragraph etc...</i>
Prohibited	N	N/A
Not allowed	Y	Section 42(4)
Discourage	N	N/A
Illegal	N	N/A
Unconstitutional	N	N/A
Unlawful	Y	Sections 2 ("threats")(d), 20(2)
Discourage	N	N/A
Arms length	N	N/A
Privacy	Y	Section 19(2)(d)
Non-disclosure	N	N/A

Appendix 2 – Code Book

Strong Ties

- 1-S = Yes, the departments or agencies (hereafter D or A) are formally allowed to share information (by legislation).
- 2-S = Yes, D or A are formally mandated (must) to share information (by legislation).
- 3-S = Yes, D or A have formally stated information sharing is a top priority.
- 4-S = Yes, D or A have formal IGWGs, IGEGs, JMGs, and JIGs.
- 5-S = Yes, D or A allow formal working level collaboration.
- 6-S = Yes, D or A have strategically established information sharing as a process.
- 7-S = Yes, D or A have a formal test (threshold) that must be met to share information.
- 8-S = Yes, D or A have a formal secondment currently staffed.
- 9-S = Yes, D or A have a formal liaison relationship currently staffed.
- 10-S = Yes, D or A engage in formal exchanges of expertise (e.g. training courses offered to partner agencies and departments).
- 11-S = Yes, D or A have a formal MOU in place which formalizes the relationship (information sharing must be a component) between signatory departments or agencies.

Weak Ties

- 1-W = D or A legislation allows, even directs that department or agency to share information, however that information sharing can only be done under strict conditions and circumstances (by legislation).
- 2-W = D or A are formally allowed (can) to share information (by legislation).
- 3-W = D or A have formally stated information sharing is a secondary or tertiary priority, perhaps not directly linked to their primary mandate.
- 4-W = D or A have formal IGWGs, IGEGs, JMGs, and JIGs - however they meet irregularly, inconsistently, or perhaps on a case-by-case basis.
- 5-W = D or A allow formal working level collaboration, however these relationships are not necessarily encouraged.
- 6-W = D or A have strategically established information sharing as a process, however this is a possible component or outcome to their overall mandate.
- 7-W = D or A require a judicial order (warrant) that must be provided to share information.
- 8-W = D or A have a formal secondment, but this position is not currently staffed.
- 9-W = D or A have a formal liaison relationship, but this position is not currently staffed.
- 10-W = D or A engage in formal exchanges of expertise, however these exchanges exist only as an exception.
- 11-W = D or A have a formal MOU in place which formalizes the relationship between signatory departments or agencies.

Absent Ties

- 1-A = D or A are have no legislated provision allowing them to share information (by legislation).
- 2-A = D or A are formally prohibited to share information (by legislation).
- 3-A = D or A have formally stated information sharing is not a top priority.
- 4-A = D or A are prohibited from, or do not engage in, IGWGs, IGEGs, JMGs, and JIGs.
- 5-A = D or A prohibit formal working level collaboration, or it does not occur.
- 6-A = D or A do not have strategically established information sharing protocols as a process.

7-A = D or A do not have a formal test (threshold) because they are prohibited from sharing information.

8-A = D or A do not have a formal secondment provision.

9-A = D or A do not have a formal liaison provision.

10-A = D or A do not engage in formal exchanges of expertise.

11-A = D or A do not have a formal MOU in place.

Unknown Ties

1-U = There is not sufficient information to determine whether D or A are formally allowed to share information (by legislation).

2-U = There is not sufficient information to determine whether D or A are formally mandated to share information (by legislation).

3-U = There is not sufficient information to determine whether D or A have formally stated information sharing is a top priority.

4-U = There is not sufficient information to determine whether D or A have formal IGWGs, IGEGs, JMGs, and JIGs.

5-U = There is not sufficient information to determine whether D or A allow formal working level collaboration.

6-U = There is not sufficient information to determine whether D or A have strategically established information sharing in process.

7-U = There is not sufficient information to determine whether D or A have a formal test (threshold) that must be met to share information.

8-U = There is not sufficient information to determine whether D or A have a formal secondment currently staffed.

9-U = There is not sufficient information to determine whether D or A have a formal liaison relationship currently staffed.

10-U = There is not sufficient information to determine whether D or A engage in formal exchanges of expertise

11-U = There is not sufficient information to determine whether D or A have a formal MOU in place which formalizes the relationship between signatory departments or agencies.

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A Comparison of Common Traits in Canada's Nortel Fraud to Those in US Companies and a Discussion of the Underlying Ethical Issues

This paper will use literature in presenting a comparison of the common traits in one of the largest financial reporting frauds in Canadian history to those that occurred in US companies. In part two, the underlying ethical issues surrounding the fraud will be discussed and consideration will be given to the ethical standards of decision makers and whether regulation alone is what is needed.

Introduction

Investor confidence has been rocked by fraudulent financial reporting activity over the past decade. One just needs to look at large business failures such as Enron, Health South or WorldCom in the United States (US). In Canada one of the largest accounting frauds occurred in Nortel. Encompassed within these business failures are traits that will serve to identify the possibility of such occurrences in the future. There have been significant studies performed on these US companies and on Nortel independently. Part one of this paper will use the literature to identify the similarities between the circumstances within the US entities to Canada-headquartered Nortel.

The response to fraudulent activity in the past has been increased regulation. The effectiveness of these responses is only measurable after they have been in place and subjected to subsequent review. Hindsight provides ease of evaluation after the fact. A key component underlying all fraudulent activities is the ethical standards of the decision makers involved which make up the corporate governance within these organizations. When considering the ethical component, the heart of the problem may be much deeper than regulation can effectively address. Part two of this paper will discuss the ethical standards of decision makers, elements that are present in a fraud and consider whether regulation alone will solve the problem.

Brief Overview of Companies

The past decade was fraught with business failures that resulted in extensive investor financial losses and eroded investor confidence. Fraudulent activities were present in failed companies such as Nortel, Enron, Health South, and WorldCom.

Nortel. Nortel originally operated in telecommunications equipment and in 1998 in efforts to remain competitive the company expanded into net gear (Weber & Reinhardt, 2009). The

company was at its peak in July 2000 when it represented more than 37% of the Toronto Stock Exchange (Fogarthy, Magnan, Markarian & Bohdjalian, 2009). Nortel grew through aggressive acquisitions and analysts promoted the company as being sustainable (Fogarthy et al., 2009). In short Nortel was hailed as a great Canadian company. By 2001 Nortel stock trading was suspended as the stock prices fell enormously due to Nortel's now known accounting irregularities (Fogarthy et al., 2009).

Enron. Enron operated in the energy sector as a natural gas provider and by 2001 was touted as one of the best companies to work for (Jennings, 2003). The company had expanded through diversification into natural gas trading and added "electric power, coal, steel, paper and pulp, water and broadband fiber optic cable capacity" as well as construction and management of energy facilities (Healy & Palepu, 2003, p. 5). Enron's stock increased significantly in 1999 and 2000 yet analysts did not question this (Healy & Palepu, 2003). Further, Enron was rated one of the most innovative companies but by December 2001 Enron had filed for bankruptcy (Healy & Palepu, 2003).

WorldCom. WorldCom operated in the telecommunications sector. The company used an aggressive acquisition strategy to achieve superior growth (Zekany, Braun, Warder, 2004). In 2001 Worldcom was the largest internet carrier and the second largest long-distance carrier with a market value of \$180 billion (Akhigbe, Martin & Whyte, 2004). Fortune magazine placed the executives of WorldCom on the list of "People to watch in 2001" (Zekany et al. 2004). All of this recognition and within months it was evident the company had been on the slope to failure (Zekany et al. 2004). Aggressive revenue reporting had been used by WorldCom, which resulted in accounting irregularities that would ultimately lead to the demise of the company (Akhigbe et al. 2004).

HealthSouth. HealthSouth operated hospitals and rehabilitation centers that were seen as the cream of the industry (Jennings, 2003). The company grew at a fast pace and reached its peak in 1998 (Jennings 2003). From its humble beginnings in 1984, it had grown to be the largest provider of outpatient and rehabilitative services (Johnson, G. & Johnson, M., 2005). HealthSouth began its fall from glory in 1998 when its forecasted earnings were reduced (Jennings, 2003). The company continued its dissent as it became clear that revenue had been overstated in efforts to continue to show aggressive growth (Jennings, 2003).

Common Traits

Common traits have been identified related to the failed companies:

- Pressure to maintain the numbers and performance
- Fear and silence
- Senior Managers with very young direct reports
- Weak board of directors or external supervision
- Conflicts of interest
- Innovative culture
- Culture that promotes social responsibility (Jennings, 2004, p.13).

Several of these factors will be used in a comparison of Canada's Nortel to the US's Enron, Health South and WorldCom.

Pressure to Maintain the Numbers and Performance

Henry (2008) performed a study to assess the impact of earnings press releases on investors. Results of the study showed that investors are influenced by the tone of reports (Henry, 2008). Further, it was found that longer reports reduce the effect of negative results. It is common knowledge that investors look for a strong return on their investments. Essentially, they want the value of their investments to increase and/or to receive returns through interest or dividends. Earnings reports that indicate high earnings per share will retain and draw more investors. Companies use earnings reports both to promote and report on the organization's results (Henry, 2008). "Executives of Enron, WorldCom, Tyco, Adelphia, Health South and other companies felt tremendous pressure to meet the numbers" (Jennings, 2004). DeGeorge, Patel & Zeckhauser (1999) indicated that executives want to report positive profits, sustain recent performance and meet analysts' expectations. Evidence of this pressure existed in Nortel, Enron, WorldCom and HealthSouth.

Nortel. Canada took pride in Nortel which made up 37% of the Toronto Stock Exchange in 2000 (Fogarthy, Magnan, Markarian & Bohdjalian, 2009). Nortel under new leadership in 1997 expanded from exclusively being in the telephone industry into also providing internet equipment (Weber, J., Reinhardt, A. & Burrows, P. (1999). Further, the writers highlight Nortel's growth through the acquisitions of companies such as Bay Networks, Clarify, Periphonics, Shasta networks and Cambrian Systems (Weber et al., 1999). Fogarthy et al. (2009) indicate that other Telecom firms were experiencing large fluctuations in earnings but Nortel exceeded expectations consistently for 16 quarters. Analysts did not question this but accredited this to the expertise of the company's CEO and the business strategy that Nortel had adopted (Fogarthy et al., 2009). The Financial Times are referenced by Fogarthy et al. (2009) when stating that analysts believed Nortel had "solid, sustainable growth" and "perpetual surpassing of earnings expectations"(p.167) . Clearly, there was pressure to maintain the numbers and performance.

Enron. Enron started out as an energy company that was created as a result of a merger between Houston Natural Gas and Internorth natural gas companies (Healy & Palepu, 2003; Jennings, M. 2003). Enron realized double-digit growth during the late eighties and to achieve further growth it expanded into natural gas trading, construction and management of energy facilities (Healy & Palepu, 2003). Share prices of Enron increased by 56 and 87 percent in 1999 and 2000 whereas the index increased by just 20 and 10 percent in those years (Healy & Palepu, 2003). Further, Healy and Palepu (2003) indicate market capitalization of Enron exceeded \$60 billion which was 6 times the book value and was a strong indication of the market's expectations for Enron. Enron was identified as the "seventh largest capitalized company in the USA" (Chatzkel, J., 2003, p. 127).

Worldcom. Worldcom was a leader in the telecommunications industry that achieved its growth through 65 successful acquisitions (Norwani, N., Mohamad, Z. & Chek, I., 2011). These acquisitions included companies such as MFS Communications, UUNet and MCI Communications (Norwani et al., 2011). Zekany, Braun and Warder,(2001) quoted the CEO, Ebbers, saying to a *Fortune* reporter that the company's goal was not to simply increase market share but to be number 1 on Wall Street. WorldCom's attempt to continue its growth through acquisitions was stymied when it failed to merge with Sprint in 2000 (Norwani et al., 2011). In an attempt to meet the market's target, management resorted to false reporting (Norwani et al., 2011). Share values fell from \$6.97 in February 2002 to \$0.83 on July 19, 2002 when WorldCom filed for bankruptcy (Akhibe, Martin, & White, 2004).

Health South. HealthSouth was started in 1984 by the CEO with just \$55,000 in capital and by 1998 stock had increased from the 1986 \$1 per share value to \$31 per share (Jennings, 2003). At that point the CEO was boastful that the company had met or beat earnings expectations in 47 consecutive quarters (Jennings, 2003). The CEO was caught on wire telling employees “to get the numbers where we want them to be. You’re my guy. You have the technology and know-how” (Jennings, 2003, p. 45). Weld, Bergevin and Magrath (2004) state that companies are under intense pressure to meet analysts’ expectations. Further, the writers suggest that this may be the factor that leads to such corporate fraud as occurred at Enron, World Com and HealthSouth (Weld, Bergevin & Magrath, 2004).

Conflicts of Interest

Nortel. Executive compensation created a conflict of interest at Nortel since, for example, the CEO received bonuses that were based on revenue and operating earnings per share with less weight on the earnings per share (Fogarthy et al., 2009). Nortel’s’ business acquisition strategy resulted in an increase in revenue which led to increased bonuses. Thus there was motivation for the CEO to continue with the acquisition strategy (Fogarthy et al., 2009). In addition to the bonuses the company compensated executives with stock options. Fogarthy et al. (2009) identify that stock options may provide incentive for executives to create short-term increases in the value of stock.

Enron. Stock options were a key component of management compensation in Enron (Healy & Palepu, 2003). The holding of stock options could explain why Enron’s management focused on projecting great expectations for the company and presentation of inflated earnings to meet analyst projections (Healy & Palepu, 2003). Enron’s board of Directors was riddled with conflicts. Jennings (2004) notes that a board member was receiving large donations from Enron, another board member had business relations with Enron’s subsidiaries, others were consultants and / or held shares in Enron. These conflicts of interest could potentially affect board decisions in favor of board members personal gain.

WorldCom. The CEO of WorldCom held stock options that added to over \$100 million (Skeel, 2005). Further, Skeel (2005) writes that stock options are opportunities for gains with no exposure to loss for CEOs. If the value of the stock increases the holder will exercise and have recognized the gain; however, if the price falls the holder will not exercise (Skeel, 2005). Skeel indicates that part of the reform as a result of the large business failures such as WorldCom should have been an adjustment in the accounting for stock options. Notably, in Canada the accounting for stock options was changed in 2002 such that the values impacted the bottom line whereas in the US they were not changed and did not impact the company’s earnings (Skeel, 2005; CICA, 2012). As Skeel (2005) states the incentive to drive up stock prices is enormous for holders of stock options. Magnan and Tebourbi (2009) identify that management can increase the value of their stock option earnings without maximizing shareholder value through choices of disclosure and accounting manipulation.

HealthSouth. Richard Scrusby was the founder and CEO of HealthSouth and a shareholder of the company (Jennings, 2003). Executive officers including Scrusby began selling their shares in 1998 when the company’s shares were at their peak (Jennings, 2003). Numerous members of the board of directors had personal interests in HealthSouth (Jennings, 2003). Jennings (2003) identified conflicts of interest from the top down. The Board of Directors were not independent as is evident from the conflicts of interest that were present. Further, Jennings

(2003) identifies that one director held a consulting contract with HealthSouth that paid \$250,000 per year for seven years. Yet another director's company was paid \$5.6 million to install glass at one of HealthSouth's new hospitals. A hospital supply company who serviced HealthSouth was partly owned by Mr. Scrusby, six directors and their wives. Three of these directors were on the audit committee. Two directors had served on the board for eighteen years. Eight of the board members were company officers (Jennings, 2003).

In addition, to the conflict of interest related to the Board of Directors, managers also had conflicts of interest. Jennings (2003) writes that the executives were young and the salaries and bonuses grew exponentially. Jennings (2003) writes that key executives "owed significant amounts of money that they had borrowed in order to exercise their stock options" (p.47). These conflicts had created self-interest for these managers. Mr. Scrusby, CEO, had personal companies that benefited through business with HealthSouth (Jennings, 2003). In addition, Scrusby used the company's assets for his own benefit. HealthSouth had allowed Scrusby to live a lavish lifestyle that created a significant conflict of interest.

Weak Board of Directors and External Supervision

There is a significant amount of literature available on Corporate Governance that has been developed since the corporate scandals of the last decade. Prior to this literature Yermack (1996) through research had found that companies with small boards of directors had higher market value. Further, the writer indicates that large boards become unwieldy and an obstacle to efficient performance (Yermack, 1996).

Nortel. Nortel's Board of Directors was recognized as one of the best (Thain, 2004). The New York Times indicated the board consisted of the "cream of Canada's business community" (Thain, 2004, p. 2). Thain (2004) also quotes a well known expert in the field of corporate governance as saying, "Who would they recruit that was any better?" (p. 2). Although, the expectation was that Nortel's board was superior, in fact it demonstrated many weaknesses that are common to the boards of other failed companies as identified in Jennings (2003). Thain (2004) writes that an informed observer indicated that the board did not understand the intensity of Nortel's business nor did they understand the company's operations and how they generated profits. Further this board did not provide any consideration to internal controls through an internal audit function or through the external auditors (Thain, 2004). The separateness of the board is evidenced by Thain when he writes that the board was "viewing the company from its exalted and removed position" (Thain, 2004, p. 2). Thain recognizes that the stock options that were discussed previously should never have been approved by the board as the compensation created incentive for the executives to place their self-interest above that of the stakeholders. Finally, Thain (2004) identifies that the numerous other commitments that the board members had would erode their ability to contribute as they should to Nortel's board.

Enron. Independence is required of boards of directors in order that members are not influenced by self-interest. Jennings (2004) writes that Enron's board members received \$380,000 in retainers. In addition, the board members were reluctant to challenge the company on any areas of operations or financial reporting (Jennings, 2004). Enron's board of directors failed in this regard given the numerous conflicts of interest that were present and its failure to actively review and challenge the operations of the company. The primary purpose of the board is to represent the shareholders' interests (Dossani & Hoje, 2010). The boards of directors have the responsibility of hiring senior management. Dossani & Hoje (2010) recognized that the board of directors for

Enron did not approve in the hiring of the general manager. This is an example of the inactivity of the board in its role. The board of directors also failed to provide oversight of the auditing firm Arthur Andersen (Dossani & Hoje, 2010). Dossani and Hoje (2010) report that Enron's board did put in place a set of controls for one area of transactions; however, they did nothing to establish the controls were working but relied on their belief in management.

WorldCom. "WorldCom's board was referred to as "Bernie's board" because there were few outsiders and those who were outsiders were personally and financially obligated to Ebbers" (Jennings, 2004, p. 16). Zekany et al. (2001) indicate that Ebbers (WorldCom CEO) attracted admirers to the board of directors. The culture at WorldCom was one in which decisions of executives were not questioned or refused even by the board. Further, the writers indicate that *Business Week* suspected the board members received many benefits and that resulted in their loyalty to Ebbers (Zekany et al., 2001).

HealthSouth. Jennings (2003) indicates one expert noted, "There has been so much sleeping on the job at HealthSouth board that it could rise to gross negligence" (p.47). One of the directors commented that the directors really did not know a lot about what was occurring at the company (Jennings, 2003). Clearly this is an indication of the passive nature of the board and not the necessary active oversight that is required. The board was slight on external members. In addition to the conflicts of interest previously mentioned, Jennings (2003) writes that in 1996, eight of the 14 board members were company officers, although this improved in later years.

Overall Comparison

The following table summarizes the above discussion and demonstrates the similarities in traits of Canadian-headquartered Nortel and the US companies. It shows that the characteristics prevalent in the US companies were also present in Nortel.

Regulation

Regulation of the trading of securities did not occur until the Securities Exchange Act of 1934 in the US. Prior to this the NYSE was aware of manipulation and lack of controls surrounding these practices (Jennings, 1964). Discussions of wrongdoings within the markets had been occurring before 1909 but until the Exchange Act the industry was self-regulated (Jennings, 1964). As North America became more industrialized during the 1920s, stock prices increased and the unregulated environment was ripe with unethical behavior. Fraud including fraudulent financial reporting and overstated market values contributed to the market crash of 1929 (Rockness & Rockness, 2005). From this we see that since incorporations and the holding of investments by individuals who relied on others to manage the companies in which they invested there has been the issue of self-interest over the needs of shareholders. There has been other legislation such as the Investment Company Act of 1940 and the Foreign Corrupt Practice Act of 1977 which legislates behavior (Rockness & Rockness, 2005).

Situation	Nortel	Enron	WorldCom	HealthSouth
Pressure to Maintain the Numbers	Exceeded analysts' expectation for 16 quarters running while other companies in similar industries were experiencing large fluctuations.	Share prices increased by 56 and 87% when the index only increased by 20 and 10%. Enron became the seventh largest capitalized company in the USA.	Goal was to be number one on Wall Street. Resorted to false reporting to do this.	Met or beat the numbers in 47 consecutive quarters. CEO noted as saying "Get the numbers where they need to be."
Conflict of Interest	Bonuses based on revenues and operating earnings. Executives were compensated with stock options.	Executives were compensated with stock options. Board members had ties with the company.	Executives were compensated with stock options.	Executives were compensated with stock options. Board members had ties to the company.
Weak Board of Directors and External Supervision	Board did not understand the company operations and how they generated profits. Board gave no consideration of internal controls. Board members had numerous other commitments, which limited them from providing sufficient oversight of Nortel.	Board members received retainers. Board members did not challenge management and failed to provide oversight.	Board did not question management decisions. Board members were not external from the company or had obligations to the CEO.	Board members did not know a lot about what was occurring at the company. Majority of board members on the board, initially, were internal.

The business failures of Enron led to the passing of the Sarbanes Oxley Act (SOX) of 2002 in the US. SOX "legislated ethical behavior for publicly traded companies and their auditor firms" (Rockness & Rockness, 2005, p. 31). This legislation requires companies to have audits of the internal controls and have management sign off on the financial reports (Rockness & Rockness, 2005). Significant to the US accounting body, Sox removed the oversight of accounting from FASB (Financial Accounting Standards Board) to an independent external body called PCAOB (Public Company Accounting Oversight Board) (Rockness & Rockness, 2005). In Canada, there were no significant changes in the oversight of accounting. As a result of the changes in the US, the Canadian Public Accountability Board (CPAB) was created to provide oversight through inspections of firms that provide audits of public companies. Unlike the US PCAOB the CPAB did not remove any authority from the CICA (Arens, Elder, Beasley & Spletstoeser-Hogeterp, 2011).

HealthSouth served as a test of the impact that SOX might have on fraudulent behavior of executive officers. Most of the charges against Scrushy of HealthSouth occurred prior to the Sarbanes Oxley legislation (Johnson & Johnson, 2005). However, according to Johnson & Johnson (2005) the certification of financial reports for several quarters did fall under Sarbanes Oxley and was one of the first major cases to have been tried in court which served as a test of the 2002 act. The charges laid were much less than the maximums that were legislated in SOX

(Johnson & Johnson, 2005). Whether the law had demonstrated that it would deter such fraudulent activity in the future is questionable, in the writer's view.

The Underlying Problem

Business Ethics. The accounting improprieties that occurred in Nortel, Enron, WorldCom and HealthSouth are examples of decisions that crossed the line of ethical behavior. This writer believes that it was not the initial intent of the parties in these companies to behave unethically. Some of the reasons that may have led to this were presented in the comparison of each of these companies in the first section of this paper. One of the items discussed was pressure to maintain the numbers. Research related to fraud identifies that in order for fraud to occur three things are present: pressure, opportunity and rationalization (Dorminey, Fleming, Kranacher & Riley, 2012). This research is based on the premise that an otherwise ethical individual when faced with what is perceived as an insurmountable problem aligned with opportunity and rationalization will bend under the pressure and commit the unethical act of fraud.

(Drucker (1981) in a discussion of business ethics writes that all authorities of the Western tradition – from the Old Testament prophets all the way to Spinoza in the 17th century, to Kant in the 18th century, Kierkegaard in the 19th century and, in this century, the Englishman F.H. Bradley (*Ethical Studies*) or the American Edmond Cahn (*The Moral Decision*) – are, however, in complete agreement on one point: there is only one ethics, one set of rules of morality, one code, that of *individual* behavior in which the same rules apply to everyone alike (p. 2). Thus in the writer's view we cannot justify that our actions are warranted because we are in a business. There is no separation of us the individual and us the individual in business. If we choose to be unethical in business it is an individual action that we are individually responsible for. Drucker discussed ethical behavior in shades of gray. The answers are not always black and white. For example, a mother who steals to feed her children, Drucker writes, may justify the stealing. However, if the mother asked for food, she may not have to steal (Drucker, 1981).

Plinio et al. (2010) referenced research of The Rutgers Institute for Ethical Leadership, which studied employees and students. The results indicate that there was a lack of ethical behavior and ethical leadership, in an economic downturn the situation is worse, there is a fear of reporting misconduct and trust of leaders is lower. Education has been identified as making a difference. Bernet and Getzen (2007) indicate that a 2003 survey found that 30 percent of those surveyed did not trust corporate earnings reports. Plinio, Young and McCormack (2010) referenced studies performed by KPMG that found that education results in higher ethical values. It follows then, in the writer's view, that increased ethical education from early in life onwards would increase the threshold at which a person might succumb to pressure and commit fraud.

Ethical versus Legal. Historically legislation and ethics were not considered separately (Shaffer, T. 2002). It was not until the late eighteen hundreds that the two began to be seen as distinct (Shaffer, T. 2002). Shaffer (2002) refers to the separation as regulation without conscience. Further, the work explains how initially law and morals were cohesive, moved to a process where they were seen as entirely separate and now consideration is being given to the thought that they cannot be separate.

Jennings (2005) writes that just because it is legal does not mean it is ethical. It is common knowledge under our legal system that individuals are innocent until proven guilty. In the HealthSouth, Scrusby trial, a juror was looking for evidence and it just was not there

(Jennings, 2005). Sarbanes Oxley was legislated to ensure transparency in financial statements. Jennings (2005) states “we cannot write laws to cover every possible situation or nuance of accounting, financial reporting, trading, or the handling of documents” (p.43). Further the work indicates trust is a key element within the workings of the initiatives. The writer believes that individuals in these roles must be trustworthy and to be trustworthy implies an ethical standard. The Enron failure is an example of operating within the realms of the law yet the substance of what occurred was deceiving and hence unethical. Enron remained in compliance with generally accepted accounting principles in their reporting of special purposed entities used to obtain gas reserves (Healey & Palepu, 2003). This resulted in Enron keeping significant debt off its balance sheet leading investors to believe the company was in a better position than it actually was. Enron used present value concepts called “mark to market” which were within the accounting rules to account for future contracts (Healey & Palepu, 2003; Jennings, 2003). The recognition of revenue from these future contracts served to increase earnings. Nortel and WorldCom, on the other hand, violated generally accepted accounting principles through the improper treatment of revenues and expenses (Norwani et al., 2011; Fogarthy et al., 2009).

Jennings (2005) identifies that employees and executives must abide by the law and employ high ethical standards. Further Jennings (2005) references past SEC chairman William H. Donaldson who stated that the most surprising aspect of his role as government’s chief regulator of capital markets was “The constant enforcement actions undertaken against investor bilking, fraud schemes. We beat one and another one pops up” (p.47). The writer considers the resources that are being utilized to combat this unethical behavior and the good for which those resources might otherwise be used. As Guynn (2005) indicated though we will always have those players that place their self-interest before others. Specific to accounting, a study by Shaub, Collins, Holzmann & Lowensohn (2005) considered factors that might lead them to participate in unethical behavior. The study looked at the management accountant’s self-interest and concern for others. The results showed that the greater the self-interest the more likely the accountant might choose the unethical and the more concern the accountant had for others the less likely it was that this choice would be made.

Individual decisions. Maslow’s theory of self-actualization was based on a pyramid of needs (Certo & Certo, 2009). The theory is based on the premise that as humans fulfill their basic needs of food, water and safety, they strive to fulfill higher needs up to self-actualization. Based on this theory, it follows that humans will strive to continue to improve in areas that they feel are important to them. There remains the question as to whether individuals will achieve this in an ethical manner or succumb to some pressure, fear or conflict. Guynn (2005) indicates that greed and arrogance are human flaws that have been with us forever. This self-interest may lead an individual into making unethical choices. Using the results from Shaub et al. (2005), a question then comes to mind: If individuals are taught a concern for others will this need then promote the achieving of self-actualization in a manner that does not harm others so it is ethical?

The Solution. If there were a simple solution, the problem would not be ongoing. Plinio, Young and McCormack (2010) and Brooks (2010) identify the importance of educating our youth in sound moral conduct. Their work identifies that education improves ethical behavior and that education starts at home and throughout school years. The research shows that individuals who have been exposed to ethical programs were less likely to perform unethical behavior. Studies also show that as unethical behavior is performed it becomes more accepted as the norm. Guynn (2005) identified the need to instill strong ethical standards within our youth. “In the era of Enron, WorldCom, and the rest, the lapses were great, the conflicts many, and the cost in terms of

investor trust, nearly unspeakable. More than the reforms we have seen are needed: True reform must come from leaders with a strong moral compass” (Jennings, 2005, p.45). Jennings (2005) writes that we should consider how we would feel if we were the client. This then comes back to Drucker’s writings where he identifies there is no difference in our religious background. The underlying concept in Jennings statement can fall within the beliefs of many and stems from ones moral fabric. It is this writer’s view that it is human nature to strive for more, whether we use unethical means to achieve this can be impacted by the strength of our ethical background and beliefs. Shaub et al. (2005) previously discussed shows that a higher concern for others reduces the likelihood of unethical choices.

Regulation is an important aspect; however, we have often heard the comment, it will only stop the honest thief. Put another way if an individual is intent on committing a fraud for personal gain they will find a way to circumvent the control. Conflicts of interest serve to create a situation in which players might strive to serve their self-interest over their concern for others. Disclosure of self-interest in corporate environments is required to be disclosed. Legislation has moved to require that these be presented in simple language. Jennings (2004) identifies that government should create a culture that is based on ethics versus legislation. This is in line with previous comments indicating that the law is moving to more cohesiveness in regards to ethics and law.

Conclusion

In part one of this paper, the comparison of Canada-headquartered Nortel to US Enron, WorldCom and HealthSouth shows there are similar characteristics of the Canadian Nortel and US companies fraud. The comparison discussed the common traits within the corporate culture of these companies that allowed these corporate frauds to rob investors of their wealth. Although, these traits may serve as signs that would allow opportunists to fulfill their self-interest, there will likely be new schemes developed that would facilitate future fraudulent activity.

Regulation has been implemented to serve as preventative measures to reduce fraud. Although, regulation is necessary, it needs to include consideration of ethical behavior. In earlier years law gave consideration to ethics but then moved to a separation of law and ethics. Within the current environment there is more cohesiveness between law and ethics. Fraud has been a part of the capital markets since the concept of incorporation and the separation of ownership and management. Ideally there would be no fraud; however, this concept given human nature is likely unrealistic.

Part two of this paper attempts to address the underlying problem related to the unethical behavior that led to losses of millions. Pressure and education are identified as key factors. Pressure is one of the elements that are present when an individual makes a decision to commit a fraud. Studies show that increasing education in ethics serves to improve ethical behavior of participants. It may then take more pressure before an individual moves toward fraudulent behavior. Based on this increased ethical education is recommended. There will always be individuals that behave unethically. Regulation has been used and will likely continue to be a resource as prevention against those who choose to behave unethically. Early introduction to a strong ethical base for our youth and education will serve to reduce the occurrence of unethical behavior.

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**ASB 2012
Ethics & Social Issues Abstract**

A Response to Gauntlett's 'ten things wrong with the media effects model'; A Broader Understanding

Tammy Oulton
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The effect of media violence has been widely debated. The public's insatiable appetite and ever growing exposure to media continues to make the debate surrounding media effects relevant. Although a consensus among researchers may never be possible a better understanding of the research is necessary. This paper is a response to Gauntlett's article 'Ten Things Wrong with the Media Effects Model'.

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Measuring Efficiency of the Banking Industry Before and After the Recent Financial Crisis: Some International Evidence

The recent financial crisis has plagued banking institutions around the world. Using a non-parametric (Data Envelopment Analysis) approach, we measure operating and profit efficiency of 21 commercial banks from five countries during 2004-2010. The results suggest that for the most part there is no statistically significant difference in the efficiency scores before and after the crisis. We found that both sets of efficiency scores are high which limits the scope for any further efficiency improvements of the sampled banks either in terms of operations or profitability. An examination of financial ratio reveals that all the sampled banks increased their capital adequacy and loan loss provisions in the post-crisis period.

Introduction

During the last two decades several major industrial and emerging economies have been plagued by severe banking failures. A study by the International Monetary Fund (IMF) reported that more than 130 of the IMF's 180-plus member countries had experienced serious banking problems between 1980 and 1995 (Lindgren, Garcia and Saal, 1996). The recent financial crisis has adversely affected banking institutions around the world and plunged many of the world's largest banks into deep crises. Today, Europe is in the midst of a banking crisis that started with Greece and has since moved to Italy, Spain and beyond. The concurrent occurrence of the crisis across countries has given rise to widespread fears of contagion or systemic risk in the international banking system that could disrupt credit flows among households and business enterprises, reduce investment, consumption, confidence in the system and likely force viable firms into bankruptcy.

Using data envelopment analysis (DEA), we measured efficiencies (both operating and profitability) of the big six Canadian banks in comparison with 15 other banks from Australia, Bangladesh, and the United States before, during and after the financial crisis. The objective of this study is to examine if there is any significant change in the efficiency level in the sampled banks during the study period (2004-2010).

Literature Review

A number of studies have sought to examine banking crises around the world. Some of these studies are country-specific while others focus on regions. Some have measured the performance of the banking industry before and after a financial crisis. For example, using bank-level data from all the OECD and several developing and transition economies, Demirgüç-Kunt, Detragiache and Gupta (2006) examined how banks perform during a crisis and whether asset

quality improves, the structure of assets and liabilities change, or whether operating efficiency improves following a crisis. Ratnovski and Huang (2009) analyze the pre-crisis balance sheet structures of the largest commercial banks in OECD countries and find that banking distress can be explained through three pre-crisis financial ratios – equity-to-asset ratio, balance sheet liquidity and funding structure. Berger and Humphrey (1997) commissioned a study that surveys 130 studies from 21 countries to empirically estimate the efficiency of these institutions and found that overall, depository financial institutions (banks, S&Ls, credit unions) experience an average efficiency of around 77% (median 82%). Pastor, Pérez, and Quesada (1997) studied 168 US and 259 European banks from Austria, Spain, Germany, Britain, Italy, Belgium and France and found that values of the efficiency parameters for these countries are quite different. For instance, France, Spain and Belgium appear as the countries with the most efficient banking systems, whereas the UK, Austria and Germany show the lowest efficiency levels.

However, some other studies examined the strength of the banking industry of a particular economy. For example, Ratnovski and Huang (2009) analyzed the fundamentals and performance of Canadian banks against a sample of 72 major commercial banks in other OECD countries (i.e. US, UK, Australia, and Switzerland) and concluded that the resiliency of Canadian banks during the financial crisis was largely a combination of sound fundamentals (for instance, sizeable and stable retail deposits, limited exposure to more volatile money markets and less securitized funding) and a strong regulatory framework. In another study, the Centre for the Study of Financial Innovation (CSFI) ranked capital availability as the 24th most significant risk facing the banking system in Canada versus number six in the world. This suggests that even if market conditions worsen, Canadian banks believe they are well prepared to handle that storm (Canadian Banks, 2010).

Indeed, Canada's shared system of financial regulation and supervision between the Department of Finance and other federal financial regulatory authorities, including the Bank of Canada, the Office of the Superintendent of Financial Institutions (OSFI) and the Canada Deposit Insurance Corporation (CDIC) proved valuable during the global financial crisis.

Moreover, an oligopolistic banking structure with a few Schedule I banks, high entry barriers (since the Federal government limits entry) put Canadian the banking industry in a strong position. Bordo, Redish and Rockoff (2010) argue that the comparative stability of the Canadian banking system emerged out of its very different financial structure with large financial institutions whose size and diversification enhanced their robustness. Dissimilar to Canada, the US has a fragmented banking system, with labyrinthine regulations, which created small, fragile financial institutions. For example, the United States has 7,268 FDIC-insured commercial banks as of June 21, 2012.

Efficiency Studies Using Data Envelopment Analysis (DEA)

Among various measures of studying efficiency, we have focused only on studies that used DEA in the sampled countries. For example, in Canada, Yang (2009) studied the operating efficiency of 240 branches of one big bank in the Greater Toronto Area. In another study, Yang and Cao (2010) studied the seven largest Canadian Schedule I banks to obtain the efficiency scores during the period 1998-2007. Asmild, Paradi, Aggarwall and Schaffnit (2004) studied production efficiency of the five largest Canadian banks. Parkan (1987) analyzed the production efficiency of the 35 branches of a Canadian commercial bank.

Abbott, Wu and Wang (2010) studied the performance of Australian banks since the deregulation of the Australian financial system in early 1980s. Avkiran (1999) used two DEA models to examine the efficiency of Australian trading banks for the period 1986-1995. Sturm and Williams (2004) used DEA to compare the efficiency of foreign banks with the domestic banks in Australia.

By using DEA, Barr, Killgo, Siems and Zimmel (2002) evaluated the productive efficiency of the US commercial banks from 1984 to 1998. Golany and Storbeck (1999) performed multiperiod DEA to study the efficiencies of selected branches of a large US bank over six consecutive quarters (second quarter of 1992 to the third quarter of 1993). Seiford and Zhu (1999) did the profitability and marketability analysis of the top 55 US commercial banks. Sherman and Gold (1985) and Sherman and Ladino (1995) also studied the efficiency of some of the US banks.

There are a number of DEA based studies on Europe and specifically on the Greek banking industry, although most of these studies are bank branch performance related. For example, Allen and Rai (1996) measured the operating efficiency of commercial and savings banks from the EU, Norway and Switzerland. Girardone, Nankervis, and Velentza (2009) measured the operating efficiency of banks from 54 countries, including 15 EU countries. Pastor, Lovell, and Tulkens (2006) have studied profit efficiency of 573 branch offices of a European saving bank. Aggelopoulos et al. (2010) studied both the production and profit efficiency of some branches of a large Greek bank. In another study, Athanassopoulos and Giokas (2000) used DEA in the Greek commercial banks to assess the performance branches of Greek commercial banks. In a more recent study, Gaganis and Pasiouras (2009) have studied profit efficiency of 458 branches of a Greek commercial bank. Giokas (2008) studied the production, transaction and profit efficiency of 44 branches of a Greek commercial bank whereas Vassiloglou and Giokas (1990) studied the transaction efficiency of 20 branches of a Greek commercial bank. Other studies include Halkos and Salamouris (2004) and Noulas, Glaveli and Kiriakopoulos (2008).

Unlike the developed economies, fewer studies have been conducted so far to assess the performance efficiency of the banking industry in emerging economies using DEA. To our knowledge no such study is being undertaken in the banking industry of Bangladesh.

Research Methodology

Model Specification

We used a non-parametric method, called DEA to measure both operating and profit efficiency. DEA is a multi-factor productivity analysis tool for measuring the relative efficiencies of a homogenous set of decision-making units (DMUs). DEA assists in identifying which set of DMUs may be considered as best practice, which are given a rating of one and efficiency scores of other units are assigned by comparing them to best practice units (see Lovell and Schmidt, 1988; Coelli, Rao, O'Donnell and Battese, 2005). Since its introduction by Charnes, Cooper, and Rhodes (1978), DEA has been used in several studies to assess comparative efficiencies of banks around the world.

DEA uses two return to scale technologies, such as constant return to scale (CRS) and variable returns to scale (VRS). The CRS assumption is appropriate when all firms are operating at an optimal scale (Charnes et al., 1978). However, imperfect competition, government regulations, constraints on finance, etc., may cause a firm to operate at sub-optimal levels (Coelli et al., 2005). Since we understand banks do perform at a sub-optimal level, like Afriat (1972), Färe, Grosskopf,

and Logan (1983) and Banker, Charnes and Copper (1984) we also considered VRS model for our study.

Since we are concerned about technical efficiency (TE), we estimated cost efficiency by running the following cost minimization DEA:

$$\min_{\lambda, x_i} w_i' x_i^*, \text{ subject to : } -y_i + Y\lambda \geq 0, x_i^* - X\lambda \geq 0, N1'\lambda = 1, \lambda \geq 0$$

where w_i is a vector of input for the i th DMU and x_i^* is the cost-minimizing vector of input quantities for the i th DMU, given the input prices w_i and the output levels y_i (Coelli et al., 2005). The total cost efficiency (CE) for the i th DMU would be calculated as:

$$CE = w_i' x_i^* / w_i' x_i$$

This is the ratio of minimum cost to observed cost. Allocative efficiency (AE) can be calculated as: $AE = CE/TE$

Data and Empirical Methodology

For our study, we chose 21 banks as DMUs from Australia, Bangladesh, Canada and the United States based on their market capitalization on December 31, 2010. The list of the sampled banks is included in Appendix A: List of the Sampled Banks.

There are two approaches to measuring the efficiency of financial institutions: (1) the production approach and (2) the intermediation approach. The production approach emphasizes commercial activities (i.e. producing deposit and loan accounts) taking place in the banks. The intermediation approach views banks as financial intermediaries that exchange financial assets between surplus units (savers, such as households) and deficit units (borrowers, such as businesses).

Both approaches use different sets of input and output variables in measuring the relative efficiencies of the DMUs. After reviewing earlier DEA studies used to measure efficiencies, we came up with the following sets of input and output variables for operating and profit efficiency.

Table 1: Selection of Input and Output Variables

Type of Efficiency	Inputs	Outputs
Production/Operating Efficiency	Premises and Fixed Assets Personnel/Operational Expenses Rent Expenses	Net Loans Total Assets Investments Total Deposits (Current & Savings) Deposits with other banks
Intermediation/Profit Efficiency	Interest Expenses Non-Interest (Fee) Expenses Loan Loss Provisions Depreciation	Net Interest Income Non-Interest (Fee) Income Net Profit

Besides the selection of input and output variables, another important consideration in DEA is the number of DMUs needed to conduct the analysis since the accuracy of the estimation depends on this number. Alirezaee, Howland, and van de Panne (1998) found that for 3 inputs and 3 outputs and constant return to scale, a reasonably accurate estimation of efficiency is possible if the number of units is at least a few hundred and should be roughly double for variable return to

scale. However, Dyson, Allen, Camanho, Podinovski, Sarrico and Shale (2001) argued that the number of units should be at least twice the product of the number of inputs and outputs. Due to resource constraints, we followed the Dyson et al. (2001) approach in determining the number of DMUs for our study. Since we have 3 inputs and 5 outputs for operating efficiency model, the minimum number of DMUs should be between 16 and 24. For the profit efficiency model, we needed between 14 to 21 DMUs since we have 4 input and 3 output variables. As mentioned earlier, we chose 21 banks from the sampled countries.

It is not uncommon in DEA studies that some data elements may be wrong or missing or that some DMUs are outliers and really do not belong to the dataset. Coelli et al. (2005) identified three reasons for the presence of outliers, such as typographical errors, invalid observations, and unusual observations. We corrected for typographical errors and invalid observations. Another concern is also how to treat missing values in the input or output variables since some DEA applications cannot handle missing variables (O'Neal, Ozcan, and Yanqiang, 2002; Smirlis, Maragos and Despotis, 2006). In our study, we used an average value of the missing variables in different periods to estimate the exact approximation of the missing values.

Another important concern is the size of the bank, since it has a significant impact on the operations of the DMU. As we have DMUs from very large banks from the developed economies to smaller banks from the developing economies, to fix this problem, we used the BCC model (Banker et al., 1984), which best fits individual banks.

Data Sources

We collected the required data from the annual reports of the sampled banks. We relied on EDGAR for the US banks, and SEDAR and the Infomart database for Canadian banks. Our data set includes financial statements of the sampled banks. In other cases, we collected the annual reports from the respective bank websites.

Besides information on input-output variables, we also collected information about some selective ratios and performance measures of bank performance: (1) Asset Quality (i.e. Loan Loss Reserve to Gross Loans and Impaired Loans to Gross Loans); (2) Capital (i.e. Tier 1 Capital); (3) Operations (i.e. Net Interest Margin, Return on Average Assets and Return on Equity); and (4) Liquidity (i.e. Net Loans to Total Assets and Net Loans to Total Deposits) to analyze the performance of the sampled DMUs along with their DEA scores. Demirgüç-Kunt et al. (2006) also relied on the similar measures.

The results were obtained with the use of LIMDEP Version 9.0 software. A brief description of the LIMDEP computer program is provided in its Reference Guide (Greene, 2007).

Results

Following Portela and Thanassoulis (2007) and Aggelopoulos et al. (2010), we calculated average efficiency scores for each of the DMUs, before (Period A: 2004-2007) and after the 2008 financial crisis (Period B: 2009-2010), since our objective was to identify DMUs that showed consistent efficient or inefficient performance during these two periods. However, we did not attempt to explain the reasons why a particular DMU perform better or worse, although we tried to relate the efficiency scores with the financial performance of the banks.

Summary of Descriptive Statistics

Descriptive statistics of the two DEA models (pertaining to operating and profit efficiency) for the period before and after the 2008 financial crisis (denoted as Periods A and B, respectively) are reported in Table 2 and Table 3 respectively. The detailed efficiency scores are available on request.

We reported higher operating and profit efficiency scores during the study period. For example, the average operating efficiency of the sampled DMUs ranges from 91.13% (input-oriented) and 91.48% (output-oriented) in 2010 to 95.38% and 95.79% in 2004 respectively. The mean profit efficiency scores of the sampled DMUs before the financial crisis (2004-2007) was 88.72% (input-oriented) and 89.26% (output-oriented) and slightly went up to 90.34% and 90.28% after the financial crisis.

The possible explanations of higher efficiency scores may be the selection of the sampled banks and/or input and output variables since DEA results are sensitive to the selection of inputs and outputs and the number of DMUs under consideration (Alirezaee et al., 1998; and Berg (2010). Since we chose the largest market-cap and the best performing banks from the sampled countries, necessarily we can expect higher efficiency scores.

Operating Efficiency Results

Table 2 shows both the input-oriented (IO) and output-oriented (OO) operating efficiency scores of the sampled banks in different countries during 2004-2010. Appendix B: Operating Efficiency Scores and Rankings has the individual bank efficiency scores with ranks.

Table 2: Operating Efficiency Scores

	Period B				Period A									
	2010		2009		2008		2007		2006		2005		2004	
	IO	OO	IO	OO	IO	OO	IO	OO	IO	OO	IO	OO	IO	OO
All														
Mean	0.911	0.914	0.945	0.954	0.945	0.945	0.962	0.955	0.969	0.951	0.962	0.956	0.953	0.957
SD	0.123	0.120	0.124	0.075	0.133	0.109	0.071	0.087	0.065	0.111	0.082	0.091	0.093	0.084
Australia														
Mean	.978	.978	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	.988	.993	1.000	1.000
SD	.043	.043	.000	.000	.000	.000	.000	.000	.000	.000	.023	.012	.000	.000
Bangladesh														
Mean	.769	.775	.974	.943	.966	.917	.956	.913	.955	.885	.939	.919	.918	.919
SD	.132	.129	.028	.064	.052	.134	.067	.133	.071	.177	.085	.106	.134	.124
Canada														
Mean	.960	.966	.951	.965	.939	.948	.936	.948	.963	.965	.941	.941	.938	.948
SD	.061	.055	.076	.054	.093	.079	.101	.080	.089	.084	.124	.124	.100	.085
USA														
Mean	.976	.977	.860	.918	.884	.930	.969	.976	.970	.980	.999	.999	.979	.986
SD	0.040	0.039	0.237	0.125	0.258	0.156	0.068	0.053	0.058	0.038	0.001	0.000	0.041	0.027

Note: IO = Input-Oriented DEA Model, OO = Output-Oriented DEA Model, SD = Standard Deviation

The annual mean DEA scores of the sampled banks range from 91.13% (input-oriented) and 91.48% (output-oriented) in 2010 to 95.38% and 95.79% in 2004 respectively. We took the average of the operating efficiency scores of all the DMUs before (2004-2007), during (2008) and after (2009-2010) the 2008 financial crisis. Average operating efficiency (input-oriented and output-oriented) of the DMUs appears to have decreased during the financial crisis and continues to deteriorate further after the financial crisis.

In the following section, we provided the results for the individual countries with the findings of the country-specific studies.

Table 2.1: Avg. Operating Efficiency Scores Before, During & After the Financial Crisis

	Period B (2009-2010)		2008		Period A (2004-2007)	
	IO	OO	IO	OO	IO	OO
All	0.928	0.934	0.945	0.945	0.961	0.955
Australia	0.989	0.989	1.000	1.000	0.997	0.998
Bangladesh	0.872	0.859	0.966	0.917	0.942	0.909
Canada	0.956	0.966	0.939	0.948	0.945	0.950
United States	0.918	0.947	0.884	0.930	0.979	0.985

Note: IO = Input-Oriented DEA Model, OO = Output-Oriented DEA Model

Australia

From Table 2.1 we noted that the efficiency scores for Australian banks, while high, went down slightly after the financial crisis. The operating performance of Australia and New Zealand Banking Group went down after the financial crisis. However, the other banks (i.e. Commonwealth Bank of Australia, National Australia Bank and Westpac Banking Corporation) have performed consistently over the period. Abbott et al. (2010) examined the productivity of a sample of Australian banks and found significant productivity improvements in the strong growth periods of the mid 1990s and 2000s. In another study, Sturm and Williams (2004) found that average technical efficiency of major Australian banks ranged from 0.73 (1991) to 0.94 (2000). With average input efficiency in this study of around 80%, this indicates that the Australian banking system could reduce inputs by approximately 25% without changing output levels.

Bangladesh

The average operating efficiency of the Bangladeshi banks went down significantly after the financial crisis. To the best of our knowledge, there are currently no DEA studies on Bangladesh's banking industry. Regarding the results for individual banks, the operating efficiency score of National Bank Ltd. and Pubali Bank Ltd. are much lower relative to others in the sample. The operating efficiency of some banks (i.e. Dutch Bangla Bank Ltd. and Islami Bank Bangladesh Ltd.) is consistent throughout the study period while some banks' operating efficiency went down after the banking crisis (i.e. United Commercial Bank Ltd. and AB Bank Ltd.).

Canada

The Canadian banking industry improved its operating efficiency after the financial crisis, although the efficiency score went down slightly during the financial crisis. With two exceptions (i.e. Bank of Montreal and Canadian Imperial Bank of Commerce), the operating efficiency of some other Canadian banks (i.e. National Bank of Canada, The Bank of Nova Scotia and The

Toronto-Dominion Bank) is consistent over the study period. However, operating efficiency significantly improved for some banks (i.e. Bank of Montreal and Canadian Imperial Bank of Commerce) after the banking crisis.

Yang and Cao (2010) measured the operating efficiency of the seven largest Canadian Schedule I banks during 1998-2007 and found that Canadian Western Bank (operated with 100% efficiency consistently), Royal Bank of Canada (a little bit less than full efficiency in the early period) and Scotia Bank (full efficiency in the latter period) performed very well during the study period. However, Canadian Imperial Bank of Commerce and National Bank of Canada did not perform as efficiently as the former three banks. In a previous study, Yang (2009) measured the technical efficiency of 240 branches of a big Canadian bank in the Greater Toronto Area and confirmed that the average efficiency score is 0.89, which implies that the bank branches could use about 11 percent less labour and expenses to produce their outputs. Among 113 efficient branches, 4 branches operate under increasing-returns-to-scale, 66 branches operate under constant-returns-to-scale, and the remaining 43 branches operate under decreasing-returns-to-scale. Howland and Rowse (2006) in a study of 162 branches of Canadian banks documented that the lowest Canbank branch score is 0.96.

United States

The average operating efficiency scores for US banks went down significantly during and after the financial crisis. The operating efficiency score of the sampled US banks (i.e. Bank of America, Citigroup Inc., and Goldman Sachs) are consistent over the study period except Morgan Stanley and Wells Fargo & Co. However, the operating efficiency score and rank of these two banks have improved lately (after the banking crisis).

Profit Efficiency Results

Several studies, such as Aggelopoulos et al. (2010); Gaganis and Pasiouras (2009); Giokas (2008); Noulas et al. (2008); Wu et al. (2006); Seiford and Zhu (1999) have studied the profit efficiency of the banking industry in Greece, Canada, and the United States. Table 3 shows the profit efficiency scores of the sampled banks during 2004-2010. Individual banks' scores and ranking can be found at Appendix C: Profit Efficiency Scores and Rankings.

Table 3: Profit Efficiency Scores

	Period B (2009-2010)						Period A (2004-2007)							
	2010		2009		2008		2007		2006		2005		2004	
	IO	OO	IO	OO	IO	OO	IO	OO	IO	OO	IO	OO	IO	OO
All														
Mean	0.903	0.902	0.677	0.676	0.580	0.580	0.804	0.802	0.707	0.728	0.904	0.902	0.887	0.892
SD	0.432	0.434	0.742	0.744	0.808	0.808	0.587	0.591	0.714	0.668	0.425	0.435	0.465	0.443
Australia														
Mean	0.983	0.986	0.989	0.990	0.963	0.970	1.000	1.000	0.996	0.996	1.000	1.000	1.000	1.000
SD	0.033	0.027	0.021	0.018	0.056	0.045	0.000	0.000	0.007	0.007	0.000	0.000	0.000	0.000
Bangladesh														
Mean	1.000	1.000	1.000	1.000	0.990	0.980	1.000	1.000	0.986	0.916	1.000	1.000	0.986	0.971

SD	0.000	0.000	0.000	0.000	0.023	0.047	0.000	0.000	0.033	0.204	0.000	0.000	0.033	0.070
Canada														
Mean	1.000	1.000	0.975	0.976	0.959	0.965	0.953	0.957	0.990	0.990	1.000	1.000	1.000	1.000
SD	0.000	0.000	0.045	0.044	0.098	0.085	0.088	0.080	0.022	0.022	0.000	0.000	0.000	0.000
USA														
Mean	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.976	0.986	1.000	1.000
SD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.026	0.000	0.000

Note: IO = Input-Oriented DEA Model, OO = Output-Oriented DEA Model, SD = Standard Deviation

From Table 3.1, average profit efficiency scores (both input-oriented and output-oriented) of the DMUs have decreased during the financial crisis although continues to improve after the financial crisis. For example, the annual mean DEA scores of the sampled banks before the financial crisis (2004-2007) was 82.60% (input-oriented) and 83.17% (output-oriented) and went down to 58.04% and 58.02% respectively during the financial crisis. Although there is a slight decline in the profit efficiency score, unlike operating efficiency, the sampled banks did well in terms profit efficiency during the period, even during or after the financial crisis.

Table 3.1: Avg. Profit Efficiency Scores Before, During and After the Financial Crisis

	Period B (2009-2010)		2008		Period A (2004-2007)	
	IO	OO	IO	OO	IO	OO
All	0.7903	0.7897	0.5804	0.5802	0.8260	0.8317
Australia	0.9862	0.9885	0.9631	0.9706	0.9991	0.9991
Bangladesh	1.0000	1.0000	0.9903	0.9806	0.9931	0.9719
Canada	0.9879	0.9882	0.9597	0.9652	0.9860	0.9871
United States	1.0000	1.0000	1.0000	1.0000	0.9940	0.9967

Note: IO = Input-Oriented DEA Model, OO = Output-Oriented DEA Model

Australia

All the Australian banks performed efficiently except the recent (2010) performance of Australia and New Zealand Banking Group. After the banking crisis, the profit efficiency of Australia and New Zealand Banking Group and Westpac Bank has declined. However, the difference between the profit efficiency scores before and after the banking crisis is statistically significant. Avkiran (1999) measured the overall profit performance of the Australian banking industry and confirmed that just like operating efficiency, the profit efficiency of the Australian banks have also improved during the deregulated period.

Bangladesh

There are almost no changes in the profit efficiency of the Bangladeshi banks before, during and after the financial crisis. The efficiency score of all the sampled banks are 1.00 except Dutch Bangla Bank Ltd., whose profit efficiency rank went down during the banking crisis.

Canada

The profit efficiency of Canadian banks decreased slightly during the financial crisis and bounced back after the financial crisis. With two exceptions (i.e. Bank of Montreal and Canadian Imperial Bank of Commerce), the profit efficiency of other banks (i.e. National Bank of Canada, Bank of Nova Scotia and the Toronto-Dominion Bank) is consistent over the study period. However, the profit efficiency of Bank of Montreal and Canadian Imperial Bank of Commerce has significantly improved after the banking crisis. Howland and Rowse (2006) found that in the output maximization model, 90 branches had lower scores than 0.96.

United States

The profit efficiency scores of the sampled US banks are consistent over the study period except Bank of America and Citigroup Inc., which have incurred net losses in recent years. We suspect that the bailout funding might played a role here. For example, the US Treasury Department invested about \$200 billion in hundreds of banks through its Capital Purchase Program in an effort to prop up capital and support new lending. Out of this, Wells Fargo, JP Morgan Chase and Citigroup each received \$25 billion, followed by Bank of America (\$15 billion) and Morgan Stanley and Goldman Sachs each \$10 billion (Bailed Out Banks, 2011). Seiford and Zhou (1999) analyzed the profitability of the top 55 US banks in 1995 and reported that almost 90% of the banks were inefficient in terms of profitability.

An important issue is to evaluate the reliability of the DEA model over time, i.e., does the efficiency scores perform as a consistent measure? For this purpose, we did a t-test of the mean operating and profit efficiency scores during pre- and post-crisis periods. We found that except for Canada, there is no statistically significant difference between average operating efficiency scores before and after the crisis, which invalidates any ranking based on operating efficiency. We also found that there is no statistically significant difference between average profit efficiency scores during pre- and post-crisis periods except Australian banks.

Incorporating DEA Results with Ratio Analysis

We noticed that all the sampled banks have increased their Tier 1 capital and loan loss reserve ratios in the post-crisis period relative to the pre-crisis period, which indicates a stricter regulatory requirement to hold more equity to tackle any further economic crisis. Our findings are in line with Yeh (1996) that banks with higher DEA scores also have higher ratios on capital adequacy, asset utilization and profitability efficiency, and lower ratios in financial leverage and liquidity than those with lower DEA scores. However, we also noticed that the sampled banks' profitability (indicated by ROE) went down although they have a higher net interest margin. With an exception to the Australian banks, majority of the sampled banks are conservative in banking practices since they have lower net loans to total assets and net loans to total deposit ratios.

Relevant financial ratios for individual countries are provided below.

Australia

The Tier 1 capital (indicator of capital adequacy) of the Australian banking industry has increased after the financial crisis. Although the net interest margin has increased over the years, their profitability has decreased after the financial crisis. Australian banks appear to have higher net loans to total deposits ratios indicating that these banks rely more on borrowed funds. At the same time, the Australian banking industry has increased the reserve ratio for loan losses for any

further economic crisis. The performance of the four major Australian banks went slightly down during the post-crisis period, which is also evidenced by the consistent efficiency scores (both operating and profit). Abbott et al. (2010) document that with the exception of the period of recession (1991-92), the performance of the four major Australian banks (i.e. ROA and ROE) has been fairly creditable. However, over the period 1983 to 2009 the ratio of operating expenses to total assets of the four banks appears to be driven down consistently. Avkiran (1999) found that in the early 1990s the Australian banks emerged as more efficient institutions with rising mean DEA scores.

Table 6.1: Financial Ratios – Australia

	Ratios	Period B		Period A		
		2010	2009	2008	2007	2006
Asset Quality	Mean Loan Loss Reserve/Gross Loans	1.09	1.06	0.69	0.54	0.61
	Mean Impaired Loans/Gross Loans	1.23	1.03	0.39	0.21	0.23
Capital	Mean Tier 1 capital (in million AUD)	30780	30093	24195	23294	21405
Operations	Mean Net Interest Margin	2.08	2.14	1.88	1.99	2.07
	Mean Return on Average Assets	0.87	0.64	0.88	1.09	1.09
	Mean Return on Equity	14.55	11.60	17.08	19.90	19.27
Liquidity	Mean Net Loans/Total Assets	71.90	73.58	72.34	73.33	73.99
	Mean Net Loans/Total Deposits	114.70	114.62	112.87	118.34	117.48
Input Oriented DEA	Mean Operating Efficiency Score	0.9780	1.0000	1.0000	1.0000	1.0000
	Mean Profit Efficiency Score	0.9831	0.9892	0.9631	1.0000	0.9963
Output Oriented DEA	Mean Operating Efficiency Score	0.9784	1.0000	1.0000	1.0000	1.0000
	Mean Profit Efficiency Score	0.9862	0.9908	0.9706	1.0000	0.9963

Bangladesh

The sampled banks in Bangladesh have increased their Tier 1 capital levels to almost thrice the levels of the pre-crisis period. Although net interest margin is consistent over the years, their profitability decreases after the financial crisis. The banks became more conservative in disbursing loans after the financial crisis as evidenced by lower net loans to total deposits ratio. However, the Bangladeshi banks have also increased the reserve ratio for loan losses for any further economic crisis. The performance of the six major Bangladeshi banks has gone down after the financial crisis, which is also evidenced by the decreased efficiency scores (both operating and profit).

Table 6.2: Financial Ratios – Bangladesh

	Ratios	Period B		2008	Period A			
		2010	2009		2007	2006	2005	2004
Asset Quality	Mean Loan Loss Reserve/Gross Loans	2.88	2.41	2.20	2.81	2.33	2.79	4.74
	Mean Impaired Loans/Gross Loans	0.14	0.11	0.05	0.06	0.10	0.15	0.20
Capital	Mean Tier 1 capital (in million BDT)	11648	8180	5809	4444	3829	3001	2371
Operations	Mean Net Interest Margin	3.38	3.79	4.14	3.90	3.35	3.16	2.92
	Mean Return on Average Assets	2.80	2.11	1.89	1.93	1.29	1.04	0.65
	Mean Return on Equity	24.04	28.50	28.54	30.68	22.44	20.27	13.81
Liquidity	Mean Net Loans/Total Assets	67.48	68.59	70.01	67.93	68.31	67.72	62.32
	Mean Net Loans/Total Deposits	79.52	81.63	82.82	80.87	79.20	79.17	73.45
Input Oriented DEA	Mean Operating Efficiency Score	0.7698	0.9747	0.9669	0.9563	0.9553	0.9397	0.9189
	Mean Profit Efficiency Score	1.0000	1.0000	0.9903	1.0000	0.9862	1.0000	0.9862
Output Oriented DEA	Mean Operating Efficiency Score	0.7750	0.9431	0.9173	0.9139	0.8856	0.9194	0.9194
	Mean Profit Efficiency Score	1.0000	1.0000	0.9806	1.0000	0.9165	1.0000	0.9711

Canada

The Tier 1 capital level of the Canadian banking industry has increased after the financial crisis. Although the Canadian banking industry has increased its net interest margin, its profitability has decreased after the financial crisis compared with pre-crisis levels. Also, there does not appear to be a significant change in banking practices as evidenced by the consistent net loans to total assets and net loans to total deposits ratios. In contrast with banks from other countries, the Canadian banking industry has a lower level of reserve ratio for loan losses over the entire study period. By and large, the performance of the six major Canadian banks has improved after the financial crisis, which is also evidenced by the increased efficiency scores (both operating and profit) during and after the financial crisis.

Table 6.3: Financial Ratios – Canada

	Ratios	Period B		2008	Period A			
		2010	2009		2007	2006	2005	2004
Asset Quality	Mean Loan Loss Reserve/Gross Loans	0.97	1.11	0.84	0.80	0.89	0.99	1.21
	Mean Impaired Loans/Gross Loans	0.73	0.75	0.37	0.17	0.19	0.24	0.30
Capital	Mean Tier 1 capital (in million CAD)	22595	21220	19339	16867	16573	14696	13674
Operations	Mean Net Interest Margin	1.80	1.78	1.65	1.56	1.64	1.85	2.01
	Mean Return on Average Assets	0.78	0.57	0.44	0.87	0.98	0.73	0.87
	Mean Return on Equity	15.94	11.28	9.12	19.53	21.33	15.45	18.15
Liquidity	Mean Net Loans/Total Assets	45.44	45.47	44.50	44.64	44.79	46.33	46.93

	Mean Net Loans/Total Deposits	58.26	59.03	59.31	57.14	55.78	58.25	60.05
Input Oriented DEA	Mean Operating Efficiency Score	0.9608	0.9516	0.9397	0.9361	0.9635	0.9417	0.9385
	Mean Profit Efficiency Score	1.0000	0.9757	0.9597	0.9532	0.9908	1.0000	1.0000
Output Oriented DEA	Mean Operating Efficiency Score	0.9668	0.9651	0.9489	0.9486	0.9654	0.9414	0.9480
	Mean Profit Efficiency Score	1.0000	0.9763	0.9652	0.9577	0.9908	1.0000	1.0000

United States

The US banking industry has also increased its Tier 1 Capital level. Although net interest margin has increased after the financial crisis, their profitability has decreased in the post-crisis period as opposed to the pre-crisis period. US banks appear to be more conservative in disbursing loans after the financial crisis as evidenced by lower net loans to total deposits ratio. However, the US banks have also increased the reserve ratio for loan losses for any unexpected future economic crisis. The performance of the five major US banks has gone down slightly after the financial crisis, which is also evidenced by the decreased operating efficiency scores. Barr et al. (2002) analyzed three general measures of US bank performance: return on average assets, the ratio of nonperforming loans to gross loans, and the ratio of gross loans to total assets. The level of nonperforming loans to total loans is significant and negatively related to the efficiency scores of the most and least efficient quartiles from 1984 through 1993.

Table 6.4: Financial Ratios – United States

	Ratios	Period B		Period A				
		2010	2009	2008	2007	2006	2005	2004
Asset Quality	Mean Loan Loss Reserve/Gross Loans	2.75	2.60	1.81	0.93	0.73	0.84	0.97
	Mean Impaired Loans/Gross Loans	3.05	2.94	1.47	0.49	0.29	0.30	0.44
Capital	Mean Tier 1 capital (in million USD)	125243	123378	103447	82348	81182	68680	63126
Operations	Mean Net Interest Margin	2.58	2.45	2.28	2.06	2.21	2.27	2.70
	Mean Return on Average Assets	0.68	0.59	0.01	0.79	1.29	1.24	1.22
	Mean Return on Equity	12.64	6.14	-1.46	13.23	21.14	18.93	17.86
Liquidity	Mean Net Loans/Total Assets	30.79	27.24	30.68	31.73	31.59	31.40	32.08
	Mean Net Loans/Total Deposits	45.59	43.93	46.47	45.55	45.90	44.57	47.11
Input Oriented DEA	Mean Operating Efficiency Score	0.9764	0.8607	0.8845	0.9694	0.9709	0.9995	0.9793
	Mean Profit Efficiency Score	1.0000	1.0000	1.0000	1.0000	1.0000	0.9760	1.0000
Output Oriented DEA	Mean Operating Efficiency Score	0.9774	0.9180	0.9302	0.9763	0.9808	0.9997	0.9861
	Mean Profit Efficiency Score	1.0000	1.0000	1.0000	1.0000	1.0000	0.9868	1.0000

Conclusion

The banking industry resides at the heart of an economy. The strength and stability of the banking industry is vital to the functioning of a viable global economy. This was made evident in the recent global financial crisis including current developments in Europe.

We found that there are no statistically significant changes in any of the efficiency measures during the study period, although there are some meager changes in both efficiency scores, which is similar to the findings of Fahlenbrach, Prilmeier, and Stulz (2011) that banks did not learn anything from previous financial crises.

At times, banks in some jurisdictions did well in an efficiency score but poorly in another. For example, Bangladeshi banks have a lower operating efficiency score in the post-crisis period but a higher profit efficiency score in the same period. We also found that all the sampled banks have increased their Tier 1 capital and loan loss reserve ratio in the post-crisis period due to rigorous regulatory requirements to tackle any further economic crisis. Surprisingly, the sampled banks' profitability (indicated by ROE) went down despite a higher net interest margin. Except the Australian banks, the remaining banks became conservative in their banking practices after the financial crisis indicated by lower net loans to total assets and net loans to total deposits ratios.

Appendices

Appendix A: List of the Sampled Banks

Bank Code (DMU)	Bank	Market Cap (in local currencies)
Australia		
DMU 1	Australia and New Zealand Banking Group (ASX: ANZ)	AUD 53.79 billion
DMU 2	Commonwealth Bank of Australia (ASX: CBA)	AUD 76.98 billion
DMU 3	National Australia Bank (ASX: NAB)	AUD 55.00 billion
DMU 4	Westpac Banking Corporation (ASX: WBC)	AUD 63.27 billion
Bangladesh		
DMU 5	AB Bank Ltd. (DSE: ABBANK)	BDT 24005.817 million
DMU 6	Dutch Bangla Bank Ltd. (DSE: DUTCHBANGL)	BDT 28055.000 million
DMU 7	Islami Bank Bangladesh Ltd. (DSE: ISLAMIBANK)	BDT 53616.317 million
DMU 8	National Bank Ltd. (DSE: NBL)	BDT 56095.837 million
DMU 9	Pubali Bank Ltd. (DSE: PBL)	BDT 29647.636 million
DMU 10	United Commercial Bank Ltd. (DSE: UCBL)	BDT 32373.233 million
Canada		
DMU 11	Bank of Montreal (TSX: BMO)	CAD 36.59 billion
DMU 12	Canadian Imperial Bank of Commerce (TSX: CM)	CAD 28.69 billion
DMU 13	National Bank of Canada (TSX: NA)	CAD 11.22 billion
DMU 14	Royal Bank of Canada (TSX: RY)	CAD 65.53 billion
DMU 15	The Bank of Nova Scotia (TSX: BNS)	CAD 55.78 billion
DMU 16	The Toronto-Dominion Bank (TSX: TD)	CAD 63.63 billion
United States		
DMU 17	Bank of America Corporation (NYSE: BAC)	USD 62.94 billion
DMU 18	Citigroup Inc. (NYSE: C)	USD 85.75 billion
DMU 19	Goldman Sachs Group, Inc. (NYSE: GS)	USD 51.42 billion
DMU 20	Morgan Stanley (NYSE: MS)	USD 31.53 billion
DMU 21	Wells Fargo & Co. (NYSE: WFC)	USD 135.23 billion

Appendix B: Operating Efficiency Scores and Rankings

Bank Code (DMU)	2010		2009		2008		2007		2006		2005		2004	
	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)
1	14 (.91)	15 (.91)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
2	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	18 (.95)	16 (.97)	1 (1.0)	1 (1.0)
3	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
4	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
5	19 (.69)	19 (.69)	1 (1.0)	1 (1.0)	18 (.99)	18 (.99)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	16 (.96)	18 (.94)	1 (1.0)	1 (1.0)
6	18 (.74)	18 (.75)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
7	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
8	20 (.68)	20 (.69)	17 (.95)	21 (.87)	20 (.92)	22 (.83)	20 (.87)	23 (.75)	22 (.83)	23 (.64)	21 (.79)	21 (.77)	21 (.67)	21 (.75)
9	21 (.64)	21 (.65)	19 (.94)	23 (.86)	21 (.87)	23 (.67)	21 (.85)	24 (.72)	20 (.89)	22 (.66)	20 (.87)	20 (.79)	19 (.83)	20 (.76)
10	17 (.84)	17 (.84)	18 (.95)	18 (.91)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
11	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	22 (.82)	21 (.83)	23 (.83)	21 (.86)	1 (1.0)	1 (1.0)	17 (.96)	17 (.95)	17 (.92)	18 (.93)
12	16 (.87)	16 (.86)	21 (.87)	20 (.88)	23 (.80)	20 (.85)	24 (.77)	22 (.82)	23 (.78)	21 (.79)	22 (.68)	22 (.68)	20 (.76)	19 (.80)
13	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
14	15 (.89)	14 (.93)	23 (.83)	19 (.90)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
15	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
16	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)		
17	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
18	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
19			1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
20	13 (.92)	13 (.93)	24 (.45)	24 (.71)	24 (.42)	24 (.65)	1 (1.0)	1 (1.0)						
21	1	1	22	22	1	1	22	20	21	19	15	15	18	17

	(1.0)	(1.0)	(.85)	(.87)	(1.0)	(1.0)	(.84)	(.88)	(.88)	(.92)	(.99)	(.99)	(.91)	(.94)
Mean	.915	.918	.949	.957	.950	.949	.966	.960	.970	.954	.960	.956	.958	.961
Standard Deviation	.121	.119	.117	.071	.125	.102	.068	.083	.061	.105	.081	.083	.089	.081
Minimum	.645	.653	.451	.716	.422	.651	.776	.724	.780	.647	.689	.741	.679	.753
Maximum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Note: IO = Input-Oriented DEA Model, OO = Output-Oriented DEA Model

Appendix C: Profit Efficiency Scores and Rankings

Bank Code (DMU)	2010		2009		2008		2007		2006		2005		2004	
	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)	IO Rank (Score)	OO Rank (Score)
1	18 (.93)	18 (.94)	19 (.95)	19 (.96)	19 (.88)	18 (.90)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)		
2	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
3	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
4	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	17 (.97)	17 (.97)	1 (1.0)	1 (1.0)	21 (.98)	21 (.98)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
5	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	23 (.91)	23 (.49)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
6	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	18 (.94)	19 (.88)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
7	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
8	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
9	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	18 (.91)	18 (.82)
10	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
11	1 (1.0)	1 (1.0)	20 (.88)	20 (.88)	20 (.75)	20 (.79)	22 (.77)	22 (.79)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)		
12	1 (1.0)	1 (1.0)	18 (.96)	18 (.96)	1 (1.0)	1 (1.0)	21 (.94)	21 (.94)	22 (.94)	22 (.94)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
13	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
14	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
15	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
16	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)		
17			1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
18	1 (1.0)	1 (1.0)					1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)	1 (1.0)
19	1 (1.0)	1 (1.0)												
20	1 (1.0)	1 (1.0)							1 (1.0)	1 (1.0)	21 (.90)	21 (.94)	1 (1.0)	1 (1.0)
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Mean	.996	.996	.990	.991	.977	.977	.987	.988	.993	.975	.995	.997	.980	.979
Standard Deviation	.016	.013	.027	.026	.059	.054	.048	.043	.020	.104	.021	.011	.065	.061
Minimum	.932	.944	.886	.888	.758	.790	.778	.798	.917	.499	.903	.947	.720	.785
Maximum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Note: IO = Input-Oriented DEA Model, OO = Output-Oriented DEA Mod

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Risk and Charitable Organizations: The Case of Atlantic Canada

Using panel data from 2003-2010 on charitable organizations in Canada we explore the implications that exposure to risk, in various guises, has on organizations' ability to meet their mandate. We run a random effects panel estimation focusing our attention on the case of Atlantic Canada in an effort to explore the idiosyncrasies that make it an interesting case study, and a microcosm of sorts for producing risk metrics in general. A comparative analysis is provided with the Canadian charitable sector as a whole to contrast the results and afford a context for discussion. Results suggest that diversification in revenue streams may in fact increase risk for charitable firms; and comprehensive modeling techniques, which categorize the entire Canadian market quite well, lead to increased noise in estimating exposure to risk for Atlantic Canada firms. The latter seem somewhat more sensitive to exogenous economic changes, when compared to the entire marketplace.

Introduction

To the extent that organizations can mitigate risk through prudent financial planning there is wide-held belief that such behavior should be seriously considered, if not inevitably enacted. From a normative perspective, mitigating downside risk can often be seen as a first-best response to the uncertainty of, e.g., market fluctuations, cost considerations notwithstanding. However, a problem with this discussion, as previous literature has shown, is that such behavior is often confined to the corporate sector since such firms are assumed to be operating under the auspices of profit maximization. In the world of not-for-profits, the question of risk management falls under a different tenant. What that tenant is precisely depends on the nature of the question being explored; for instance, maximizing services might be seen as the appropriate objective function under certain circumstances, while stakeholder satisfaction, or a subset therein, might be seen as a more appropriate measure in others. This difficulty may help explain why there has yet to be a systematic study on risk for this socially and economically important segment of the Canadian economy. In an effort to deal with, at least in part, this shortcoming, we examine the implications of risk, in various guises, on charitable organizations in Atlantic Canada and compare the results to the broader charitable sector in Canada.

To explore the implications of risk on charitable organizations we rely on the T3010, Registered Charity Information Return, forms for the years 2003-2010. These forms are required to be filed by all charitable organizations in Canada and contain a wealth of financial, and non-financial, information.¹ We use the seminal work on financial vulnerability of not-for-profit organizations in the United States as a starting point for the formation of our empirical framework (see, e.g., Trussel and Greenlee, 2000; Tuckman and Chang, 1991). The unifying measures of these studies are four financial ratios (equity, revenue concentration, administrative cost, and surplus margin), designed to explore the impact on the level of services delivered by the respective organizations. Additional work by Keating et al. (2005) expands on the number of variables, but still relies on financial statements for the requisite data; for instance, the authors now include, e.g., total debt and current ratios, dummies for insolvency risk, financial and funding disruption risk, etc., with the ultimately goal of predicting which firms will be/are financially vulnerable and those likely to experience financial distress.

The timeline for our study is chosen, in part, because of the rather dramatic market downturn in 2008 as a result of the subprime crisis. The downturn affords us the opportunity to examine firm behavior as a result of a rather significant, and systematic, negative externality. Likewise, the start date is sufficiently clear of any market implications of the internet bubble bursting in 2000-2001. Thus, 2003 should provide a sufficient proxy for normal operations and financing activity, such that any change in subsequent years is likely to be internally driven, rather than market-recovery driven; although, the latter will undoubtedly play some inevitable (supporting) role. Put simply, the timeline approximates a full business cycle and, as such, provides a nice window for exploring the implications of our study.

Findings reveal a number of interesting aspects to the charitable landscape that in some instances seem to run counter to their for-profit brethren. For starters, it appears that diversification in revenue streams, as illustrated by concentration ratios, does not typically help mitigate exposure to risk. While this goes against general convention where diversification is concerned, what is of further interest is that this tends to go against previous findings on not-for-profits in the United States, where greater concentration of revenues lead to an increase in financial vulnerability or distress. What's more, this finding also affords an interesting commentary with respect to sectoral differences as well. Results suggest religious organizations may find themselves in a unique diversification dilemma, if you will, that may otherwise be muted for other sectors, such as education and health. While this undoubtedly provides some evidence on the idiosyncrasies of risk exposure in charitable organizations it could also lend itself to an argument of crowding out of revenue streams as some authors have suggested (see, e.g., Andreoni and Payne, 2003, 2011a/b).

With respect to Atlantic Canada in particular, of the five models we ran, the ones that performed the best for Canada as a whole did rather poorly at explaining the charitable landscape for the four provinces that make up the region. A finding that may lend support for developing

¹ Andreoni and Payne, 2011a provide an excellent discussion of the disclosure requirements for the interested reader.

models with firm or location specific risk factors, rather than a “catch all” model for analytical ease; the latter may also cast doubt on any policy recommendations that claim to limit risk exposure to particular organizations as a means with which to protect the funding donation of voter-contributors. This is particularly noteworthy given the recent interest by the federal government in overhauling the funding formula for charitable organizations in Canada. Results show that Atlantic Canada is below the national average for insolvency risk and financial disruption; this is largely driven by changes within Newfoundland and Labrador, while the region is above average for both funding and program disruption, with the increased exposure being largely driven by the province of Nova Scotia. In fact, Nova Scotia often leads the way in terms of our risk metrics within the region. Finally, when the modeling is broken down between financial statement variables (ratios), sector, age and year effects, it is variables found on financial statements that often best categorize Atlantic Canada charities in terms of their exposure to risk. While this is somewhat consistent with the majority of the modeling for Canada, findings also suggest a great deal of significance in the comprehensive models that include these additional aspects, whereas for Atlantic Canada they just appear to increase noise.

The rest of the paper is organized as follows. First, we provide a brief background into the literature, before moving on to discuss the data. Our model and results are provided in the subsequent section, followed by some concluding remarks.

Background

As a general overview, Anheier (2005) outlines many of the theoretical approaches taken to explain the existence and behaviour of nonprofit organizations. List (2011) also provides an excellent survey of charitable market research, running the gamut from tax incentives, crowding out, experimental evidence, etc., and their impact on donations, demand, and giving. As a subset of this larger body, financial vulnerability and risk fall within two broadly defined categories of for-profit and not-for-profit (charitable), with the former making up the bulk of the research and being largely confined to the study of the United States. The empirical work on Canadian charitable organizations is somewhat in its infancy, but nonetheless headlined by some excellent recent work by Andreoni and Payne (2011a/b, 2003) that looks at various characteristics of crowding out of charitable contributions, which, while sharing a data source, is confined to a different research question than the one being proposed here.

The work on financial vulnerability of not-for-profit organizations was brought to the forefront by Tuckman and Chang (1991). While some work in this area had been done previously, Tuckman and Chang were the first to design a methodology to resolve the question of which not-for-profits in the United States were most likely to find themselves compromised financially. They did this by considering four operational criteria in their logit estimation: inadequate equity balances, revenue concentration, administrative costs and operating margins, and used data found on the annual Form 990. Their findings suggest that, while there are substantial differences depending upon how one categorizes or subcategorizes organizations, only a small percentage of not-for-profits are at risk to economic downturns; the group most at risk

appearing to be health care and support categories. Unfortunately, their empirical findings were only calculated for one year (1983), so are somewhat limited in scope.

Using the work of Tuckman and Chang as a springboard, research on not-for-profits has turned its attention to developing testable models of vulnerability (Greenlee and Trussel, 2000, 2001; Trussel, 2002). The work, which is largely consistent, relies on the methodology of Gilbert, Menon and Schwartz (1990) as a starting point and the National Center for Charitable Statistics (NCCS) for data. Greenlee and Trussel (2000) estimate a logit model with the latent dependent variable being equal to one if the organization is financially vulnerable and zero if it is not. Similarly, Trussel (2002) expands on this approach to include a measure of size and controls for sector. Independent variables, with their expected signs in brackets, are financial ratios for equity (negative), revenue concentration (positive), administrative costs (negative), and surplus margin (negative), with equity being found to be the only ratio that does not contribute significantly to a reduction in program expenditures (as a percentage of total revenues).

Finally, Keating et al. (2005) abandon the single-period logit approach of its predecessors in favor of using the discrete hazard model of Shumway (2001) and Hillegeist et al. (2004), which allows for multiple observations for each organization. They also introduce new variables, such as, e.g., total debt and current ratios, dummies for insolvency risk, financial and funding disruption risk, etc., with the ultimately goal of predicting which firms will be financially vulnerable and those likely to experience financial distress. Their model ends up performing better at predicting financial vulnerability and financial distress when compared to the works of Ohlson (1980), Altman (1968) and Tuckman and Chang (1991). However, whether the results are time dependent or not is difficult to assess, given the rather short timeline (1999-2000).

Data

Our data differ from previous studies in several important ways. First, the richness and completeness of the Canadian data is superior to that of the United States (Andreoni and Payne, 2011a). Second, the breadth of coverage and, in particular, the ability to formulate a longitudinal subset is something which U.S. studies have failed to replicate; the latter being important if we are to understand (and measure) an organizations vulnerability to adverse economic conditions. Finally, in addition to the systematic implications of risk, there are idiosyncratic, firm-specific decisions with respect to, e.g., operations that can mitigate or exacerbate exposure to certain types of risk.² The T3010 forms filed in Canada allow us to extend existing research in this direction.

The result of these differences is a much more detailed and comprehensive picture of risk in charitable organizations. As discussion in prior work has conveyed, studies in the United States have been subject to limitations on data quality and coverage. Our data affords, if you will, a more appropriate or full treatment of these models. A condition that up until this point has been, at best, only partly satisfied. For instance, while Greenlee and Trussel (2000) have NCCS data for

² This also provides a reason for choosing a random effects model over the alternative fixed effects.

1982-1983 and 1985 through 1995, they end up having to merge the data for each year in order to develop and test their logit model forgoing the benefits that a panel would have afforded. Keating et al. (2005) end up only having data for 1999/2000 and admit that such a relatively small timeframe is a detriment to testing their longitudinal methodology. The relative dichotomy that exists in the NCSS data, between those organizations with more than \$10 million in assets and those that are considerably smaller, is also a shortcoming. Specifically, the NCSS data has a reporting bias towards those organizations above \$10 million in assets, due to the regulations in the United States.³ Given that smaller organizations dominate the charitable landscape, this is particularly problematic in testing the efficacy of the models. No such issue exists with the Canadian data, which from an Atlantic Canada perspective is particularly important, given that most of the organizations are quite small.

We use data from 2003-2010 on charitable organizations in Canada. The data is taken from the T3010, Registered Charity Information Return, forms. These forms must be filed annually with Canada Revenue Agency (CRA) by all registered charities as part of the requirements of maintaining charitable (tax-exempt) status. As such, the data provide a comprehensive picture of all Canadian charities that we are able to track over a number of years. As mentioned above, the fact that our data coverage includes the rather dramatic market downturn in 2008 affords us the opportunity to examine firm behavior in response to a significant and systemic negative externality. Likewise, the start date of 2003 is sufficiently clear of any market implications of the internet bubble bursting in 2000-2001. As such, the window chosen should provide a sufficient proxy for normal operations and financing activity, such that any change in subsequent years is likely to be driven more by internal processes, rather than market recovery.⁴ In short, the timeline approximates a full business cycle and, as such, provides a nice window for exploring the implications of our study.

The entire data set consists of over 75,000 charities for each of the years 2003-2009, and around 58,000 in 2010.⁵ Charities run the gamut from small community organizations to large international ones. Table 1 shows the breakdown of revenue, with small firms being designated as those with annual revenue less than or equal to \$100,000, which signifies the hurdle point that exists between those that have to fill out section D of the T3010 and those that have to fill out the more detailed Section 6.

³ For a more in-depth discussion of the limitations of using NCSS data see Gordon, Greenlee and Nitterhouse (1999).

⁴ We acknowledge that, undoubtedly, market recovery will play some inevitable role. Nevertheless, the point is that the role should nonetheless be muted, given the timeline.

⁵ At the time of data collection, not all T3010 filings for 2010 had been received and processed by CRA. The details of the incomplete coverage for this one year are discussed below.

Table 1
Analysis of Total Revenue for Charitable Organization in Canada, 2003-2010

Year	Negative	Less than \$100,000	Total Reporting	% Small
2003	182	41,797	75,261	55.4%
2004	84	41,810	76,645	54.5%
2005	70	41,986	77,905	53.9%
2006	55	41,829	78,969	52.9%
2007	65	41,510	79,436	52.2%
2008	499	41,511	79,754	51.7%
2009	441	39,768	78,089	50.6%
2010	96	28,421	58,219	48.7%

Note: Columns represent the number of firms falling into the respective category

It should be noted that our sample for the 2010 reporting year is smaller than in preceding years. This is due to the fact that, at the time of data collection, some of the returns had not yet been compiled by CRA's Charities Directorate. That being said, we feel that the sample of reporting charities in this filing year is large enough and representative enough in terms of sectoral coverage to be included in this study without fear of introducing bias. It may also seem in the table above that our sample for 2010 is slightly weighted towards larger charities. However, it is interesting to note that prior to even 2008, where there clearly was an externality introduced into the equation, the percentage of smaller institutions was steadily declining. This could be because the growth in revenues of those located close to the \$100,000 threshold resulted in the organizations being pushed into the higher category. It could also be due to the attrition of organizations at the lower revenue levels outpacing those at the upper level (or the entrance at the lower level) or some combination therein.⁶

As one might expect, inequitable revenue distribution abounds between the provinces. This point is illustrated in Table 2, along with the percentage of charitable organizations found within the respective province (or group of provinces). As can be seen, Atlantic Canada contains approximately 10.5 percent of the charitable organizations (in total, 7,933) in Canada in 2008, with a little over 5.5 percent of the total revenue. Ontario by comparison, the province with the largest share of the charitable market, contains over three times as many organizations (26,060) and over 41 percent of the total revenue.

⁶ While it is not of paramount importance here that firms are experiencing negative revenues in certain instances, for a discussion on the phenomenon, the interested reader is directed to, John Daly, "Less than Zero: How Companies can end up with Negative Revenues," <http://www.theglobeandmail.com/report-on-business/rob-magazine/top-1000/less-than-zero-how-companies-can-end-up-with-negative-revenues/article2122112/>. [Accessed 1 August 2012]

Table 2
Percentage of Total Revenues and Charitable Organizations by Region, 2008

Province	Organizations (%)	Revenue (%)
Alberta	10.62	12.87
British Columbia	13.47	13.59
Manitoba	5.45	4.16
Ontario	34.59	41.15
Quebec	19.19	19.05
Saskatchewan	5.78	3.19
Atlantic Canada	10.53	5.70

Disaggregating revenue in Atlantic Canada further, Figure 1 shows that the organizations that have been around for more than 30 years, roughly 37 percent, control about 80 percent of the revenues within the represented provinces. Furthermore, it is interesting to note the somewhat uniform distribution of remaining organizations; when broken down into 5-year intervals, each contains roughly 10 percent of the organizations with a marginal share of revenues (the largest has roughly 6 percent). Finally, in terms of sectoral influence, education (35%) and health (46%) have the majority of the revenue in Atlantic Canada, while religion dominates the landscape in terms of sheer numbers (41%), with groups falling under the auspices of benefiting the community (22%) coming in a distant second. Figure 2 shows the breakdown of the respective categories.

Figure 1
Percentage of Organizations and Total Revenue, Atlantic Canada, by Longevity, 2008

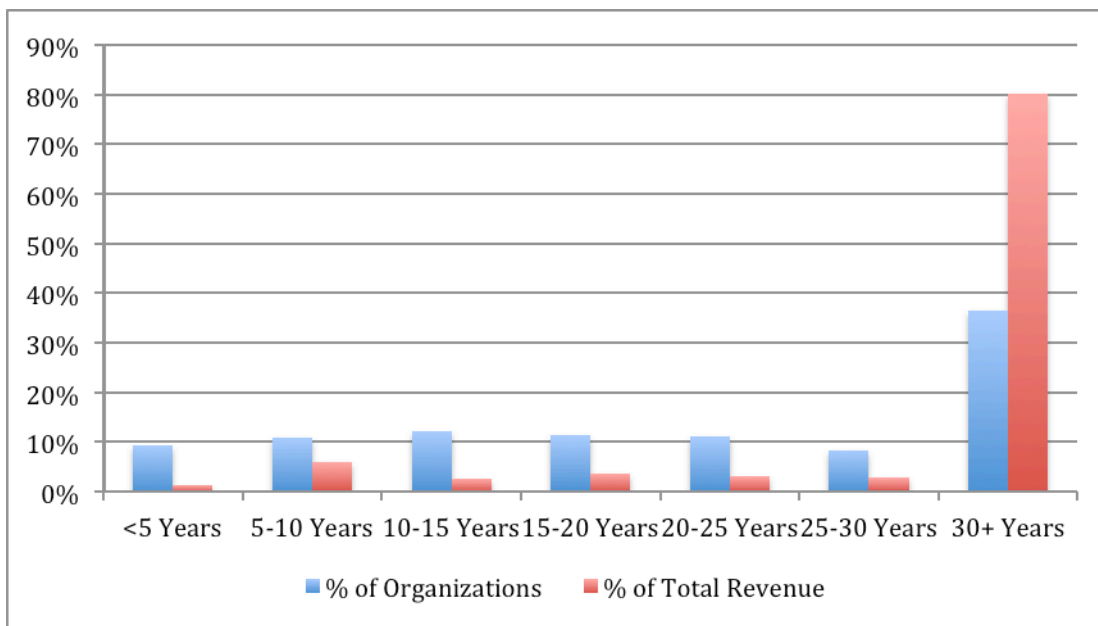
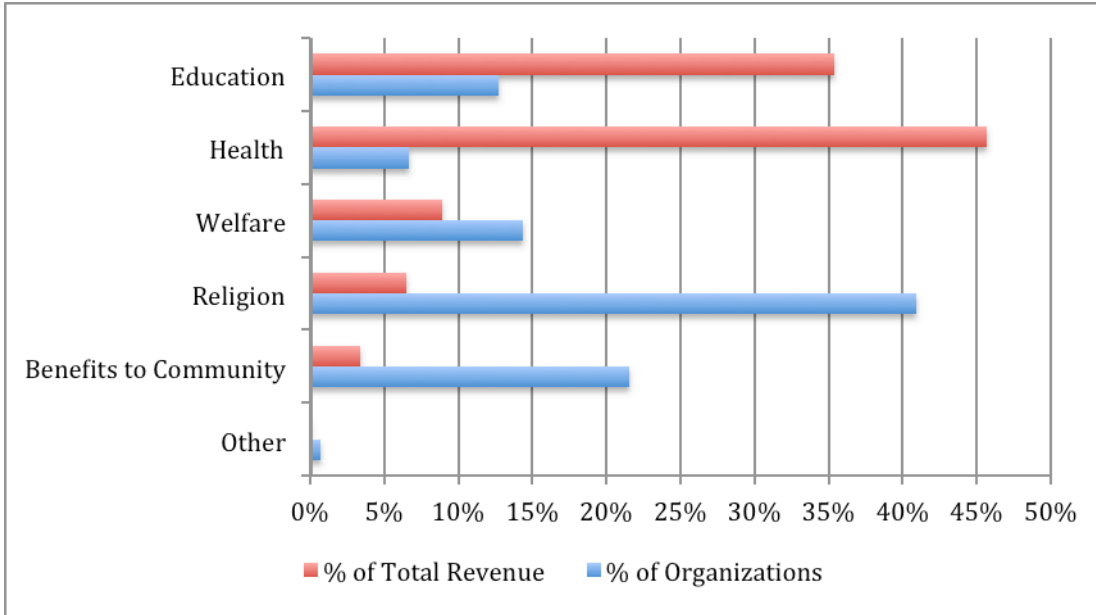


Figure 2
Percentage of Organizations and Revenues, Atlantic Canada, by Sector, 2008



Model and Results

To explore the concept of risk in charitable organizations we run a random effects panel estimation for years 2003-2009.⁷ Consistent with previous literature, we use financial statement information to compute various ratios as a proxy for the overall sustainability of the organization. For instance, the first four variables in our estimations in Table 3, respectively, can be seen as an overall proxy for financial health, a measure of diversification, a measure of surplus and cost cutting possibilities. The remaining ones, with the exception of size, are standard assessments in ratio analysis. To measure liquidity, we include current liabilities-to-current assets (CL/CA) as well as working capital-to-total assets (WC/TA). We also include net assets-to-total assets (NA/TA), total revenue-to-total assets (TR/TA) and net income-to-total assets to represent solvency, asset turnover and "profitability", respectively. Given the detail of our data, we are able to expand on previous studies to focus on the impact of sectoral distinction, year and age effects, as well. It is necessary to define these latter categories relative to a "base group" for each variable. As such, we define the impact of the sectors listed in relation to religion, the largest sector in terms of organizational numbers; year effects are defined in relation to the base year, 2003; and age effects are in relation to the largest group of charities in Atlantic Canada, which are those with a lifespan of greater than 30 years.

⁷ We leave out 2010 because our predicting variables end in 2009 (as they predict the following year). Given the number of observations in our sample, the random effects model was chosen over the fixed effects model to conserve degrees of freedom and to permit the use of time-invariant factors such as sector.

The specified models are designed to estimate different aspects of risk to charitable organizations and are consistent with previous studies on for-profit, as well as not-for-profit firms.⁸ Program disruption looks at organizations experiencing a 25 percent drop in program expenditures year-over-year and is designed to expose firms realizing negative, and statistically significant, impacts in their ability to meet their mandate (i.e. provide expressed services). Insolvency risk examines those firms whose total liabilities are greater than total assets in the subsequent year, while financial and funding disruption are measured as a 25 percent drop in net assets and total revenues year-over-year, respectively. Finally, financial vulnerability is defined as firms experiencing two consecutive reductions in annual program expenditures.

Results

Findings show that, in terms of rank order significance for all of Canada, the model for financial disruption performed the best, followed by the models for financial vulnerability, funding and program disruptions. Insolvency risk performed the worst. That said, outside of perhaps insolvency risk, each of the models performed quite well in predicting the desired independent variable. The case for Atlantic Canada is somewhat different and tells an interesting story about the make up of the charitable market in that part of the country.

For starters, the comprehensive models appear, in part, to increase the noise of the overall estimation for Atlantic Canada. This could indicate sensitivity to the measurement of risk being examined. For instance, it seems clear that sector and age effects matter little when, e.g., examining insolvency risk and financial disruption, but that year effects matter a great deal. As it is for Canada as a whole, it may be the case that technical insolvency is independent of sector. This combined with the insignificance of age for Atlantic Canada organizations (recall that the majority of organizations in that part of the country have been in business for more than 30 years), result in year effects, which can be thought of as a proxy for market performance, driving the results. Given the inherent link between the latter and the size and composition of net assets, which determine both insolvency risk and financial disruption, this seems to make anecdotal sense. Of course, where program revenues and expenditures are concerned, matters differ.

The revenue and expenditure results seem somewhat akin to the relationship between Canada and the United States where economic shocks are often mirrored to a certain degree in the former, as a result of the latter. As such, the east coast of Canada may in fact feel certain economic shocks to a (largely, but not exclusively) greater extent than the rest of Canada. For instance, a systemic shock to the Canadian market could have spillover effects independent of sector in Atlantic Canada; it may be that when organizations are forced to scramble after dealing with an exogenous shock in that part of country that the market is simply too small for organizations to rely on, say, community partners or independent donations to fill the void. Thought of differently, organizations, regardless of sector, could be seen to face limited prospects

⁸ Keating et al. (2005) provide a nice summary of the available models and their use in measuring aspects of financial distress and vulnerability, insolvency, bankruptcy, etc.

Table 3
Random Effects Panel Estimation, Atlantic Canada versus All of Canada

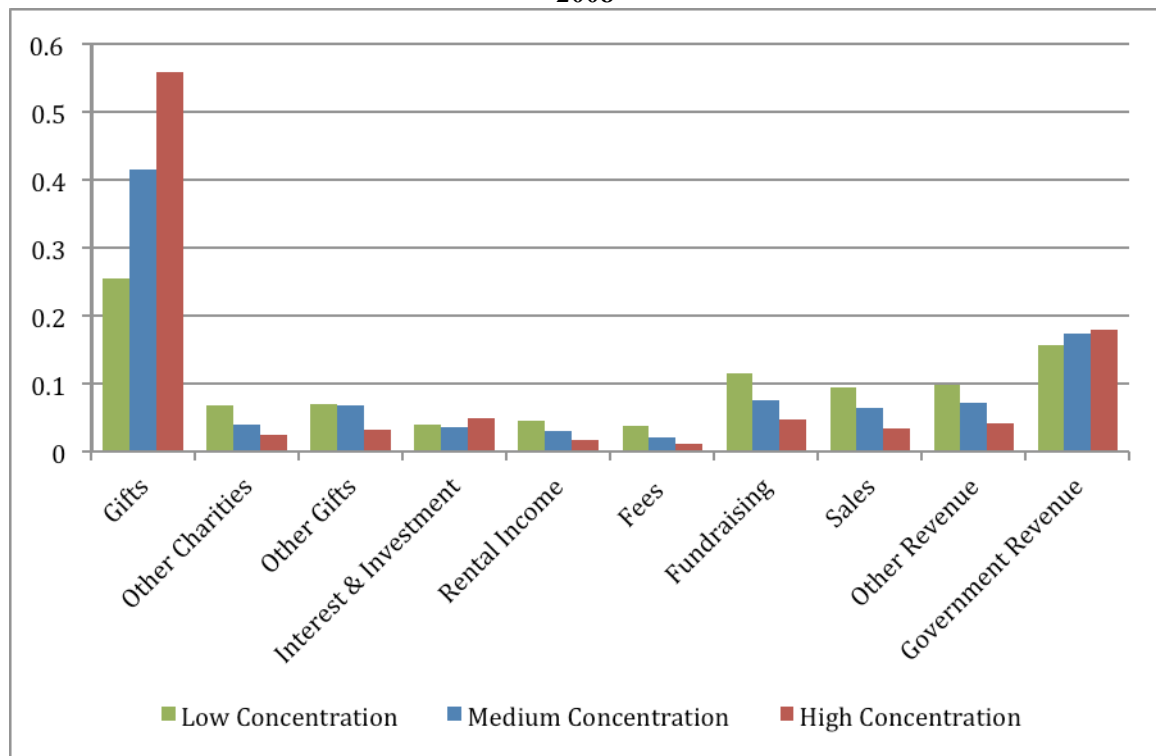
VARIABLES	Program Disruption		Insolvency Risk		Funding Disruption		Financial Disruption		Financial Vulnerability	
	Canada	Atlantic	Canada	Atlantic	Canada	Atlantic	Canada	Atlantic	Canada	Atlantic
EQUITY	0.00216***	-0.00164	-0.0741***	-0.142***	0.00279***	0.00367	-0.0183***	-0.00952***	-0.0273***	-0.0285***
CONCEN	-0.261***	-0.388***	-0.198***	-0.995***	-0.575***	-0.716***	0.194***	-0.0464	-0.451***	-0.541***
MARGIN	-0.716***	-0.734***	-0.517***	-0.652***	1.088***	1.218***	-0.118***	-0.0867*	-0.966***	-0.967***
ADMIN	0.0573**	0.233***	0.327***	-0.044	-0.734***	-0.694***	0.214***	0.200*	-0.607***	-0.586***
WC/TA	-0.143***	-0.178***	0.187***	0.524***	-0.00459	-0.156**	0.765***	0.977***	-0.200***	-0.263***
NA/TA	0.155***	0.051	-2.469***	-2.217***	0.349***	0.217***	0.849***	0.601***	0.107***	-0.00745
TR/TA	-0.00384***	-0.0106**	0.0462***	0.0598***	-0.0158***	-0.0266***	-0.00401***	0.00502	0.0239***	0.0219***
SIZE	-0.167***	-0.148***	-0.0144	0.101***	-0.186***	-0.230***	-0.141***	-0.109***	-0.0044	0.00568
CL/CA	0.0279***	0.00196	0.180***	0.227***	-0.00594	-0.0535*	0.122***	0.0512*	0.0311***	0.00234
NI/TA	0.0163***	0.00308	0.00316	0.0316	-0.0468***	-0.0385**	0.0123***	0.00246	0.00947***	0.00403
community	-0.0652***	-0.0808*	-0.0589	-0.0591	0.487***	0.691***	0.0491***	-0.03	-0.338***	-0.460***
education	-0.131***	-0.189***	0.268***	0.155	0.397***	0.568***	0.200***	0.0685	-0.370***	-0.430***
health	-0.0727***	0.0215	-0.152**	-0.0752	0.223***	0.302***	0.193***	0.0918	-0.495***	-0.410***
welfare	-0.365***	-0.400***	-0.0675	0.0195	-0.173***	-0.0499	0.160***	0.082	-0.480***	-0.487***
other	0.188***	0.528**	0.00382	0.336	0.436***	0.642**	0.185***	0.161	-0.148*	0.244
y2004	-0.0659***	-0.0189	-0.110**	-0.18	-0.0000607	0.0227	-0.0483**	-0.107*	0.0850***	0.107*
y2005	-0.00838	0.0211	-0.113***	-0.359***	-0.0134	0.028	-0.147***	-0.295***	0.172***	0.213***
y2006	0.0823***	0.0652	-0.189***	-0.391***	0.140***	0.0762	-0.139***	-0.236***	0.0885***	0.0801
y2007	-0.0385**	-0.0056	-0.106**	-0.354**	0.0366*	0.00756	-0.107***	-0.303***	0.255***	0.306***
y2008	0.409***	0.568***	-0.0559	-0.353**	0.370***	0.377***	0.384***	0.224***	-0.144***	-0.150**
y2009	0.206***	0.341***	-0.227***	-0.493***	0.217***	0.385***	0.0648***	-0.225***		
Age 0-5	0.111***	0.200***	0.316***	-0.143	0.450***	0.488***	0.206***	0.126*	-0.0266	0.158**
Age 5-10	0.120***	0.0775	0.128***	-0.24	0.374***	0.218***	0.149***	0.0565	0.103***	0.205***
Age 10-15	0.0727***	-0.0169	0.0519	-0.0956	0.227***	0.127**	0.0963***	0.0484	0.0576***	-0.00521
Age 15-20	-0.0137	-0.0069	-0.005	-0.158	0.102***	0.0571	0.00214	0.0262	0.0793***	0.165**
Age 20-25	-0.022	-0.0743	0.0651	0.199	0.0577***	0.0905	-0.00251	0.0398	0.0415*	0.00452
Constant	0.464***	0.404**	-2.852***	-3.388***	-0.175***	0.516**	-1.690***	-1.673***	-1.611***	-1.478***
Observations	330,346	33,638	330,627	33,661	330,168	33,620	314,929	32,173	307,823	31,615
# of Charities	68,606	7,247	68,609	7,247	68,603	7,246	67,157	7,108	69,434	7,327

*** p<0.01, ** p<0.05, * p<0.10

for funding alternatives and may in fact crowd out one another through their fundraising activities, resulting in revenues being impacted differentially. This would be an interesting avenue to explore and we encourage it for further research.

Staying with revenue for a moment, it is interesting to note that unlike their American counterparts, concentration ratios of Canadian and Atlantic Canada charitable organizations indicate that diversification in revenue streams is actually detrimental to risk mitigation; the exception is for financial disruption, where the sign is positive for all of Canada and insignificant for Atlantic Canada. As Table 3 shows, the detrimental effects of diversification appear larger for Atlantic Canada, as well. To explore this phenomenon further, we disaggregate revenue streams for 2008 and separate organizations into three groups: low, medium, and high concentration ratios, where low indicates concentration ratios less than 0.5, medium 0.5 to 0.75 and high 0.75 to 1. This separation leaves the groups roughly symmetrical with 21,139, 20,024, and 20,934 organizations, respectively. The results are displayed in Figure 3.

Figure 3
Revenue Concentration in Canada, by Type and Item,
2008

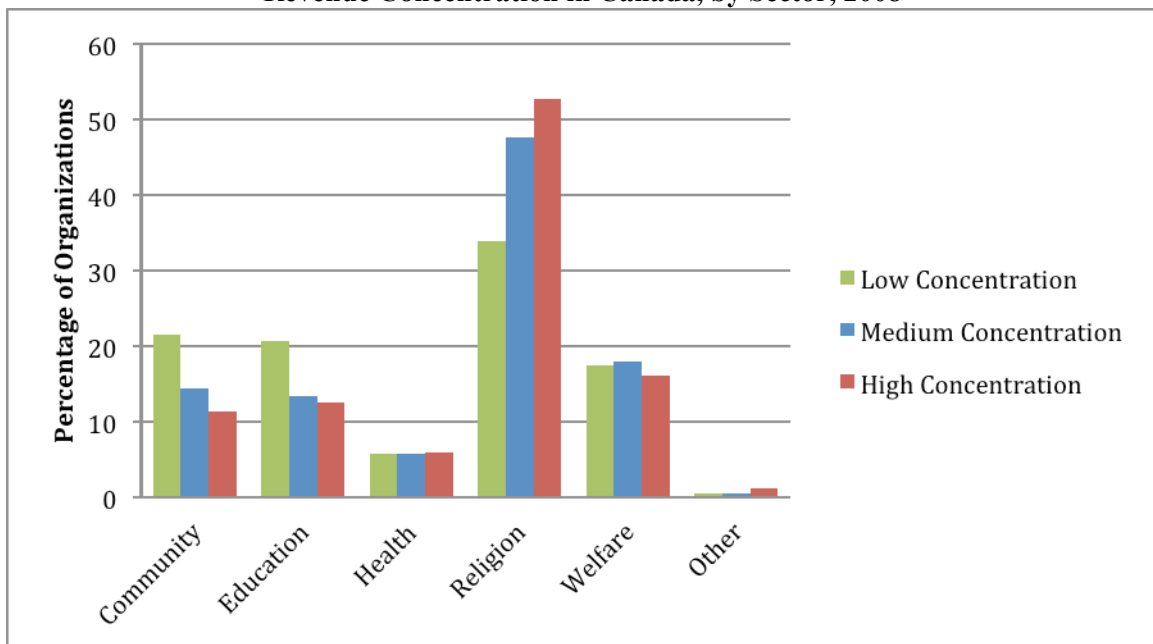


While all organizations rely predominantly on gifts, it is clear that organizations with greater concentration in revenue streams rely on them to a larger extent. Such organizations also rely on interest and investments more, as well as government revenue. Furthermore, there are large sectoral differences by revenue concentration, with religion leading the way by a significant

margin (Figure 4). Putting the pieces of the puzzle together where Atlantic Canada is concerned would seem to imply the lack of risk-mitigating diversification manifesting as a result of the relative overrepresentation of religious organizations in the area, which rely on a fairly large pool of potential donors that are aggregated into the catch-all category of gifts. Therefore, while it should be clear that, *ceteris paribus*, a higher concentration of revenue sources is associated with greater risk than one that is more diversified, there are two main reasons why such an effect may not be observed empirically.

First, as we increase the measure of revenue concentration the composition of the set of charities we are looking at changes. Among charities with the highest levels of revenue concentration, we observe an overrepresentation of Religious organizations (that are fairly stable); religious groups have a lower variance across all revenue sources, when compared to the other categories. Second, some sources of revenue are much more stable and diversified in and of themselves. For instance, rental income or government grants may come from only a handful of sources while tax-receipted gifts may come from hundreds or thousands of donors. The implication, of course, being that while concentration ratios appear to tell a story of anti-diversification, the moral may indeed be one of diversification within the categorical streams themselves. Furthermore, while this undoubtedly provides a commentary on the idiosyncrasies of risk exposure in charitable organizations it also may reveal that there is indeed some crowding out of revenue streams as some authors have suggested (see, e.g., Andreoni and Payne, 2003).

Figure 4
Revenue Concentration in Canada, by Sector, 2008



In an effort to get a better sense of the evolution of the results, we now turn to treating individual years as steady states, if you will, and examine the trend in funding, program and

financing disruptions, as well as insolvency risk, for individual provinces in Atlantic Canada. The results are reported in Table 4. Findings show very few firms in fact find themselves in a position of having negative net assets; Newfoundland and Labrador led the way in 2003 with roughly 6.91 percent of organizations being found as technically insolvent, but go through a regression to the mean of sorts over the timeline explored and come to approximate the other three provinces in the region at the end. What is difficult to determine and would be an interesting exercise for further research is whether the reduction was from attrition, either normal (in terms of the charitable organization running out its mandate) or situational, or if it occurred as a result of good financial management.

Table 4
Percentage of Atlantic Canada Charitable Organizations falling under the respective Risk Measurements, by Year

Risk Measurement	2003	2004	2005	2006	2007	2008	2009
<u>Insolvency Risk</u>							
New Brunswick	3.91	4.14	3.54	2.95	3.45	3.41	3.93
Nfld and Labrador	6.91	6.94	6.84	6.67	4.94	3.86	3.53
Nova Scotia	3.29	3.10	3.88	2.63	2.67	3.08	3.31
PEI	4.69	3.91	3.88	4.05	4.66	2.93	3.89
<u>Financial Disruption</u>							
New Brunswick	16.03	16.23	13.84	12.86	13.67	16.90	12.92
Nfld and Labrador	22.04	17.77	16.67	16.42	15.69	14.84	12.01
Nova Scotia	14.67	14.13	12.59	12.90	11.64	15.48	12.20
PEI	16.74	13.17	16.42	15.48	16.70	13.87	13.21
<u>Funding Disruption</u>							
New Brunswick	12.78	12.56	12.97	13.04	12.41	14.56	14.76
Nfld and Labrador	11.38	12.05	10.09	11.42	11.79	11.49	11.96
Nova Scotia	15.50	15.53	15.00	16.34	15.68	18.75	17.60
PEI	14.09	16.74	15.31	15.16	15.31	17.08	16.72
<u>Program Disruption</u>							
New Brunswick	18.21	16.69	15.93	17.34	15.76	22.78	18.56
Nfld and Labrador	16.24	17.16	14.32	15.84	14.81	22.92	19.65
Nova Scotia	17.84	19.74	19.78	17.57	18.59	23.39	19.76
PEI	20.87	17.59	16.41	19.48	16.03	22.16	15.11

Closely related to the issue of attrition is the nature of the systematic shock in the form of the credit crisis on firms in our sample. While it is clear that charitable organizations in large part realize an adverse spike to their financial health, as it were, and as such an increase in risk, in whatever guise, what is not clear is whether we are witnessing a transitory increase brought about by well-managed or healthy firms capable of carrying, e.g., the requisite increase in leverage, and unhealthy firms ceasing to exist, which might cause the results in Table 4 to be downwardly biased, or whether the spike is the catalyst for (future) business failures. If the latter is the truth of the matter, then the recovery in 2009 may be the result of attrition and not a return to business as usual. Discovering the true nature of the findings is an interesting avenue for future work once data for years beyond 2010 become available.

Finally, the idiosyncratic nature of the findings in Table 4 would seem to provide fodder for developing models with firm (and, perhaps, geographically) specific risk factors, rather than one particular “catch all” model for analytical ease; the latter may also cast doubt on any policy recommendations that claim to limit risk exposure to particular organizations as a means with which to protect the funding donation of voter-contributors. This is particularly interesting given the recent interest by the federal government in overhauling the funding formula to not-for-profit organizations in Canada.⁹

Concluding Remarks

We have attempted to shed light on an important and underrepresented, at least in terms of academic research, part of the Canadian economy by exploring the implications of risk on charitable organizations. Our focus has been on contrasting the case of Atlantic Canada with the entire nation to get a better sense of what risk, in various guises, looks like and ultimately means for the organizations in that part of the country. While more work is needed, the findings suggest a microcosm of sorts for research on risk, in general; namely, that the idiosyncratic nature of, e.g., shocks and corporate governance make assessing risk, whether financial, operational, etc. a difficult proposition with a single overarching model. What is more, policies designed to mitigate exposure to risk or ensure better management of “other people’s money” as those being suggested by the federal government are fraught with inherent difficulties and seem ultimately to be piecemeal, at best. For instance, the stretch-tax credit, the notion that subsequent donations on a year-over-year basis should qualify for greater relief at tax time, is a policy that given the findings above could result in further crowding out of competing donations in Atlantic Canada, particularly if such policy is enacted with subsequent cuts to funding, as is being suggested.

Results suggest an Atlantic Canada market where risk, independent of the different ways we define it in the paper, can be characterized reasonably well by ratio analysis, but where comprehensive models incorporating the likes of age, year and sectoral effects become less reliable; it is important to note that the latter occurs despite the fact that these additional

⁹ See, e.g., Jennifer Ditchburn, “Government Committee to examine Charitable Giving,” <http://www.thestar.com/article/1115840--government-committee-to-examine-charitable-giving> [Accessed 1 August 2012]

explanatory variables do a good job characterizing the Canadian market as a whole. Furthermore, we saw that high level results suggested a counterintuitive finding with respect to diversification being risk enhancing, but when we disaggregated the components of that finding; namely, revenue streams, the result appeared largely driven by the nature of the categorical differences in those streams. On this latter point, it is interesting to note that should the government successfully implement something like the stretch-tax credit while cutting funding, subsequent empirical results could easily show universal increases in concentration ratios that could, particularly if the resulting increase in year-over-year gifts does not manifest, lead to sign change in the longitudinal analysis; that is, high concentration ratios could indeed be associated with greater risk, as a result of the suggested policy.

While we have endeavored to provide as complete an analysis as possible, there are some interesting questions that remain to be explore. For instance, it would be interesting to see how the models suggested in the paper do at forecasting the financial health of charitable organizations. It would also be interesting to do an analysis similar to the above of the firms that cease operations in an effort to determine the implications that lead to their ultimate demise and see whether or not the suggested variables above would have provided the requisite clues for such an end. This latter suggestion would likely require a careful mining of the data, since it is not readily apparent whether a firm ceased operations as a normal course of running out their mandate or whether they were indeed forced out before they were able to reach their ultimate goals. And, if the latter, whether it was a function of external conditions, such as market externalities, or whether it was the result of poor financial management. If it could be assessed systematically, the role of financial management in itself would also, undoubtedly, have interesting implications for the corporate governance literature.

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Models for Valuation of Corporate Social Responsibility¹

We develop valuation models that consider firms' expenses on corporate social responsibility activities and show that, under certain circumstances, CSR expenditures create value for the firm. We also test our models by simulations and confirm that, with the variables we chose, being socially responsible would mostly pay off.

Introduction

During the last decade, interest in studying various aspects of "corporate social responsibility" (CSR) has grown. While a big portion of earlier research is published in the strategic management and business ethics literatures (Waddock & Graves, 1997; Roman et al, 1999; Margolis & Walsh, 2001; Orlitzky & Benjamin, 2001), more recently researchers' in the field of economics and finance have joined the debate on the link between social and financial performance (Barnia & Rubin, 2005, Goss & Roberts, 2006, Statman, 2005).

Part of the studies on CSR address the issue in a *normative* context and raise the question as to whether managers *should* spend corporate resources on social activities where financial return for a firm is uncertain at best. In that respect, the traditional view, presented in the corporate governance literature, the traditional view regards CSR as activities that certainly are not in the best interest of shareholders and may or may not create value for other stakeholders. This part of literature, advocates a simplistic view of agency theory that is associated with Milton Friedman and Michael Jensen (Friedman, 1970, Jensen, 2005; Jensen & Meckling, 1976, 2005). An opposing view is expounded by stakeholder theorists who take a firm and critical stand on the role of business in the society.

A synthesizing pragmatic view, lead by Edward Freeman, often presented in corporate governance, strategic management and business ethics literatures is that not only CSR is the right thing to do but also it helps all stakeholders including common shareholders (Freeman, 1984; Freeman & McVea, 2001; Freeman et al 2004). These theorists argue that "firms are institutions created to serve human needs" and that "it is necessary that all relevant interests [not just those of shareholders] are recognized and taken into account." (John Roberts, 2004).

So it seems that the traditional "stockholder *versus* stakeholder" debate may now be converging, as at least some theorists advocate the idea that creating value for shareholders may

¹ In developing our model with continuous density Functions, we benefited from discussions with Yonggan Zhao of Dalhousie University. All errors and ambiguities are our responsibilities.

require taking care of other stakeholders' interest. While viewing corporate social responsibility as just an "ethical" issue in corporate management implies a conflict between the interests of the investors and CSR, the new perspective recognizes a potential 'business case' for CSR. Therefore, researchers in the field of finance have begun to investigate the link between corporate financial and CSR objectives. However, results of these investigations are mixed.

For example, Barnia and Rubin (2005) find that at low levels of CSR expenditure, the link between these expenditures and firm's value is positive but the relationship becomes negative when these expenditures go beyond certain level. This non-monotonic relationship is also confirmed by Goss and Roberts (2006) who look into cost of borrowing and report that firms at the lower end of CSR spectrum will have to bear a higher cost of borrowing. The cost is also high for firms with high CSR expenses. Thus the premise of their work is that, beyond a certain level, socially responsible activities do not help the firm.

By comparing returns of four indexes of socially responsible companies with that of the S&P 500 index, Statman (2005) finds that Socially Responsible Investment (SRI) indexes did better than the S&P 500 during 1990s and worse during the early 2000s. On another study, by comparing the characteristics of mutual funds containing socially responsible stocks and randomly selected conventional funds, Zakri Bello (2005) finds that socially responsible funds do not significantly differ from conventional funds in terms characteristics such as diversification and its effect on return.

Becchetti, Giacomo and Pinnacchio (2005) examine corporate performance of firms in Domini social index. They find that firms that are included in the Domini index have on average higher total sales per employee and lower return on equity than similar firms outside the index. However, they also have lower conditional volatility. On another study, Milevsky, Aziz, Goss, Comeault, and Wheeler (2006) used an optimization algorithm to eliminate a group of "socially undesirable stocks" from the TSX 60 and replace them with comparable "socially responsible firms." They show that the difference in returns is "economically insignificant."

Fatemi, Fooladi, and Wheeler (2010) compare the characteristics of firms in the DS 400 index with that of similar firms not included in the index and report that, over the period 1990-2005, firms in DS 400 index have basically similar return and market risks but idiosyncratic risk that is significantly lower in every year at 1% level. They also find that firms that are added to the DS 400 Index experience a positive abnormal return upon the announcements for such occasions. The reverse holds for the firms that are deleted from the index.

In this paper, we develop models to show under certain circumstances CSR expenditures will result in value creation for the shareholders. We then examine these models with simulations.

The Model with Discrete Probability Distribution

The lower unique risk of the DS 400 companies reported in Fatemi, Fooladi, and Wheeler (2009) may be evidence that the socially responsible firms offer products or services that are less controversial and the society considers them safe and proper so they are less risky products for the firm to offer. This can most likely create a steady demand from a loyal customer base, lower probability of consumer boycotts, fewer environmental challenges and lawsuits, and a less-

hostile/ more committed/more energized employees. All these *socio-economic* factors should enhance the firm's survival likelihood and reduce cost of capital, thereby creating value.

To develop valuation models that include this phenomenon, we define $p = p(\lambda)$ as the probability that firm survives at any given time and $R = R[p(\lambda)]$ as the cost of capital for the firm, where λ represents the resources that are used by the firm to become more socially responsible (e.g., expenditure in becoming more green). It can be measured as percentage of operating expenses. Then, in general, we may define a firm value as a function of R and p .

$$V = V[p(\lambda), R[p(\lambda)]] \quad (1)$$

Taking total derivative of V with respect to λ , we obtain

$$\frac{dV}{d\lambda} = \left[\frac{\partial V}{\partial p} + \frac{\partial V}{\partial R} \frac{\partial R}{\partial p} \right] \frac{dp}{d\lambda} \quad (2)$$

$\begin{matrix} (+) & & (-) & & (-) & & (?) \end{matrix}$

The term in bracket in (2) is clearly positive. Therefore the sign of $\frac{dV}{d\lambda}$ depends only on the sign of $\frac{dp}{d\lambda}$. If we assume that the survival likelihood is a monotonically increasing function of λ , then obviously, other things being equal, corporate social responsibility creates value at all levels. If, as some researchers (e.g., Barnia & Rubin, 2005) argue, the relationship is non-monotonic, then there will be an optimum expenditure level on CSR that maximizes the firm value.

One way to address this issue is to develop valuation models similar to that of Fooladi, Roberts, and Skinner (1997) and Jonkhart (1979) who used probability of default in pricing corporate bonds. To apply the essence of their models, consider a firm at the beginning of time t . Given that it has survived the foregoing $t-1$ periods without any interruptions, there is a probability p_t that it will survive period t , in which case the firm pays y_t per share to stockholders. The probability that the firm may default and fail to pay y_t during period t due to socio-econ risk is then $1-p_t$. If the firm defaults at time t , it has to go through the process of bankruptcy which we assume will result in payment of CF_{ts} per dollar of common share at some time $t+s$, where s represents the number of years it takes to receive the settlement from the default. Therefore, the expected cash flow at time t for a dollar invested in common stock will be:

$$[p_t y_t + (1-p_t) CF_{ts} (1 + i_{t+s})^{-s}] \left(\prod_{j=1}^t p_j \right), \quad (3)$$

where i_{t+s} is the expected s -period spot rate at time t . Note that the settlement schedule shown in (3) does not exclude the case of zero or immediate settlements.

Defining Q_t as the certainty equivalent factor for the marginal investor, the certainty equivalent cash flow at time t , $CECF_t$, will be:

$$CECF_t = Q_t [p_t y_t + (1 - p_t) CF_{ts} (1 + I_{t+s})^{-s}] \left(\prod_{j=1}^t p_j - 1 \right) \quad (4)$$

The risk-averse investor is indifferent between the *promise* of receiving the expected risky cash flow with some risk and the *assurance* of receiving its certainty equivalent, for any time t . As a result the general valuation form may be defined as:

$$V = \sum_{t=1}^{\infty} \frac{CECF_t}{(1 + I_t)^t}, \quad (5)$$

or

$$V = \sum_{t=1}^{\infty} \frac{[p_t y_t + (1 - p_t) CF_{ts} (1 + I_{t+s})^{-s}] \left(\prod_{j=1}^t p_j - 1 \right)}{(1 + R_t)^t} \quad (6)$$

where R_t is the discount rate for the cash flow obtained at time t and I_t denotes the risk-free t -year spot rate. Similarly, for a company that has ***exact the same characteristics*** as the one mentioned above except that it is not perceived to be socially responsible, there is a probability p'_t that it will survive period t and pay y_t per dollar of common stocks to shareholders. The probability that this company defaults and fails to pay y_t during period t due to socio-econ risk is $1 - p'_t$. Following the same process, this company's value can be shown as

$$V' = \sum_{t=1}^{\infty} \frac{[p'_t y_t + (1 - p'_t) CF_{ts} (1 + I_{t+s})^{-s}] \left(\prod_{j=1}^t p'_j - 1 \right)}{(1 + R'_t)^t} \quad (6')$$

If $p'_t < p_t$, then $\prod_{j=1}^t p'_j - 1 < \prod_{j=1}^t p_j - 1$ and $R'_t > R_t$ so it is easy to show $V' < V$. Note that here we assumed the settlement payment, CF_{ts} , is the same for both firms. A more general development would include a different settlement, CF'_{ts} , for the CSR firm.

To further simplify and make it easier to track our problem, without losing generality, let us make the following assumptions:

- i) The expected cash flows in (6) and (6') grow at the rates of g and g' , respectively.
- ii) R_t and R'_t remain unchanged over time unless there are changes in λ or p .
- iii) Conditional probability of survival is constant over time, i.e., $p_1 = p_2 = \dots = p$

iv) Settlement is immediate and proportionate to the yield, i.e., $CF_{ts} = Cy_t$, where

$$y_t = y_0(1 + g)^t \text{ is time-}t \text{ payment per share}^2.$$

v) In addition to p and R , CSR expenditure also affects growth of cash flows, i.e., $g = g(\lambda)$

With these assumptions and considering that p , g , and R are all affected by CSR expenses (λ), equation (6) may be shown as:

$$V = y_0[p(\lambda) + (1 - p(\lambda))C] \left(\frac{p(\lambda)(1 + g(\lambda))}{(1 + R[p(\lambda)]) - p(\lambda)(1 + g(\lambda))} \right) \quad (7)$$

Therefore, equation (2) may be extended to $\frac{dV}{d\lambda} = \left[\frac{\partial V}{\partial p} + \frac{\partial V}{\partial R} \frac{\partial R}{\partial p} \right] \frac{dp}{d\lambda} + \frac{\partial V}{\partial g} \frac{dg}{d\lambda}$

Note that: from (7) we obtain $\partial V / \partial p > 0$, $\partial V / \partial R < 0$, $\partial R / \partial p < 0$, and $\partial V / \partial g > 0$. So, the sign of $dV / d\lambda$ depends of the sign of $dp / d\lambda$ and $dg / d\lambda$. Strong argument may be made that responsible companies have a higher survival chance ($dp / d\lambda > 0$). If more socially responsible companies also grow faster, $dg / d\lambda > 0$, then CSR expenditures always create value. However, if the CSR expenditures lower the growth, $dg / d\lambda < 0$, in some circumstances they may still increase the firm's value³.

Suppose, at least for some range of λ , $dp / d\lambda > 0$. In that range, $dg / d\lambda > 0$ is sufficient but not necessary condition for having $dV / d\lambda > 0$. The necessary condition is to have

$$W \frac{dp}{d\lambda} > - \frac{\partial V}{\partial g} \frac{dg}{d\lambda}, \text{ where } W = \left[\frac{\partial V}{\partial p} + \frac{\partial V}{\partial R} \frac{\partial R}{\partial p} \right] > 0, \text{ which is possible for some range of } y_0, R,$$

p , g , and C . This can establish that, at least for some level, CSR expenses create value. One way to obtain more insight on this issue and have a better understanding of the relationship between CSR expenses and the firm's value is to run a simulation showing firm's value under various circumstances.

Simulations for the Model with Discrete Probability Distribution

To conduct simulations we need to make assumptions about the size of CSR expenditures as a percentage of revenue or operating cost. We also need to *assume* explicit functional forms

² The model can easily be extended to one with delayed, fixed, or zero settlement without changing the results.

³ Arguments may be made both ways. On one hand, one could argue that market positively respond to socially responsible firms so CSR expenditure will increase revenue. On the other hand, argument may be made that CSR expenditures increase operating costs and reduce firm's bottom line.

for $p = p(\lambda)$, $g = g(\lambda)$, and $R = R[p(\lambda)]$. We made the following assumptions for variables involved in the simulation:

Lambda:	A variable ranging from zero to 0.10 as a percentage of operating expenses in increments of 0.01. Lambda = zero means no CSR expenditure.
Initial Probability:	a random variable ranging from 0.97 to 0.99 in increments of 0.001.
Functional form:	$p = p_0 + \varepsilon\lambda$, where ε is a random variable ranging from zero to 0.01 in increments of 0.01.
Initial Growth:	2.5%.
Functional form:	$g = g_0 - \mu\lambda$, where μ is a random variable ranging from zero to 20 in increments of 1.0.
Initial Discount rate:	12%.
Functional form:	$R = R_0 - \gamma\lambda$, where γ is a random variable ranging from zero to 40 in increments of 1.0.
C	A random variable ranging from zero to 0.20 in increments of 0.01.
y_0	\$0.40 per share.

Utilizing the “R” programming language we computed share values for different levels of CSR expenditure, from zero percent to ten percent of the operating expenses. For each level we randomly picked $\varepsilon, \mu, \text{ and } \gamma$ (and the resulted $p(\lambda), g(\lambda), \text{ and } R[p(\lambda)]$) and computed the share value from Equation (7). We repeated this experiment 5,000 time for each level of Lambda; a total of 55,000 experiments, and reported minimum, maximum, mean, median, 1st quintile, and 3rd quintal values for each level. The results, reported in Table 1, shows that as companies increase their CSR expenditure, the range between maximum and minimum share prices gets wider. At the same time, both the mean and median values increase. On average, firms that allocate 10% of their operating expenses to CSR have 16% higher value. The corresponding increase for the median value is 14%.

The results obtained in Table 1 are obviously artifact of the variables chosen. We chose these variables assuming CSR expenditures increase probability of survival and reduce discount rate but also reduce the growth of the cash flows for the firm. Arguably, the economic intuition behind these assumptions is clear. However, one may at least argue about the size of these variables as well as the functional forms that relate CSR expenses to these variables. Unlike what we assume here, the functional forms may very well be non-linear.

To gain a better understanding of the actual range on these variables as well as their relationships with CSR expenses, we need to obtain data. On the absence of data, to conduct our simulations, we simply made the assumptions we mentioned above. To further investigate the impact of these variables on the firm value, we also picked another set of variables. We chose these variables so that the impact of CSR expenditures on enhancing probability of survival and

lowering the discount rate is reduced and their effect on lowering the growth of cash flows increased. To serve these purposes, we assume:

ε is a random variable ranging from zero to 0.055 in increments of 0.005,

μ is a random variable ranging from zero to 40 in increments of 1.0, and

γ is a random variable ranging from zero to 20 in increments of 1.0.

With these variables, if the initial probability of surviving is 0.97, under the best case scenario for the corporate social responsibility, the firm's value could potentially increase by 27% when we move from lambda value of zero to 0.10. Under the worst case scenario, it decreases by 27%. For the initial probability of 0.99, the corresponding figures are 33% and 30%, respectively.

As in the previous case, we randomly picked $\varepsilon, \mu, \text{ and } \gamma$ from their range and computed share values from Equation (7). Again, we repeated this experiment 5,000 times and reported the results in Table 2. These results also show that as CSR expenditure is higher the range between the minimum and maximum values is wider but to a much lesser extent than the previous case. In this case, the mean and median share values slightly decrease by CSR expenditures. On average, firms that allocate 10% of their operating expenses to CSR have less than 6% lower value. The corresponding reduction for the median value is 7%.

The Model with Continuous Probability Distribution

In our simulation we assumed, on the absence of changes in CSR expenses, the conditional probability of surviving remains constant. While we made that assumption for simplicity, we have no strong economic justification for that. In a study of duration of bonds with default risk, Fooladi, Roberts, and Skinner (1997) assume that as bond approaches maturity, the chance of default is higher. In that regards, probability of survival moves exponentially through the time (i.e., $p_t = p_0^t$). The difficulty with applying this approach to our case may be the implication that, as firms age, there would be a gradual and steady erosion of the chance to survive and, therefore, firms' value. This means that as firms age, the chance of a disaster and hence disruption of revenue becomes higher, resulting in lower value for more mature firms, ceteris paribus. Although cases such as Enron and Lehman Brothers could be a testimony to this idea, it may not be in general consistent with the real world observations.

On the contrary, intuition may suggest that long-standing companies have a higher probability of surviving next period. In other world one may think, the longer a company has been in business, the lower the chance of default in an immediate future. Nonetheless, regardless of how we model the default likelihood over time, in the context of our paper, it is also important to know how CSR would affect the probability distribution of default (or survival).

One way to look at the issue of possible disruption of revenue for the firms that are not socially conscious is to use models that are suitable for duration data such as "Survival" or "Hazard" functions. The advantage of using these functions is that they facilitate empirical tests much better than the model we presented above.⁴ For example, by estimating hazard rate from observing duration data, we gain understanding as to whether the likelihood of failure increases, decreases, or stays constant over time.

⁴ For gaining a more detailed understanding of models of duration analysis models, see Kiefer (1988) and Greene (1993).

Suppose that the length of time that a company stays in business is defined by random variable T , with a continuous probability distribution of $f(t)$. The chance that the company goes out of business before any given time t , $\text{Prob}(T \leq t)$, can be determined by the Cumulative Probability Distribution $F(t) = \int_0^t f(s)ds$, and the unconditional probability that the company survives at least for t years, the *survival function*, is $S(t) = 1 - F(t)$.

Defining $X(t)$ as the sum of present values of all cash flows received up to and including the time of default. The expected value of all these present value cash flows, including the last settlement, would determine the firm's value.

$$V = \int_0^{\infty} X(s)f(s)ds \quad (8)$$

$$\text{Where, } X(t) = \int_0^t y_j e^{-Rgj} dj + CF_{ts} e^{-R(t-s)} \quad (9)$$

and y_j , R , and s are defines as mentioned earlier in the case of discrete functions. As in the case of discrete probability distribution, we assume that settlement is immediate and proportionate to the yield, i.e., $CF_{ts} = Cy_t$, where $y_t = y_0 e^{gt}$ is time- t payment per share. With these assumptions, some algebraic manipulation and rearranging the terms, we will obtain the firm's value.

$$V = y_0 \int_0^{\infty} \left[\frac{1}{R-g} - \frac{1}{R-g} e^{-(R-g)t} + C e^{-(R-g)t} \right] f(t) dt \quad (10)$$

To obtain explicit figure for the firm's value, we need to know the density function $f(t)$. This may be obtainable by observing duration data for companies in various levels of expenditures on CSR. For our modeling purpose, we may make an assumption about the *hazard rate*, the rate at which a company may default after time t , given that it has survived up to that time. As mentioned earlier, this rate may be increasing or decreasing with time. However, on the absence of any observation, one may assume the hazard rate is constant over time. This means that the conditional probability of failure in a short interval after time t is the same for all t .

Assuming a constant hazard rate⁵ of φ and integrating backward to get the *survival function* and density function, we obtain $f(t) = \varphi e^{-\varphi t}$. Replacing this into (10), taking the integral and simplifying the terms, we obtain:

$$V = y_0 \left[\frac{1 + \varphi(\lambda)C}{R(\lambda) - g(\lambda) + \varphi(\lambda)} \right] \quad (11)$$

⁵ Following the spirit of Green (1993) argument, hazard rate for our case may be defined as the rate at which the company may go out of business after time t , given that they have survived for at least t years and may be calculated as $h(t) = \lim_{\Delta t \rightarrow 0} \frac{F(t + \Delta t) - F(t)}{\Delta t S(t)} = \frac{f(t)}{S(t)} = \frac{d \ln S(t)}{dt}$.

Simulations for the Model with Continuous Probability Distribution

It can be shown that $\partial V / \partial \varphi < 0$. This means, given that the firm has survived up to time t , as the failure rate in a short interval after t is faster, the firm has lower value. It is reasonable to assume that CSR expenditures would reduce this rate. So, to conduct simulations, we made the assumption that $\varphi = \varphi_0 - \alpha\lambda$, where α is a random variable ranging from zero to 0.5, with increment of .05. This will assure that φ will range from 0.05 to 0.10. Our assumptions for the range and functional forms of other variables, remains the same as before. It should be noted that the length of time a firm stays in business has an inverse relation with φ . So, as φ reduces from 0.10 to 0.05, this length becomes double.

As in the case of discrete probability distribution, we conduct two sets of simulations. The first set assumes μ is a random variable that ranges from zero to 20 in increments of 1.0 and γ is a random variable ranging from zero to 40 with increment of 1.0. The second set assumes μ is a random variable that ranges from zero to 40 in increments of 1.0 and γ is a random variable ranging from zero to 20 with increment of 1.0. In both sets α is a random variable ranging from zero to 0.5, with increment of .05.

We calculated share values for each level of CSR expenses by randomly choosing these variables from their range and repeated the experiment 5,000 times at each level (a total of 55,000 experiments). The results are summarized in tables 3 and 4.

Both tables show, as the CSR expenditure rises the range between minimum and maximum prices widens but to a much lesser extent than that of the case for discrete probability distributions. Both tables also show that, as CSR expenditure increases, Mean and median share values increase.

For the first set of simulations, as Table 3 shows, increasing CSR expenditures from zero to 10% of the operating expenses, will result in a 24% increase in mean price and 22% increase in median. For the second case, where we assume CSR expenses have less impact in reducing the discount rate and more impact in reducing the growth of cash flows, the corresponding figures for changes in mean and median are 10% and 8% increases.

Summary and Concluding Remarks:

In this paper we discuss the possible impact of CSR expenditure on firm's value. We present historical arguments for and against CSR expenditures referring to benefits and costs of such expenditures. We also develop models to illustrate under some circumstances expenditures on activities related to the company's corporate social responsibility will create value.

The essence of our models is the argument that socially responsible companies have a higher probability of survival due to creation of a *loyal* customer base as well as *loyal* employees. They are also less likely to face lawsuit due to environmental damage or offering products with some controversial aspects. For all these reasons we argue (and show evidence from our earlier research) that socially responsible companies could enjoy lower cost of capital, and incorporated that in our model. At the same time, we acknowledge that CSR expenses are using company's resources that could otherwise contribute to profits so they may lower the growth of cash flows. Although there are also legitimate arguments in opposite directions we incorporated the negative relationship between CSR expenses and growth in our models.

We develop two sets of models. Our first model determines time t cash flows using conditional probabilities of survival, given that the firm has survived for $t-1$ years. This model assumes discrete probability density of survival. Our second model assumes continuous probability density functions and is designed so that we can ultimately benefit from observing duration data, *hazard* and *survival* functions, when they are obtainable. Both models are tested by simulations. The results of simulations confirm our notion that, under certain circumstances, firms can create value by being socially responsible. The variables we use in our simulations are chosen arbitrary with the condition that CSR expenses increase probability of survival and lower the cost of capital and growth of cash flows. On the next phase of this research we intend to create objective probability distribution of cash flows and survivorships based on empirical study and observing duration data and information about CSR expenses.

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Table 1: Simulation results for the discrete model set 1, 5,000 computations for each level of Lambda.

epsilon (0,0.1,0.01); mu (0,20,1.0); gamma (0,40,1.0)

LAMBDA	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
Minimum	3.068	3.035	3.001	2.918	2.939	2.886	2.804	2.773	2.777	2.729	2.722
Maximum	3.826	4.011	4.225	4.437	4.594	4.93	5.276	5.515	5.853	5.991	6.45
Mean	3.433	3.476	3.528	3.571	3.627	3.693	3.749	3.766	3.843	3.892	3.981
Median	3.418	3.462	3.511	3.554	3.605	3.667	3.719	3.723	3.784	3.817	3.894
1st Qu.	3.235	3.273	3.316	3.351	3.4	3.427	3.445	3.443	3.476	3.458	3.513
3rd Qu.	3.614	3.67	3.726	3.764	3.834	3.923	4.009	4.042	4.154	4.224	4.361

Table 2: Simulation results for the discrete model set 2, 5,000 computations for each level of Lambda.

epsilon (0,0.055,0.005); mu (0,40,1.0); gamma (0,20,1.0)

LAMBDA	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
Minimum	3.068	2.988	2.892	2.811	2.744	2.62	2.583	2.469	2.443	2.385	2.301
Maximum	3.826	3.905	3.983	4.056	4.219	4.273	4.415	4.581	4.675	4.753	4.865
Mean	3.431	3.406	3.378	3.359	3.334	3.314	3.3	3.281	3.259	3.256	3.233
Median	3.419	3.396	3.363	3.342	3.314	3.289	3.277	3.246	3.222	3.205	3.175
1st Qu.	3.236	3.209	3.186	3.162	3.13	3.1	3.061	3.022	2.977	2.941	2.892
3rd Qu.	3.612	3.595	3.557	3.542	3.519	3.504	3.515	3.503	3.496	3.525	3.527

Table 3: Simulation results for the continuous model set 1, 5,000 computations for each level of Lambda.

alpha (0,0.5,0.05); mu (0,20,1.0); gamma (0,40,1.0)

LAMBDA	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
Minimum	2.051	2.038	2.018	2.002	1.976	1.978	1.953	1.933	1.916	1.892	1.892
Maximum	2.092	2.181	2.296	2.413	2.554	2.686	2.877	3.052	3.281	3.526	3.842
Mean	2.072	2.109	2.149	2.191	2.235	2.284	2.329	2.387	2.439	2.495	2.571
Median	2.072	2.109	2.149	2.19	2.233	2.273	2.315	2.373	2.412	2.466	2.525
1st Qu.	2.062	2.09	2.114	2.138	2.161	2.188	2.2	2.235	2.258	2.28	2.314
3rd Qu.	2.082	2.127	2.183	2.24	2.306	2.376	2.444	2.524	2.597	2.675	2.787

Table 4: Simulation results for the continuous model set 1, 5,000 computations for each level of Lambda.

alpha (0,0.5,0.05); mu (0,40,1.0); gamma (0,20,1.0)

LAMBDA	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
Minimum	2.051	2.018	1.978	1.947	1.905	1.873	1.843	1.81	1.768	1.732	1.731
Maximum	2.092	2.166	2.242	2.318	2.422	2.522	2.626	2.747	2.894	3.025	3.203
Mean	2.072	2.088	2.105	2.121	2.14	2.158	2.178	2.197	2.221	2.238	2.27
Median	2.072	2.088	2.104	2.119	2.136	2.154	2.168	2.181	2.201	2.214	2.242
1st Qu.	2.062	2.071	2.07	2.069	2.069	2.07	2.07	2.066	2.069	2.062	2.069
3rd Qu.	2.083	2.107	2.138	2.17	2.206	2.239	2.277	2.312	2.357	2.386	2.442

Modeling the Canadian Real Estate Market

This research examines the relationships between the Canadian real estate market and macroeconomic variables. Using vector autoregressive models and Granger causality tests, the study finds the Canadian real estate market is connected to major macroeconomic variables such as the exchange rate of the Canadian dollar against the US dollar, inflation, differences between long-term and short-term rates, and the gross domestic product. However, beyond the effect of real estate on itself only inflation and spread significantly affect the real estate market contemporaneously.

Introduction

The impact from the collapse of the US housing sector on real economies around the world has highlighted the need for understanding the connection between the macro economy and the real estate sector. In this study, we focus on the connections between the macro economy of Canada and its real estate market. The Canadian market provides a unique opportunity to study the impact from a wide range of macroeconomic variables on the real estate sector for the only developed country heavily dependent on the US for trade that avoided a complete bust. Studying the role of macroeconomic factors in the Canadian real estate market is interesting because there are distinct differences between the Canadian real estate market and the US real estate market when it comes to sub-prime lending, length of loan terms, delinquency laws, insurance, and securitization of debt. An understanding of the role of macroeconomic factors in Canada's real estate market is important for policy developers to help avoid the bubbles and subsequent collapses witnessed in other nations.

To understand the time series nature of the relationship between the Canadian real estate market and macroeconomic fundamentals, we use a vector autoregressive (VAR) framework to test the impact of macroeconomic and financial variables on the Canadian real estate market. The use of the VAR framework is motivated by the feedback inherent between the real estate sector, the financial sector, and the real economy. The current research is the first, to our knowledge, to use a wide range of macroeconomic variables to test the dynamic behavior of the real estate market in Canada.

This study finds that the Canadian real estate market is well linked to all the macroeconomic variables used in the study. The study also finds that a positive innovation in inflation and the spread between the 10-year bond and Treasury bills (T-bills; a short bill rate) positively influences the innovation of the Canadian real estate market. We interpret this result as indicating that as risk aversion increases investors are more likely to invest in 'real' assets such as property. Almost 42% of the variations in the real estate index can be explained by inflation and spread alone.

The remainder of the paper is organized as follows: In section 2, we discuss the related literature; in section 3, we present our methodology; in section 4, we present our variables and data sources; in section 5, we present our empirical results; and in section 6, we conclude the paper.

Literature Review

In this section, we briefly discuss research on real estate linking financial and macroeconomic variables.

Muellbauer and Murphy (1997) analyzed the booms and busts in the United Kingdom (UK) housing market between 1957 and 1994. In this study, they developed a theoretical model for housing booms and busts and tested it empirically to discover the causes. The researchers found that the changing nature of the interactions between the housing market and variables such as wealth, income growth expectations, and the real interest rate caused bubbles. Later in the 1990s, a bust occurred mainly due to a reversal of these factors. Similarly, Ling and Naranjo (1997) studied economic risk factors and commercial real estate returns of the US real estate market using quarterly data from 1978 to 1994. Using the Fama-Macbeth (1973) regression technique, they found that the growth rate in real per-capita consumption, the real T-bill rate, the term structure of the interest rates, and unexpected inflation were fundamental drivers that systematically affect real estate returns.

De Wit and Van Dijk (2003) used some of the most exhaustive data from 1986 to 1999 with quarterly observations from major cities in Asia, Europe, and the United States to study the determinants of direct office real estate returns. To study the cross-sectional and time-series dimensions of the data, the researchers employed the generalized method of moments to estimate a dynamic panel-data model. The study found that the gross domestic product, inflation, unemployment, the vacancy rate, and available stock all have an effect on real estate returns.

Brooks and Tsolacos (1999) used monthly data from 1985 to 1998 to explore the effect of financial and macroeconomic variables on UK property prices. Using an unrestricted VAR system, the authors found that the lagged values of real estate return, unexpected inflation, and the interest rate term spread can explain variations in the UK property market. Ling and Naranjo (2003) used VAR methodology to address the issue of capital flows with the real estate market in the United States. The authors documented a positive relationship between capital flows into real estate investment trusts (REITs) and past returns on REITs. Vishwakarma and French (2010) studied the Indian real estate sector using monthly data from 1996 to 2007. In this study, they used VAR methodology along with many macroeconomic variables to investigate the influence on the Indian real estate sector. The authors found that from 2000 to 2007 the depreciation of the Rupee against the US dollar caused a negative influence effect on the real estate sector. However, the increasing difference between the long-term rate and the short-term rate caused a positive influence on the Indian real estate sector. Donald and Stokes (2011) investigated the link between the federal funds rate on the S&P/Case-Shiller Housing Price Indices. The study employed monthly data from January 1987 to August 2010. Using Granger causality analysis and the VAR modeling technique, the researchers concluded that the low federal funds rate from 2001 to 2004 was the cause of the housing price bubble.

Though most of the research available is for the US and UK markets, studies have investigated similar issues in other countries such as Australia (Okunev, Wilson, Zurbrugg, 2002), Singapore (Liow, 2000), Ireland (Stevenson and Murray, 1999), and Turkey (Onder, 2000).

Methodology

Consistent with McCue and Kling (1994), Lizieri and Satchell (1997), Brooks and Tsolacos (1999), and Vishwakarma and French (2010), this study uses the VAR technique to investigate the link between macroeconomic variables and the Canadian real estate market. As described by Enders (2004), VAR can be expressed as a system of regressions in which the dependent variables are expressed as functions of their own and each other's lagged values and possibly other control variables. This technique is especially useful when time series variables are interrelated, and the exact nature of the relationship is not well defined.

A general unrestricted p th-order Gaussian VAR model can be represented as:

$$Z_{it} = \mu + \varphi_1 Z_{it-1} + \varphi_2 Z_{it-2} + \dots + \varphi_k Z_{it-p} + \varepsilon_t \quad (1)$$

Where Z_{it} is a vector of the variables, μ is a $p \times 1$ vector of the intercepts, $\varphi_1, \varphi_2, \dots, \varphi_k$ are $p \times p$ matrices of the parameters, and ε_t is a vector of uncorrelated structural shocks $[\sim N(0, \Omega)]$. VAR models allow variance decompositions, impulse response functions, and multivariate Granger causality to be estimated.

The lag length for VAR is chosen using the Akaike information criterion (AIC) and the Schwartz Bayesian criterion (SBC). After we identify our VAR, we estimate the impulse response functions and the variance decompositions by applying an identification assumption following Froot, Connell, and Seasholes (2001) and Bekraert et al. (2002), and use the standard Cholesky decomposition. After this step, Granger causality is estimated for each VAR. The variables are ordered in various ways to make sure that the results are not sensitive to variable ordering.

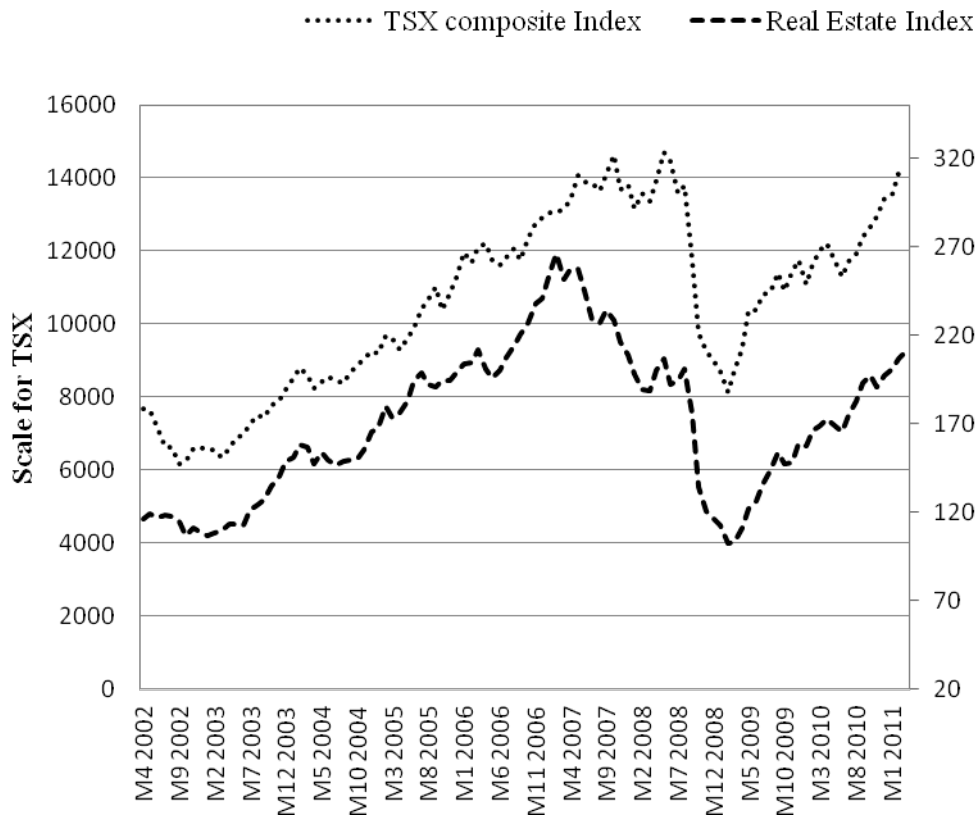
Data

Our sample period covers the period from April 2002 to March 2011. Monthly data are collected from the Yahoo Canada and Statistics Canada websites. The S&P/TSX Capped Real Estate Index is used as a proxy for the real estate market in Canada; the index includes 17 real estate investment trust and realty firms (see <http://www.tmx.com/en/pdf/TTREDescription.pdf> for further details).

Figure 1 shows the evolution of the index for our sample period. As is clearly demonstrated in Figure 1, the Canadian real estate sector experienced rapid and continued growth until the end of 2006. Further, we define the log difference of this variable as **RE**, which is the continuous percentage change in our measure of the Canadian real estate index. As Figure 1 illustrates, the real estate index in Canada is significantly affected by overall equity market returns (the TSX composite index). To eliminate the effect of the stock market on this real estate index, following McCue and Kling (1994) and Brooks and Tsolacos (1999), we regressed the return on the Toronto Stock Exchange (**RTSX**) on RE and saved the residuals. We define the

residual of real estate as **RRE**. We interpret RRE as the portion of the return to real estate that is not determined by returns on the Toronto Stock Exchange. Since VARs are misspecified using non-stationary variables, we test the RRE for a unit root using standard augmented Dickey–Fuller (ADF) tests and find, as expected, that the RRE is stationary.

Figure 1: S&P/TSX Composite Index and S&P/TSX Capped Real Estate Index



Following the existing literature, we consider a broad set of macroeconomic variables. Choosing the macroeconomic variable in this study is guided by previous studies in a related area. The gross domestic product (**GDP**) is used as a determinant based on the Chen, Roll, and Ross (1986) and Karolyi and Sanders (1998) studies that found stock prices and industrial production have explanatory power for each other. Gardiner and Henneberry (1988, 1991) used the GDP in their rent forecasting models. Higher inflation leads to decreased demand for housing according to Feldstein (1992) and Kearl (1979). However, Quan and Titman (1999) argued that inflation may increase demand for housing because housing is seen as a hedge against inflation. The Consumer Price Index (**CPI**) is used as the variable for inflation.

The financial literature suggests that the difference between long-term and short-term interest rates has predictive power about the state of economy (Fama and French, 1992, Stock and Watson, 1989). The higher the difference, the higher the premium for holding assets, which leads to increased demand for real assets. The difference in the long-term government bond (10 years) and the short-term interest rate (three-month T-bill) is termed **SPREAD**. Ajayi and Mougoue

(1996) and Granger, Huang, and Yang (2000) found that the exchange rate and stock prices influence each other. Thus, this study uses the **CAD/US** exchange rate as another determinant in the model.

The estimation process for VAR requires that the series used in the model are stationary. Hence, the log difference of each variable GDP, CPI, SPREAD, and CAD/US is constructed, which are denoted as **RGDP**, **RCPI**, **RSPREAD**, and **RCAD/US**, respectively. Each of these newly constructed variables becomes stationary according to the augmented Dickey–Fuller test; they were not stationary otherwise.

Empirical Results

Summary statistics for the full sample are reported in Table 1, and correlations between major variables are reported in Table 2. The summary statistics show that over the entire sample the S&P-TSX Composite Index (RTSX) is considered a volatile market with a standard deviation of 4.4% monthly and an average monthly return of about 0.6%. Extreme values are also reported showing that the maximum return for the sample period was 10.6%, and in the worst month the S&P-TSX Composite Index had a negative return of 18.6% of its value. The real estate index (RE) on the other hand had an average return of approximately 0.6%, but with a higher standard deviation of 5%. The residual of real estate (RRE) has a normal distribution with the monthly mean (median) return approaching 0% (0.5%). Finally, we note that over the entire sample that there was as expected a negative spread between long-term rates and short-term rates, with a minimum difference of 8.625% at times. However, the growth of inflation (the Consumer Price Index; CPI) and productivity (gross domestic product; GDP) was low and stable. The CAD/US exchange rate saw an average growth rate of -0.5% , which is due to the appreciation of the Canadian dollar against the US dollar several times during the sample period.

Table 1: Summary Statistics

	RE	RRE	RTSX	RCAD/US	RCPI	RSPREAD	RGDP
Mean	0.006	0.000	0.006	-0.005	0.002	-0.208	0.002
Median	0.017	0.005	0.014	-0.005	0.002	-0.029	0.002
Maximum	0.089	0.074	0.106	0.113	0.008	1.500	0.012
Minimum	-0.267	-0.115	-0.186	-0.062	-0.003	-8.625	-0.010
Std. Dev.	0.050	0.035	0.044	0.022	0.002	1.035	0.004
Observations	107	107	107	107	107	107	107

Several noteworthy correlations between the major macroeconomic variables and the real estate market reported in Table 2 were uncovered. We focus on the correlations between the RRE and the macro variables. We note that the RCAD/US, the value of the Canadian dollar against the US dollar, is negatively correlated with unexpected changes in the real estate index (RRE) at 7.6%. This indicates that when the CAD is devalued or the USD revalued, the RRE has negative growth on returns. We also note that the RRE is negatively correlated with RSPREAD at -0.9% . Similarly, this indicates that when the growth in the difference between the long-term interest rate and the short-term interest rate is positive, the RRE has negative growth on returns. Though this

is not causality, it shows a historic trend in the movement of two variables against each other in the sample period. Further, we note that the RRE is correlated with the RCPI and RGDP at 2.0%, and 16.2%, respectively.

Table 2: Correlation

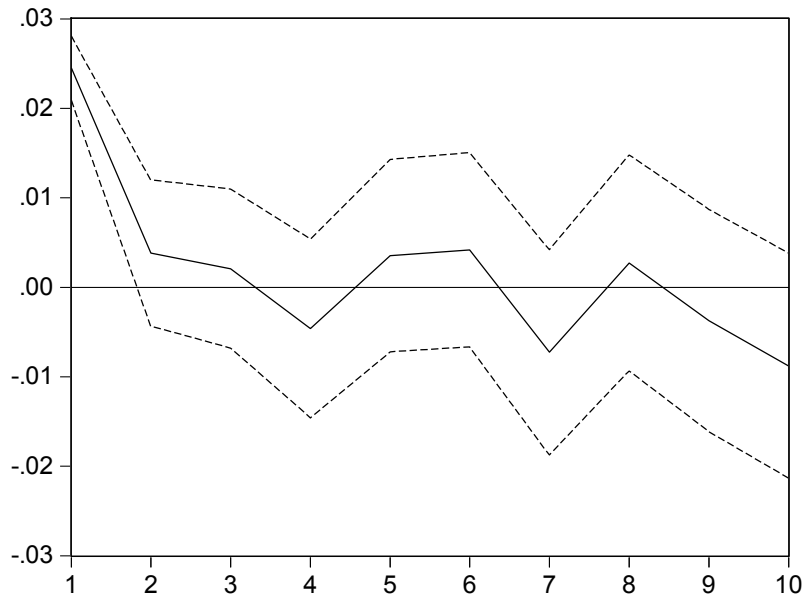
	RRE	RTSX	RCAD/US	RCPI	RSPREAD	RGDP
RRE	1.000					
RTSX	0.000	1.000				
RCAD/US	-0.076	-0.381	1.000			
RCPI	0.020	0.002	-0.082	1.000		
RSPREAD	-0.089	-0.008	-0.083	0.006	1.000	
RGDP	0.162	0.233	-0.196	-0.075	-0.069	1.000

Contemporaneous correlations help only in gathering limited learning about the relations between the variables. To understand the dynamic relations between the variables, one has to employ the VAR technique. As mentioned in the methodology section and the explanations of the variables, this study relies on five variable VARs using equation (1). All the variables are tested for stationarity using the ADF test. The final VAR system consists of the variables RRE, RCAD/US, RCPI, RSPREAD, and RGDP and their lags. Using the AIC and the SBC, the VAR with 14 lags is considered best for estimation.

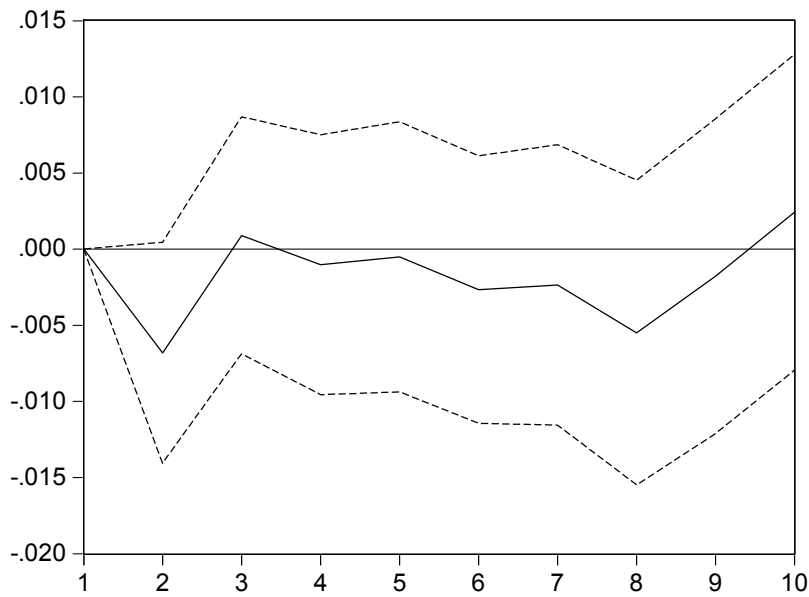
Using this VAR system, the impulse response functions are generated, which are given in Figure 3. Impulse response functions tell us the effect of a one-unit shock of the explanatory variable on the variable on the dependent variable. Hence, Figure 3 shows the effects on the RRE series over time when a one-unit shock is given to RRE, RCAD/US, RCPI, RSPREAD, and RGDP at the beginning. The first effect is the response of RRE to RRE; it shows that the shock in the real estate sector has a positive impact on the real estate sector for 2 months, which later dies out quickly. The second effect is the response of the RRE to the RCAD/US: it shows that the RRE has a marginal negative influence of innovation on the RCAD/US, i.e., a minor devaluation of the CAD against the USD leads to an almost insignificant effect on the real estate market in Canada. From April 2002 to March 2011, there were no severe devaluations or revaluations of the CAD. Hence, we find weak support for the work of Ajayi and Mougoue (1996), who found that currency depreciation leads to a decline in stock prices in the short-run because exchange rate depreciation suggests higher inflation in the future causing uncertainty, which leads stock prices to drop. The response of the RRE to the CPI indicates that innovation in the RCPI initially has a positive influence on the RRE in the 2- to 3-month forecasting, but this effect goes out of the system after 5 months. This is different from Brooks and Tsolacos's (1999) study of the UK property market; they found inflation had a long-term negative influence on the real estate index. The response of the RRE to SPREAD has an initially ambiguous effect on the RRE, but after 6 months, it has a huge positive impact on the real estate market. Relating this result to Fama and French's (1992) and Estrella and Hardouvelis's (1991) work tells us that as the difference between the long-term interest rate and the short-term interest rate increases it indicates a positive outlook for the future state of the economy, which motivates investors to invest in the real estate sector. Last, the response of the RRE to the RGDP indicates that it has a much lower and ambiguous effect on the real estate sector.

Figure 3: Impulse Response Functions

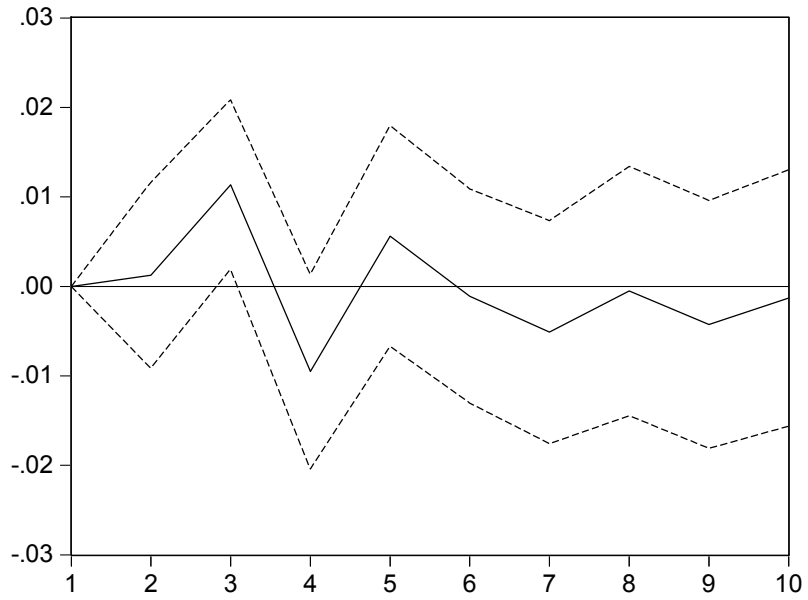
Response of RRE to Cholesky
One S.D. RRE Innovation



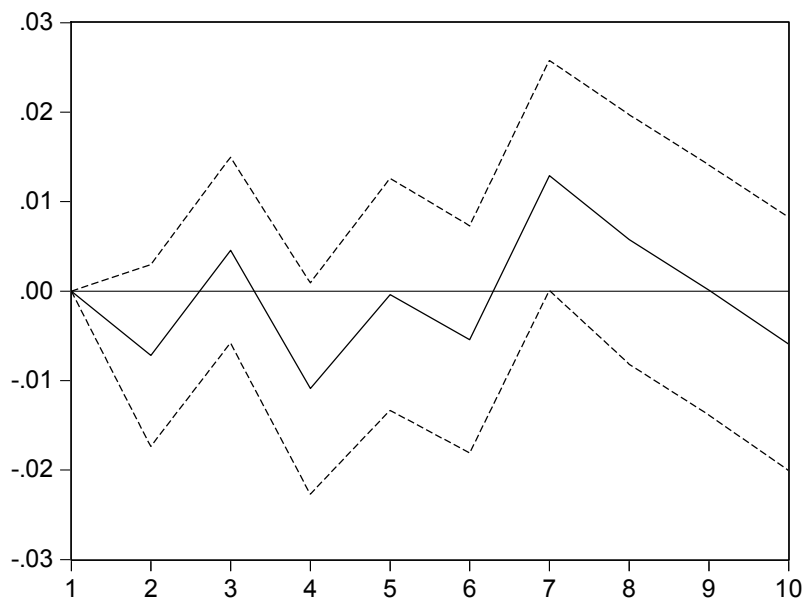
Response of RRE to Cholesky
One S.D. RCAD_US Innovation



Response of RRE to Cholesky
One S.D. RCPI Innovation



Response of RRE to Cholesky
One S.D. RSPREAD Innovation



Response of RRE to Cholesky One S.D. RGDP Innovation

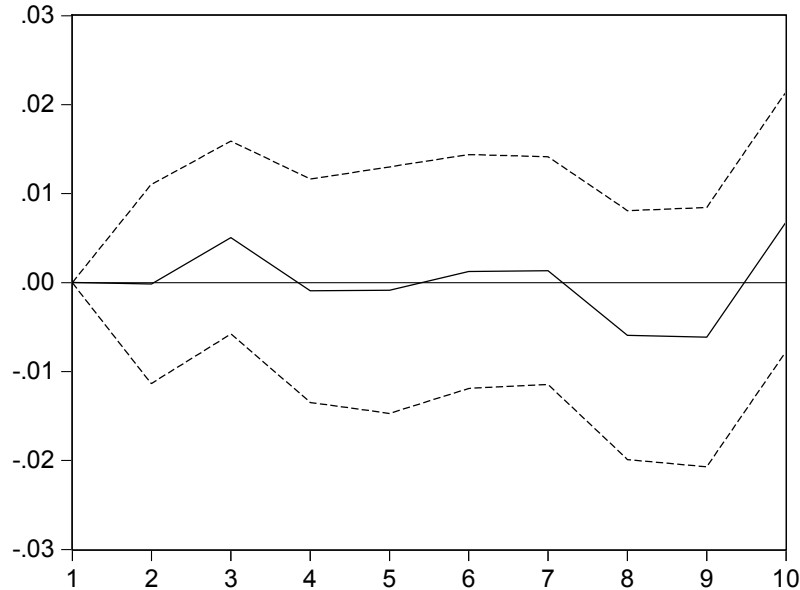


Table 3 presents the results of the variance decomposition of the RRE to innovations in the macroeconomic variables. Variance decomposition measures the contribution of each variable to the variance of the other variable in the VAR system, and provides evidence of the relative importance of each shock. We find that 5.5 %, 17%, 25%, and 8% of the variance of the RRE sequence is explained by the evolutions of growth of the CAD/USD exchange rate, consumer price index, spread, and productivity respectively, at 10 months. However, 45% of the variance in the RRE can be explained by the variance in itself even at the end of 10 months. Considering only exogenous variables, then the CPI and spread make up almost 42% of the variance in the real estate sector of Canada. These results are similar to Brooks and Tsolacos (1999) for the UK property market; they also found that inflation, spread, and the property market are major contributors of innovations to the UK property market.

Table 4 presents the Granger causality tests. The Granger causality test jointly tests the significance of the current and lagged effects of the explanatory variable on the dependent variable. Thus, in our case the significant value of the explanatory variable in the Granger causality test indicates that the current and lagged values of the explanatory variable cause the (effect) RRE. Interestingly, all the macroeconomic variables tested in this study are found significant in the Granger causality test, which is different from previously presented variance decomposition results, in which RCPI and RSPREAD were the only significant variables. This indicates that only RCPI and RSPREAD have a prominent contemporaneous effect on the RRE.

Overall, our results indicate that the Canadian real estate market is strongly connected to major macroeconomic variables such as the exchange rate of the Canadian dollar against the US dollar, inflation, the difference between long-term and short-term interest rates, and the gross domestic product. However, inflation and differences between long-term and short-term interest

rates are the most prominent macroeconomic factors that explain most of the variation in the Canadian real estate market; their effect is immediate and remains in the economy for longer periods. These findings indicate that volatile or bubble-like situations can be avoided in Canada by careful controlling the macroeconomic variables.

Table 3: Variance Decomposition

Variance Decomposition of RRE:						
<i>Period</i>	<i>S.E.</i>	<i>RRE</i>	<i>RCAD/US</i>	<i>RCPI</i>	<i>RSPREAD</i>	<i>RGDP</i>
1	0.025	100.000	0.000	0.000	0.000	0.000
2	0.027	86.030	6.485	0.216	7.266	0.003
3	0.030	69.160	5.267	14.596	8.125	2.851
4	0.034	56.789	4.274	19.620	16.977	2.340
5	0.034	55.667	4.132	21.551	16.336	2.315
6	0.035	54.520	4.520	20.653	17.976	2.331
7	0.039	48.782	4.124	18.896	26.143	2.055
8	0.040	45.993	5.748	17.652	26.485	4.122
9	0.041	44.816	5.684	17.969	25.322	6.209
10	0.043	44.960	5.488	16.422	24.943	8.187

Table 4: Granger Causality

Dependent variable: RRE			
<i>Excluded</i>	<i>Chi-sq</i>	<i>df</i>	<i>Prob.</i>
RCAD/US	36.69347	14	0.00080
RCPI	27.61794	14	0.01600
RSPREAD	45.96692	14	0.00000
RGDP	27.20273	14	0.01810
All	130.7147	56	0.00000

Conclusions

This paper studies the relationship of the Canadian real estate market and macroeconomic variables such as the exchange rate of the Canadian dollar against the US dollar, inflation, the difference between the long-term rate and the short-term rate, and the gross domestic product. To study this relation, the S&P/TSX Capped Real Estate Index is used as a proxy for the real estate market, and the sample period covers the period from April 2002 to March 2011 with monthly observations. A VAR technique is employed to investigate the interrelations. Using a VAR model with 14 lags, impulse response functions, variance decomposition, and Granger causality tests are produced.

Overall, the results indicate that the Canadian real estate is affected by all the macro-economic variables tested in this study directly or through their lags. In terms of innovations, we find that a positive innovation in inflation and spreads between long-term bond rates and short-term bond rates positively influence the real estate market in Canada, which supports the findings of Stock and Watson (1989), Harvey (1989), Estrella and Hardouvelis (1991), and Plosser and Rouwenhorst (1994)). As spreads measure the risk aversion of the average investor, a positive innovation indicates that risk aversion increased. Our results support the notion that as financial market risk aversion increases Canadian investors seek shelter in 'real' assets such as real estate. Almost 45% of the variations in real estate can be explained by the past innovations in real estate itself, and the other 42% of the variations can be explained by inflation and the difference between the long-term interest rate and the short-term interest rate.

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Portfolio Efficiency and the “Limit on Size” Debate for a Too-Big-To-Fail (TBTF) Bank

Does limiting the size of a large bank reduce its insolvency risk? This paper shows that the answer to this question depends upon how exactly paring down of the bank size is done. The risk may go down or it may rise conditional on the composition of assets and liabilities of the pared down bank. Secondly, the paper investigates mean-standard deviation (μ/σ) efficiency of various possible paring down scenarios and suggests μ/σ efficient assets and liabilities compositions that do not depend on limiting the size of the bank. Accordingly, the findings of this paper create serious doubt about the validity of the “limit on size” solution to the “Too Big To Fail”, TBTF, problem.¹

Introduction

During and after the recent financial crisis, the term too-big-to-fail, TBTF, has been commonly used for a bank that is so large that its failure will trigger significant adverse financial and economic consequences for other financial institutions and for the non-financial sectors (Ashcraft, 2005). These adverse financial economic consequences termed as the spillover effects (systemic risk), have been the main rationale behind governments’ bailouts of large troubled banks in the USA and Europe during the crisis. This public rescue of a financial distressed large bank is known as TBTF policy.

The gains of the TBTF policy are the avoidance of the currently expected spillover effects and maintenance of financial stability, but this policy involves both short-run and long-run costs. Johnson and Kwak (2010) and King (2009), among others, argue that TBTF policy creates moral hazard problem and thereby encourages excessive risk taking and inefficiency in resource allocation in the long run. In addition, with the TBTF policy, the frequency of future financial crises is expected to rise, which will entail more significant financial and real costs (Goodlet, 2010). The short-run costs of the TBTF policy consist of the bailout funds, which are a transfer of wealth from taxpayers to financial industry. Stern and Feldman (2009) report that long-run costs were three times the short-run costs of rescuing the savings and loans associations in the USA in the 1980s. Because of the short-run and long-run costs and competitive non neutrality in favour of large banks, the TBTF policy is termed to be the TBTF problem.

¹ The systemic risk is not estimated in this paper as there is no agreed-upon quantitative measure of systemic risk of a bank. But, the viewpoint presented in this paper is that systemic risk of a bank can be managed by lowering the possibility of insolvency risk of the bank. Therefore, the focus of the paper is on insolvency risk.

Among various measures which have been proposed to correct the TBTF problem, the “limit on size” solution has been more popular in policy and academic circles^{2,3}. This solution, as Stern and Feldman (2009) state, has apparently two attractive features that make it relatively more popular. Firstly, since size is easily measurable, this solution seems to be easy to implement. Secondly, it is also simple to implement as the regulator can simply order across-the-board shrinkage of balance sheets for TBTF banks. However, it appears that the difficulties in implementing the “limit on size” solution are more serious than the pretended simplicity stated above. For example, difficulties lie in the initial identification of TBTF institutions, finding the optimal cut-off size, engaging into efforts to disentangle complex large banks into parts without losing synergies, diversification and economies of scale and scope, and making “futile” efforts in the future to keep small banks small.

The main rationale for shrinking large banks into smaller sizes is that it lowers the systemic risk of failure of a bank. While it is controversial whether the systemic risk will decline as the systemic risk is a function of a host of other factors beside the size, this paper shows that insolvency risk of the bank can be affected positively or negatively depending upon how exactly shrinkage in balance sheet is done, in order to obtain the smaller size. Secondly, this paper relates a given paring down of a large bank into a smaller size to portfolio μ/σ efficiency, and shows that efficiency is most likely to be missed in shrinkage exercises. More importantly, it shows that achieving an efficient combination of assets and liabilities of a bank at lower level of risk does not require reducing the size of the bank. What matters is the portfolio composition of assets and liabilities, not the size of assets.

The rest of the paper is organized as follows: Section 2 presents the debate on “limit on size” solution to the TBTF problem. In section 3, systemic risk, insolvency risk, and rate of return of a bank are covered. Section 4 reports results on the irrelevance of the “limit on size” solution. Section 5 provides the conclusions of the paper.

The “Limit on Size” Solution

The “limit on size” solution seems straightforward to implement as it requires only three steps: (i) identify TBTF banks, (ii) shrink their balance sheets organically (non-renewal of maturing loans, etc.) and/or by divesting certain operations or assets, and (iii) not permitting small banks to rise beyond the threshold size. Rationale behind the solution is two-fold: (i) a large bank is difficult to manage properly, resulting in higher likelihood of failure, and (ii) there are less significant spillover effects following the failure of a small bank.

Aguilar (2011) states that Paul Volcker and many others advocate that the regulator should rein in the speculative activities of banks and let a bank stand alone as a traditional bank because the speculative activities have played key role in recent financial crisis. This requires restrictions on

² A sample of prominent observers who have advocated limiting the size of large financial institutions are Reich (2008), Schultz (2008), Greenspan (see Buiter (2009)), Drucker (see Dickson (2010)), King, Exchequer U.K (see Treanor (2009)), Johnson and Kwak (2010), and Moosa (2010). In Belgium, the Netherlands, Switzerland, U.K, and USA, calls have been heard to cap the size of domestic banks (Dermine and Schoenmaker (2010)).

³ For a brief comparative evaluation of all the possible solutions of the TBTF problem that have been covered in the extant literature, see Rashid, Drira, and Sharma (2012).

bank's proprietary trading and their ownership and sponsorship of hedge funds and private equity funds. Section 619 of the Dodd Frank Act (2010), known as the Volcker Rule, is aimed at to impose such restrictions.

Dickson (2010) report the following statement from Peter Drucker, which is tantamount to the "limit on size" solution: "there comes a point where firms are too big to manage." Johnson and Kwak (2010) in their book, *13 Bankers: The Wall Street Takeover and Next Financial Meltdown*, argue in favour of limiting banks' sizes for many reasons, including: (i) the TBTF policy creates competitive disadvantages for small banks because their debts are not perceived by market participants as risk free as those of the TBTF institutions, and (ii) the TBTF banks have vast power and control over media, politicians and regulators. They can campaign and lobby effectively to shape regulation in the way they want (see also, Ferguson (2010)).

Other arguments for a limit on size solution of a large bank include the cost/benefit analysis of the TBTF policy, market discipline, and the size of the spillover effects. It is commonly believed that the present value of costs far exceeds the present value of benefits of the TBTF policy (Goodlet, 2010). Depositors, creditors, and stockholders of large banks do not exercise market discipline on TBTF banks because of the anticipation of government's bailouts in case of a loss. Since smaller banks do not enjoy this downside protection, all the investors will be vigilant about excessive risk taking activities by these banks due to possible losses in financial distress situations.

On the negative side, there are several points. For example, the regulator has to identify banks that can cause significant spillover effects. Secondly, reducing the size of a large bank has substantial costs in terms of (i) the costs of downward paring down, and (ii) the loss of economies of scale and scope (Allen and Friedland, 2010). Thirdly, a limit on size will adversely impact on the diversification effect, making a bank more vulnerable to insolvency. And, failure of many small banks can entail as much, if not more, systemic risk than failure of a large bank. Fourthly, there is the question of regionality at regulation. If only domestic banks are subject to a limit on size, domestic banks will be competitively disadvantaged compared to their international counterparts. Fifthly, several analysts, including Allen and Friedland (2010), believe that the size was not one of the most important reasons for recent financial crisis, the main causes were regulatory forbearance, banks' excessive risk-taking activities, and the Fed's low interest rate policy. Sixthly, even if one accepts the merits of a "limit on size", there is the difficult issue of the determination of the "critical cut-off" size. Assuming that increasing size does increase economies of scale and scope and do increase spillover effects, there must be a trade-off between these opposing factors in determining the critical cut-off size. Also, optimal levels of economies of scale and scope may occur at different levels of size for different banks due to differences in their leverage, liquidity, capital, diversification, and the degree of interconnectedness with other financial institutions. Similarly, less threatening spillover effects may also happen still at different levels of size. Finally, keeping the pared down bank small overtime will be challenging to the regulatory authorities.

Systematic Risk, Insolvency Risk, and Rate of Return of a Bank

3.1 Systemic Risk and Insolvency Risk

The systemic risk of a bank refers to the adverse spillover effects of its failure on other financial institutions and on the real sectors of the economy. The channels by which these spillover effects may occur are: (i) the ensuing reduction in the money supply and its effect, through the multiplier process, on the economy, and (ii) the interconnectedness with other financial institutions and corporations, through inter-financial institutions' deposits and off balance sheet counterparty positions in contingent assets and liabilities. The spillover effects that make up the systemic risk are also termed as “contagion” or “domino” effects. Despite the above broad description of systemic risk, there is no agreed-upon definition of systemic risk, nor any widely accepted quantitative measure of systemic risk (Martinez-Jaramillo, (2010)). Also, Khoury and Naftilan (1999) show that modelling systemic risk as the “domino” effect fails to explain a real world phenomenon in the banking sector. We recognize that in the context of the “limit on size” solution, the measurement of bank's systemic risk would have been preferable but due to the above-mentioned difficulties in the definition and measurement of systemic risk, we opt to deal with insolvency risk in our analysis. The argument is that the systemic risk will occur only if a bank will become insolvent and if the insolvency risk of a bank is managed, that is equivalent to managing the systemic risk of the bank.

We measure the insolvency risk by the standard deviation of the rate of return on bank's equity to be denoted by σ_{ROE} . Equation (2), later on, will show that the rate of return on bank's equity, denoted by ROE , depends upon rates on all the assets and interest costs on all the liabilities. Therefore, σ_{ROE} embodies in itself liabilities/financial risks, liquidity risk, default risk, funding risk, etc of the bank. The verification of this assertion can be found in equation (4) in subsequent sub-section 3.3. Accordingly, σ_{ROE} can be perceived as the composite risk measure of the bank. A high level of σ_{ROE} will represent a high likelihood of failure of the bank.

Finally, we measure the rate of return of the bank by the rate of return on bank's equity, denoted by ROE . Other possible measures of bank's performance are rate of return on bank's assets, ROA , market rate of return on equity (rather than the book value rate of return on equity), Tobin's Q , etc. Despite the apparent desirability of the market rate of return and Tobin's Q , use of the aggregate data prevent us to use any of such measures. Moreover, the use of ROE is apparently superior to the use of ROA .

3.2 Balance Sheet of a Canadian Bank as of July 31, 2011

In order to calculate rate of return and insolvency risk of a bank, we have to start with the balance sheet of the bank, estimate rates of return on its assets and interest costs of its liabilities, estimate operating expenses of running the bank, and figure out the tax rate on bank's profit. Using the data on all Canadian banks (source: Canadian Bankers' Association) as of July 31, 2011, the average composition each dollar of total assets and correspondingly each dollar of liabilities and equity was as follows:

TABLE 1: BALANCE SHEET OF A BANK

Assets		Liabilities and Shareholders' Equity	
Liquid Assets, LA	0.133	Demand and Notice Deposits, D	0.254
Non-mortgage Loans, NML	0.341	Term Deposits, TD	0.405
Mortgage Loans, ML	0.199	Other Liabilities, OL	} 0.293
Securities, S	0.176	Contingent Liabilities, CL	
Contingent Assets, CA	} 0.151	Equity, E	0.048
Other Assets, OA			
Total Assets, TA	\$1.0	Total Liabilities, TL + Equity, E	\$1.0

According to Canadian Chartered Banks annual reports and Bank of Canada Review, the above items in the balance sheet are defined as:

- 1) *Liquid Assets*, LA, include Bank of Canada notes and coin, Bank of Canada deposits, Treasury Bills, Government of Canada direct and guaranteed bonds, and holdings of selected short-term assets.
- 2) *Non-mortgage loans*, NML, include loans to business, persons, investment dealers, regulated institutions and governments.
- 3) *Mortgage Loans*, ML, include residential and non-residential mortgages.
- 4) *Securities*, S, comprise of long-term corporate bonds, government bonds not included in LA, mortgage-backed securities, preferred stocks, and common stocks.
- 5) *Contingent Assets*, CA, include derivatives and related amounts.
- 6) *Other Assets*, OA, are assets such as goodwill and customer liability under acceptance, land, buildings and equipments, receivables from brokers, dealers, and clients, accrued interest receivable, and insurance-related assets.
- 7) *Demand and Notice Deposits*, D, include such deposits from individuals, businesses, various levels of government, and other financial institutions.
- 8) *Term Deposits*, TD, include fixed term deposits from all the entities listed under (7).
- 9) *Other Liabilities*, OL, come from acceptances, obligations related to securities sold short, and some other liabilities such as amounts payable to brokers, dealers and clients, accounts payable, insurance related liabilities, accrued interest, and cheques and other items in transit.
- 10) *Contingent Liabilities*, CL, include derivatives and related amount.
- 11) *Equity*, E, refers to preferred shares, common shares, contributed surplus, and retained earnings.

3.3 Derivation of the Expected Rate of Return on Equity, \overline{ROE} and Insolvency Risk, σ_{ROE}

3.3.1 Theoretical Construct. From the balance sheet, there are six different assets and four different liabilities. On the asset side, we combine OA with CA for two reasons: (i) the most dominant part of OA is banker's acceptances which are credit substitutes, not credit themselves, and (ii) it is difficult to segregate out non-interest income into a part coming from OA and other part arising from CA. On the liabilities and equity side, we combine OL and CL for the similar reasoning. Therefore, we are left with five categories of assets and three categories of liabilities. Denoting asset i by A_i where $i=1,..,5$, liability j by L_j where $j=1,2,3$, non-interest expenses as C , the rate of return on asset A_i as r_i , the rate of interest paid on liability L_j as i_j , and bank's tax rate as t , the net income to bank's stockholders in a given period is:

$$\text{Net Income, } NI = \left(\sum_{i=1}^5 A_i r_i - \sum_{j=1}^3 L_j i_j - C \right) (1 - t) \quad (1)$$

The rate of return on equity, denoted by ROE , is:

$$ROE = NI/E = \left[\sum_{i=1}^5 \left(\frac{A_i}{E} \right) r_i - \sum_{j=1}^3 \left(\frac{L_j}{E} \right) i_j - \frac{C}{E} \right] (1 - t) \quad (2)$$

The expected level of ROE is given by:

$$\overline{ROE} = \left[\sum_{i=1}^5 \left(\frac{A_i}{E} \right) \bar{r}_i - \sum_{j=1}^3 \left(\frac{L_j}{E} \right) \bar{i}_j - \frac{\bar{C}}{E} \right] (1 - \bar{t}), \quad (3)$$

where bar over a random variable indicates its average value.

We measure the insolvency risk by the standard deviation of ROE . This standard deviation, denoted by σ_{ROE} , is given in the following equation:

$$\sigma_{ROE} = \left[\left(\frac{1 - \bar{t}}{E} \right)^2 \left[\sum_{i=1}^5 A_i^2 \sigma_i^2 + \sum_{j=1}^3 L_j^2 \sigma_j^2 + 2 \sum_{i=1}^5 \sum_{s>i}^5 A_i A_s \sigma_{i,s} + 2 \sum_{j=1}^3 \sum_{q>j}^3 L_j L_q \sigma_{j,q} - 2 \sum_{i=1}^5 A_i \sum_{j=1}^3 L_j \sigma_{i,j} \right] \right]^{1/2} \quad (4)$$

3.3.2 Empirical estimates. For each quarter over the sample period of 2000Q1-2011Q2, we needed to obtain the following data in order to derive ROE and σ_{ROE} :

- 1) Balance sheet data: LA, NML, ML, S, CA/OA, D, TD, CL/OL, and E.
- 2) The rates of return on assets: r_{LA} , r_{NML} , r_{ML} , r_s , $r_{CA/OA}$; and interest rates paid on liabilities: i_D , i_{TD} , and $i_{CL/OL}$.
- 3) Other data: Average non-interest expenses \bar{C} and bank's tax rate \bar{t} .

We can choose size of \$100 billion in total assets⁴. We can obtain the levels of assets, liabilities and equity by multiplying 100 with fractions given in Table 1.

TABLE 2: BALANCE SHEET OF A BANK, WITH TOTAL ASSETS' SIZE OF \$100 BILLION
(Figures are in \$Billion)

Assets		Liabilities and Shareholders' Equity	
LA	13.3	D	25.4
NML	34.1	TD	40.5
ML	19.9	CL/OL	29.3
S	17.6	E	4.8
CA/OA	15.1		
TA	100	TL + E	100

⁴ The results of the paper do not depend on the size of the bank.

Historical estimates of the rates of return and interest rates are obtained by using the quarterly data in the consolidated balance sheets and consolidated income statements for all Canadian banks over the 2000Q1–2011Q2 period. In these estimations, we associated categories of incomes in the income statement with the corresponding assets categories. Similar association of categories of costs with corresponding liabilities was done. Definitions of rates of return and interest rates used in the paper are:

- 1) $r_{LA} = (\text{Interest income on deposits with regulated financial institutions} + \text{Interest income of securities issued or guaranteed by various levels of government of quarter } t) / \text{Liquid assets of quarter } t-1$
- 2) $r_{NML} = \text{Interest income from non-mortgage loans of quarter } t / \text{Non-mortgage loans, less allowance for impairment of quarter } t-1$
- 3) $r_{ML} = (\text{Interest income from residential mortgages and commercial mortgages of quarter } t) / \text{Mortgages less allowance for impairment of quarter } t-1$
- 4) $r_s = \text{Interest and dividend income from other securities of quarter } t / \text{Other securities, less allowance for impairment of quarter } t-1$
- 5) $r_{OA/CA} = \text{Total non-interest income of quarter } t / (\text{Contingent assets} + \text{other assets of quarter } t-1)$
- 6) $i_D = \text{Interest expense of demand and notice deposits of quarter } t / \text{Demand and notice deposits of quarter } t-1$
- 7) $i_{TD} = \text{Interest expense of fixed term deposits of quarter } t / \text{Fixed term deposits of quarter } t-1$
- 8) $i_{OL/CL} = (\text{Interest expense of subordinated debt} + \text{Other interest expense of quarter } t) / (\text{Contingent liabilities} + \text{other liabilities of quarter } t-1)$

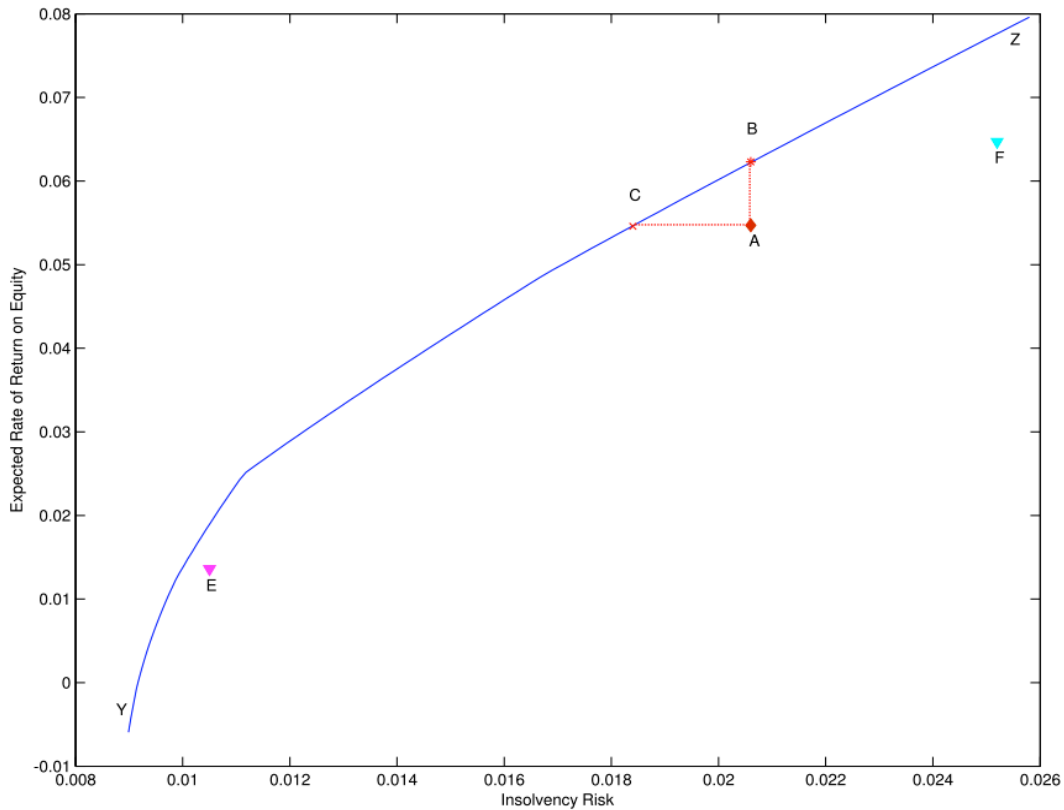
\bar{c} was obtained by the total of non-interest expenses and finally the tax rate \bar{t} was estimated by the ratio of total of current and deferred tax to taxable income.

Empirical Analysis and Results

4.1 The Effect of Shrinkage of the bank on insolvency Risk and Rate of Return

The expected rate of return on equity of the bank, given in Table 2, \overline{ROE} , was calculated as follows: The expected rate of return on each asset was obtained by taking the mean value of historical rates of return on the asset over 2000Q1- 2011Q2 period. Similarly, average interest rate on each liability was calculated. The expected non-interest expenses were estimated in the similar fashion. The average tax rate of the bank was also the average of quarterly tax rates over the sample period. Appendix A provides the above estimates of the required data and also 8 by 8 variance/covariance matrix. Using equations (3) and (4), and the above estimates of expected rates of return, expected interest rates, \bar{c} , and \bar{t} , and Table 2 data, the expected rate of return on equity \overline{ROE} was 5.47%, and insolvency risk, σ_{ROE} , was 2.06%. This plots as point A in graph 1 below.

GRAPH 1: THE EFFECT OF PARING DOWN ON INSOLVENCY RISK AND PORTFOLIO EFFICIENCY



We assume that the regulator requires the bank to reduce its size by \$10 billion – 10% shrinkage in bank’s size. We now show that insolvency risk may go down or may go up depending upon which asset(s) are pared down and correspondingly which liability (liabilities) are reduced. Obviously, if relatively more risky asset(s) and more risky liability (liabilities) are reduced, there will be a reduction in risk; otherwise risk will tend to rise. Number of possibilities of the 10 billion dollars shrinkage is infinite but to make the point and, without loss of generality, we report only two simulations, one showing the reduction and the other indicating an increase in insolvency risk

The first shrinkage of \$10 billion is assumed to be only in CA and OA and correspondingly this shrinkage is assumed to be only in CL and OL. The resulting balance sheet of the shrunken bank is as follows:

TABLE 3: BALANCE SHEET REFLECTING THE \$10 BILLION SHRINKAGE IN ONLY CA AND OA AND IN ONLY CL AND OL (\$Billion)

Assets		Liabilities and Shareholders' Equity	
LA	13.3	D	25.4
NML	34.1	TD	40.5
ML	19.9	CL/OL	19.3
S	17.6	E	4.8
CA/OA	5.1		
TA	90	TL + E	90

Once again using equations (3) and (4) and the composition of the bank given in Table 3, \overline{ROE} and σ_{ROE} are 1.36% and 1.05% respectively. In graph 1, this return/risk combination is indicated by point E. This shrinkage does reduce risk from 2.06% to 1.05% – a reduction of 49%, but the corresponding reduction in return is from 5.47% to 1.36% – a reduction of 75%. Even though, the regulator may like this substantial reduction in risk yet the bank will not accept such a sharp decline in return.

The second case of achieving a \$10 billion cut in the size of the bank is to have the following composition of assets and liabilities of the bank.

TABLE 4: BALANCE SHEET REFLECTING A CHANGED COMPOSITION OF ASSETS AND LIABILITIES IN ORDER TO ACHIEVE THE SHRINKAGE OF \$10 BILLION_(\$Billion)

Assets		Liabilities and Shareholders' Equity	
LA	13.3	D	25.4
NML	34.1	TD	27.5
ML	12.9	CL/OL	32.3
S	10.6	E	4.8
CA/OA	19.1		
TA	90	TL + E	90

In this case, it may be noted that each of ML and S are reduced by \$7billion, CA and OA are raised by \$4 billion. On the liabilities side, TD are reduced by \$13 billion, while OL and CL are raised by \$3 billion. In graph 1, this return/risk combination is indicated by point F. The consequences of the shrinkage in this case is that risk rises from 2.06% to 2.52% – a 22.3% increase, while rate of return on equity increases from 5.47% to 6.47% – an 18.3% increase. The point of this scenario is that despite the fact that the bank becomes smaller; the insolvency risk has increased, not declined. What appears to be the key factor in affecting risk (and also simultaneously the rate of return) is the portfolio composition of assets and liabilities of the bank, not its size.

4.2 Mean-Standard Deviation Efficiency and Limit on Size

Using the MATLAB program and the data as estimated above (as reported in Appendix A), Graph 1 plots the mean-standard deviation efficiency frontier, labelled as Y, C, B and Z. It is evident from the graph that none of the portfolio compositions considered in the previous

subsection is efficient. Thus, a paring down, mandated by the regulator, may not achieve a point on the efficient frontier. However, keeping size the same as before and changing composition of assets and liabilities can achieve points such as C in the graph, where the risk declines and return stays the same as before. To illustrate, the following composition of assets and liabilities, with the same total assets size of \$100 billion, achieves point C.

TABLE 5: BALANCE SHEET REFLECTING POINT C IN GRAPH 1(\$Billion)

Assets		Liabilities and Shareholders' Equity	
LA	11.52	D	28.8
NML	38.40	TD	38.08
ML	24.00	CL/OL	28.80
S	14.40	Equity, E	4.8
CA/OA	12.18		
TA	100.5	TL + E	100.5

Finally, point B in Graph 1 corresponds to risk level of 2.06% – the same risk as at point A, but with *ROE* of 6.23%, which is higher than 5.47% at point A. If the risk level of 2.06% is desired by the regulator, it does not require a limit on size; instead it would require the composition of assets/liabilities as given in Table 6 below.

TABLE 6: BALANCE SHEET REFLECTING POINT B IN GRAPH 1 (\$Billion)

Assets		Liabilities and Shareholders' Equity	
LA	11.22	D	28.05
NML	37.41	TD	39.22
ML	23.38	CL/OL	28.05
S	14.03	Equity, E	4.8
CA/OA	13.97		
TA	100	TL + E	100

The conclusion is that the size does not need to shrink to achieve an efficient portfolio and if desired, also a lower level of risk. Which level of insolvency risk the regulator will choose on the efficiency frontier? It obviously depends on the degree of risk aversion of the regulator. The Association of Investment Management and Research, AIMR, commonly employs the following utility function (Chen et al. 2010), which using our notation, is:

$$U = \overline{ROE} - 0.005A \sigma_{ROE}^2 \quad (5)$$

where A is the coefficient of risk aversion.

The higher is the value of A, which means higher is the degree of risk aversion, the lower level of insolvency risk will be chosen by the regulator and vice versa. Regulators of different countries may have different coefficients of risk aversion, which may explain why their respective desired risk levels may be different. As suggested by Graph 1, different desired risk levels will entail different optimal compositions of a bank's assets and liabilities.

Summary and Conclusions

This paper has shown that the “limit on size” solution of the TBTF bank does not necessarily lower insolvency risk of the bank involved. The reduction in risk can take place, not by paring down, but by changing the composition of assets and liabilities of the bank. It is shown that if the bank will shift from more risky assets, such as contingent assets, to less risky assets, such as mortgage loans, and from more risky liabilities, such as contingent liabilities, to less risky liabilities, such as term deposits, a reduction in risk can be achieved at the same size of total assets.

Secondly, it is shown that the “limit on size” solution may not lead to an efficient portfolio composition of bank’s assets and liabilities. It has been shown how an efficient composition can be achieved at the same size of the bank, which simultaneously can also reduce the level of insolvency risk.

APPENDIX A

$$\bar{t} = 0.2226$$

$$\bar{C} = 550,060.6276$$

$$r_{LA} = 0.0071$$

$$r_{NML} = 0.0142$$

$$r_{ML} = 0.0129$$

$$r_s = 0.0095$$

$$r_{OA/CA} = 0.0304$$

$$i_D = 0.0037$$

$$i_{TD} = 0.0084$$

$$i_{OL/CL} = 0.0048$$

Variance/covariance matrix = 10^{-4} x

0.0561	0.0601	0.0469	0.0379	0.1146	0.0446	0.0548	0.0346
0.0601	0.0940	0.0533	0.0476	0.1369	0.0628	0.0804	0.0476
0.0469	0.0533	0.0492	0.0328	0.1038	0.0390	0.0467	0.0290
0.0379	0.0476	0.0328	0.0420	0.0496	0.0362	0.0461	0.0266
0.1146	0.1369	0.1038	0.0496	0.6254	0.0926	0.1027	0.0849
0.0446	0.0628	0.0390	0.0362	0.0926	0.0445	0.0556	0.0327
0.0548	0.0804	0.0467	0.0461	0.1027	0.0556	0.0720	0.0414
0.0346	0.0476	0.0290	0.0266	0.0849	0.0327	0.0414	0.0279

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Application of the Option Price Model in Mining Industry Mergers & Acquisitions

The traditional corporate finance theory of discounted cash flow valuation (DCF) has many limitations. In order to complement the drawbacks, real option valuations (ROV) have been widely accepted and applied in many industries to evaluate projects or firms because of its ability to analyze flexibilities and uncertainties. In this paper, we focus on the mining industry, and identify its valuation challenges. We review the current developments of DCF and ROV model and apply both methods into a real firm (Barrick Gold) to analyze the value of the firm under Mergers and Acquisitions (M&A). Through the comparison, we discuss the benefits of ROV in mining industry and the premium of the acquirer's offer price. We also identify areas for further research.

Introduction

Despite significant research and development, the determinants of takeover price remain unclear (Edmister & Walking 1985; Wansley 1989; Fowler & Schmidt 2006). In practice, it depends on the valuation of the target firm. In this study, we will discuss issues surrounding the key element of M&A: corporate valuation. In mining industry, many existing studies are on valuating an individual mineral project or property/reserve. In contrast, we will look at the mining firm as whole by considering both its physical assets (reserve, capacity, etc) and the managerial flexibility. The reason we are interested in mining industry lies in its strategic importance to Canadian economy. According to Toronto Stock Exchange (TSX), 1400 firms (58%) of the world's public mining companies have listed on TSX and TSX venture exchange. After the global recession and subsequent market volatility, the total value of deals reached C\$162 billion. Canadian buyers were involved in 30% of 2600 M&A deals, and gold companies were most targeted.

Prior to valuation method appraisals in the mining industry, it is important to mention features that should be accounted for in valuating a mining firm. First, mining is a finite business: each reserve contains limited amounts of ore. Second, mining firms are associated high risks, such as geological risks on exploration properties, and legal/political risks. Next, mining companies have high fixed costs, such as equipment. Finally, because of these special characteristics of the mining industry, deciding the real market value has become a fundamental challenge. Especially when we apply DCF, we need to consider the discount period of the company based on the life span of

their assets (normally the reserves). Further, abandoning or temporary stopping a reserve based on the managerial decision would have a significant impact on the firm value itself; this leads to an interesting question: will the DCF be able to cope with the changes correspondingly?

M&As are motivated by expected added values. In this study, we focus on how to perform a more accurate assessment of a target company in terms of reflecting its uncertainties, risks and flexibilities. The corporate finance theories and methods have been developed and used in corporate valuation. In current practices in mining industry the most common and fundamental valuation methods are: Income based valuation (such as DCF and ROV), Market based method (comparables method), and Cost based method (appraised value). DCF is the most traditional and fundamental method by discounting all the projected future cash flow to the present, however, its limitations in investment opportunities, especially the ones with multiple steps, are easily noticeable and have been widely discussed (Myers 1984; Luehrman 1995). Option-based valuation theories and methods are becoming increasingly popular due to the flexible nature. This method provides an option instead of an obligation for a corporate investment. Market based method (comparables method) assumes the average value of the comparable firms is the fair market value. By using this method, the firm is compared with other similar firms in terms of industry, size, revenue, etc. Cost based method (appraised value) appraises a firm by looking at its cost which would occur if it were replaced by another asset at the present time.

While multiple methods are available for estimating mining firms, income-based valuation, which includes DCF and ROV, is most widely used, and will be the focus of this thesis. Specifically, we investigate the following research questions: By comparing with DCF and ROV, and incorporating those special characters of mining industry, which method is more accurately reflecting the real value of a firm? Can adopting option pricing approaches really better serve a dynamic investment decision making? What are the factors contributing the acquirer's offer premium?

The next section of the paper provides a literature review that will explore two basic income based valuation models. We then apply option pricing model (Margrabe's exchange option model) and DCF to appraise one candidate firm- Barrick Gold Corporation, and extract its hidden managerial information. Next, we analyze other effects such as commodity price, competition and other factors on premiums in M&A activities in mining industry. We prove the value appraised by real option is closer to the "real" market value of the firm. The difference between the appraisal and the deal price – premium will be discussed and analyzed. Finally, we conclude the entire thesis and point to future research.

Literature Review

Corporate valuations have been extensively studied in past decades. The research findings have made a great impact on companies' financial daily operational activities. In this section, we will review the relevant theories and methodologies.

Discounted cash flow

Discounted cash flow (DCF) model is to reflect the present value of all estimated future cash flows. The cash flows include dividends, expenses, and earning, etc. In corporate valuation, discounted cash flow model is also called Net Present Value (NPV) model where NPV is obtained by the present value of future cash inflows of an investment/project minus the present and any associated future cash outflow. The NPV model is very common to appraise a

project/investment. If the NPV is greater than or equal to zero, then the project/investment should be implemented; otherwise the project should be abandoned.

Capital asset pricing model

Capital asset pricing model (CAPM) was first introduced by Sharpe (1964). It is widely used to calculate the required rate of return. It models a linear relationship between the expected return and the systematic risk of a portfolio. The basic assumptions of the model are 1) all the investors are risk averse, 2) risk-free investments exist, such as government bond, 3) the return on assets is normal distributed, 4) the market is perfect and information symmetrical.

Daniel et al. (2001) studied the case that the expected returns are linearly related to both risk and mispricing measure, caused by the biased shareholders' expectation in the stock market. Their findings include the β value may be used to predict future return even though investors may misevaluate because of the joint effect of risk and mispricing in the model. The major applications of CAPM are stock exchange in a regulated market. Another model, Weighted Average Cost of Capital (WACC), is taking the capital structure into account by calculating the minimal rate of return an investment should earn to pay all its creditors. Petry (1975) had a study on 284 firms in Fortune industrial, retail, utility and transportation corporations. His main findings are 1) firms tend to maintain a particular capital structure, 2) each industry has its own optimal structure, 3) the management should have 5-6 years capital budgeting period. Miller (2009) argued the cash flow discounted WACC is inadequate to cover the payback when considering all the individual sources of financing separately.

Application of DCF. In the current practice, DCF is the most popular method to value a project, an investment or a whole company in many industries. In mining industry, DCF is used to estimating reserves differing metals, complexities, and life span, as well as infrastructural projects. Kaplan and Ruback (1995) used discounted cash flow technique to examine 124 management buyouts. Their study proved DCF is able to provide reliable estimation of market value. Their sample is across multiple companies and industries. Risk premiums are positively significantly related to the industry beta, they use CAPM-based approach to calculate the discount rate. In our study, we will use similar Adjusted Present Value Technique to value cash flows. French and Laura (2005) incorporated uncertainty into explicit DCF model by recognizing the uncertain input variables and their pertaining probability distribution to analyze the real estates. Ikromov and Yavas (2012) performed an experimental study in the real estate industry by using discounted cash flow method. They argued that the value for assets with more volatile cash flow would be lower.

Limitations of DCF. Myers (1984) identified the gap between financial theories and strategy management which may be distorted by a difference in languages and cultures. DCF analysis may be misused in managerial practice. When applied, the business strategy still may fail due to inherent biases. Paddock et al. (1988) had a case study on offshore petroleum leases and pointed out DCF has some major weaknesses in valuating mining industry: 1) since the choice of time of DCF is not transparent the different assessments of future cash distribution may lead to divergent valuations. 2) DCF is very sensitive to the discount rate chosen. 3) DCF, especially Monte Carlo application, is complex and costly.

The geological assessments and cost distribution may also cause large discrepancies. Trigeorgis (1993) stated DCF is not able to response to unexpected market developments. Since the actual

market is full of change and uncertainty, the strategic NPV should equal static NPV (expected cash flow) plus the value of managerial options.

Real Options

Real option has developed both theoretically and practically over past decades. It challenges the traditional valuation techniques, and is believed a better decision-making tool by many researchers. Trigeorgis (1993) categorized the common real option into option to defer, time to build option, option to expand, option to abandon, option to switch, growth option and interacting options. Quigg (1993) was the first to perform an empirical testing of real option pricing model. She defined the option premium as “the difference between the intrinsic value and the option model value, divided by the option model value”. She used a continuous time model to test 2700 land transactions, and she found the market price reflect a premium of option to delay. Based on Trigeorgis’s option category, Slater et al. (1998) applied the complementary technique, which combined discounted cash flow and real option to dynamically value the investment opportunity and the strategy making process. They found traditional DCF complementing real option analysis can provide more realistic and border view of investment decisions. Morellec and Schürhoff (2010) developed a model to test the value of option under asymmetric information. They found that if the firm has positive private information that will signal the outside investors, then the value of option to delay will be significantly decreased.

Real Option Valuation Model. The theoretical models of the option pricing model have greatly developed since Merton and Scholes received the Nobel Prize in Economics in 1997. Black–Scholes model is the most prominent option pricing model. Black and Scholes (1973) showed a positive function between the variance of the risky asset and the price of the option. Merton (1973) showed the value of a call option is an increasing function of rate of interest and time to maturity. Margrabe (1978) developed the European-type option to exchange one asset for correlated another. The option is based on Black-Scholes model (BSM) with similar assumptions. The main differences between Margrabe’s exchange model and Black-Scholes model are: 1) Margrabe’s formula takes the volatilities of both assets into the calculation. 2) As a special case of BSM, the interest on the asset two is zero, because asset two’s return over the period is equal to the compensation for the investment. 3) In BSM, the exercise price is known; but the exercise is unable to spot in an exchange option.

Many variations of BSM were researched. Stulz (1982) provided and proved the European call option on a minimum of two assets by borrowing Margrabe’s result when the exercise price is equal to zero. He then argued the maximum of the option price will be reached if the correlation of the two assets is equal to one. McDonald and Siegel (1985) developed Margrabe’s exchange option to model the option to shut down. They assumed the future prices and costs follow an infinite stochastic process, and they also extend the existing model by introducing dividends. Carr (1988) developed Margrabe’s model to a general American style option, which is more suitable for realistic situations. Morellec and Zhdanov (2005) further developed a framework, which is determined by both timing and competition of imperfect information in an M&A.

Application of Real Option. The real option valuation has been applied in the areas of R&D, real estate and natural resources with increasing popularity. We next briefly review these three fields.

R&D

Kellogg et al. (1999) studied the application of real option in a biotechnology firm. They divided the entire R&D project into many stages, and suggested that based on the information given in different stages, more specific assumptions should be utilized. The valuation methods used in their study include decision tree, Influence-Diagram, and Binomial-Lattice. Villani (2008) used exchange option model combining game theory to value the R&D development cost and value under an imperfect information setting. His model captured the value of uncertainty, but the model can be improved by using American exchange option model to decide the optimal time to invest.

Real Estate. Lucius (2001) conducted a study on the application of real option theory in real estate development. He believes real option offers a more flexible decision making process. The current literature has provided a valid theoretical support; however, the more comprehensive practical applications need to be further researched. Chiang et al. (2006) used Quigg (1993) option model to study on the land auctions and property transactions in Hong Kong. Their empirical study provided evidence that the option based pricing model has a more accurate valuation on the lands/properties, and the option premiums are positively related to the volatilities that are consistent with Quigg's study.

Natural Resources. The real option valuation has become increasingly popular; it is widely applied in natural resources. Kemma (1993) had three case studies on Shell group including a timing option in the offshore industry, a growth option in the manufacturing industry, and an abandonment option in the refinery industry. The study was aimed to use option pricing theory in budgeting decisions. She argues that the option theory is able to well quantify the flexibility. Davis (1996) pointed out the option premium can only explain "at most half of the observed gap between DCF value and market value, and adds at most three percent to a mineral asset's gross worth". Slade (2001) valued managerial flexibility using a real option in mining industry. He compares a stationary model (Mean Reverting process) and a nonstationary model (Geometric Brownian motion process) by the presence and absence of managerial flexibility. Sebehela (2010) valued a gold firm by using option pricing theory. He uses the valuation results and the rational to explain why the company is rejected in a context of M&A.

Limitation of Real Option. Lander and Pinches (1998) discussed three issues when implementing real option models. The types of models currently used are not well known or understood by corporate managers and practitioners. The required modeling assumptions are often violated in a practical real option application. The necessary additional assumptions required for mathematical tractability limit the scope of applicability. Bowman and Moskowitz (2001) highlighted some limitations of using the real option. They believed "The usefulness of a real options approach to quantitative decision making depends on the extent to which the characteristics of the investment proposal being evaluated match the assumptions of the option valuation model being used" and that "The effective use of a quantitative model to value a potential strategic investment is limited by the need to calculate the model's inputs."

Summary of findings

Over the past two decades, real option valuation that is derived from the financial option has been implemented to evaluate projects or firms in many industries. As many researchers point out, real option cannot replace discounted cash flow, but may complement valuation approaches.

Comparing with DCF, real option can integrate company's strategic decision into the capital forecasting process. DCF cannot estimate the future uncertainties and volatilities; therefore DCF may be biased in the analysis due to the nature of the investments. According to Bowman and Moskowitz (2001), the biggest challenge for applying real option valuation is to calculate the inputs for the option models, because all the considerations in the decisions making process have to be consistent with the assumptions of the option models. A wide range of real option researches has been done in recent decades. Real option valuation has been mostly applied into multi-stage, risky and uncertain projects, companies or industries.

Case Study

We next use a case of Barrick Gold to illustrate the option pricing model. Barrick Gold is the industry leader with the largest gold production, gold reserve and market capitalization; it operates globally and has projects across the world (Barrick.com). On April 25, 2001, Barrick Gold made an announcement to the public on their intention to acquire Equinox Mineral Ltd, a copper producer. According to CEO Aaron Regent, "The acquisition of Equinox would add a high-quality, long-life asset to our portfolio, and is consistent with our strategy of increasing gold and copper reserves through exploration and acquisitions". The all-cash deal was at C\$8.15 per share, in total C\$7.32 billion. Table 1 shows the total revenue of two companies before the merger, the data is from the company websites or obtained through Bloomberg terminal.

The offer is 17 percent more than the average share price of Equinox over the past 20 days of trading, and also 16 percent more than the proposal from another mining company Minmetals Resources. The historical prices of Barrick Gold and Equinox were obtained from Bloomberg. We used the daily closing prices back to January 2011. We measure the volatilities of the two securities in a relation to the market – S&P500 index. The regression analysis and summary table are presented in Table 2.

Table 1

	Revenue (Mln, CAD)		
	2010	2011	
Product Line	Equinox	Barrick	Combined
Gold Mining		12,131.72	12,131.72
Copper Mining	940.48	1,695.65	2,636.14
Exploration & Production		175.11	175.11
Other Metals		156.31	156.31

Table 2

Range:	01/01/2010 to 4/24/2011	
Relative index	S&P500 index	
	Barrick Gold	Equinox Mineral
Sample size	327	327
Volatility σ	0.919	2.305
Intercept	0.946	0.109
Correlation ρ	0.409	0.524
ρ^2	0.167	0.274
Std Dev of Error	1.638	2.994
Std Dev of σ	0.114	0.208
t-test	8.083	11.087

The regression analysis between Barrick and Equinox is shown in Table 3.

Table 3

Range:	01/01/2010 to 4/24/2011
Sample size	327
Volatility σ	0.232
Intercept	0.211
Correlation ρ	0.118
ρ^2	0.014
Std Dev of Error	3.49
Std Dev of σ	0.108
t-test	2.151

As mentioned in the previous section, the main difference between DCF and Real Option is the ignorance of managerial flexibilities in DCF; thus it generally underestimates the value of a merging firm. The flexibility of the managerial decision can derive a significant amount of benefit for an M&A. Under the uncertainties, the management can delay a deal or call off a deal (not exercise the option); this option can be treated as an “exchange” option. We next provide detailed analysis. We begin with the presentation of the valuation using real option method with the incorporation of Barrack Gold’s investment decision. In particular, Margrabe (1978) model will be used to determine the real option value, which may exist when Barrick Gold acquired

Equinox Minerals. From the acquisition intention of Barrick Gold Corp made to public to the date on which the deal completes is the time expiration T in a European option. In order to simplify the calculation, we let the T=0.25year. The growth option gives Barrick Gold (S1) a right, but not the obligation to buy Equinox Minerals (S2) at a certain point in time.

Margrabe's Exchange Option Model

Margrabe shares many of Black-Scholes's assumptions; they are both under frictionless market, and the assets prices follow a geometric Brownian motion with constant volatility σ . Margrabe (1978) also assumes the price of a riskless discount bonds grow exponentially at the riskless interest rate r.

The rate of return of each asset

$$dS_i = \mu_i S_i dt + \sigma_i S_i dW_i \quad i=1,2$$

dW_i is a Wiener process; therefore, dS_i is an "Ito process".

The payoff $C(T)$ is $\max(0, S_1(T)-S_2(T))$ at time T. The value of the option must satisfy $0 \leq C(T) \leq \max(0, S_1(T)-S_2(T))$

The formula is given as:

$$C(T) = S_1 N(d_1) - S_2 N(d_2)$$

Where

$$d_1 = (\ln(S_1/S_2) + 0.5 \sigma^2 T) / \sigma \sqrt{T}$$

$$d_2 = d_1 - \sigma \sqrt{T}$$

S_1 = the asset that is exchanged for another, Barrick Gold

S_2 = the acquired asset, Equinox

T = Time to exchange

$$\sigma^2 = \sigma_1^2 + \sigma_2^2 - \rho_{12} \sigma_1 \sigma_2$$

σ , combined volatility of asset 1 and asset 2

σ_1 , volatility of asset 1, Barrick Gold

σ_2 , volatility of asset 2, Equinox

ρ_{12} , correlation between asset 1, Barrick Gold and asset 2 Equinox

$N(d)$ is the cumulative standard normal density function

The results calculated using Margrabe's formula is list in Table 4:

Table 4

	Barrick	Equinox
S	53.07	7.5100
σ	0.9460	1.8700
T	0.2500	0.2500
r	0.0172	0.0172
D	2.46007455	1.463288805
N(d)	0.993054592	0.928305815

The max payoff of Barrick is $C(T) = 45.72983053$. This confirms the Barrick at least should pay C\$7.3402 to Equinox. Before Barrick Gold placed its intention to acquire Equinox, the China's Minmetals Resources Ltd bided on C\$6.3 billion. Of course, the offer was rejected by Equinox.

DCF Model

Now, let's take a look at the valuation by using DCF method. We use NPV (Net Present Value) analysis to determine the target firm value. We assume the M&A will benefit Barrick Gold for five years. Discounting the future free cash flows by the WACC (Weighted Average Cost of Capital) will give us the net present cash value. If the NPV is positive, the positive amount would be the maximum amount Barrick Gold would pay for Equinox; if the NPV is negative, and then this deal should be never reached. According to the Cost of Capital by Sector by New York University, they collect 73 firms in Metals & Mining sector, the average cost of capital is 9.31 percent, and tax rate is 11.04. We use the past five years' financial data of Barrick Gold to project the next five years cash flow. The growth rate and the expense rate are estimated as the average of past five years. Again, all the data are from the company website and Bloomberg terminal.

Table 5 in the appendix shows the cash flow analysis. From this table, we can see the NPV is approximately US\$6.2 billion, which is a massive discount comparing to the deal price of US\$7.8 billion. Our result is consistent with previous literatures that DCF is likely to undervalue a firm/project. The traditional NPV analysis of a set of future forecasted cash flow cannot capture the full value of the acquisition, because much of the value is generated from other hidden options.

Comparative Analysis

The current valuation methodologies, even by using real option valuation, are still not able to accurately calculate how much a firm should pay. According to Dionne et al. (2010), most of acquirers pay for a significant amount of premium to the target companies. The average premium is 34.62 percent with a standard deviation is 30.46 percent. They analyzed the independent determinations in four categories: target (run-up effect, market-to-book, sales growth, company size), acquirer (cash flow, corporate governance, and strategy), transaction (transaction type, hostility, competition, information asymmetry) and other instrumental variable such as regulations/policies.

Competition

Neither Margrabe's model nor NPV analyses incorporate the game-theoretic competition in an M&A. Yu and Xu (2011) formed the M&A pricing formula by using classic Rubinstein's offer-counteroffer bargaining model. However, their formulation only introduces two players (the acquirer and the target) in the game. Another important element is missing – competition. Intuitively, the effect of competition is not negligible in the bidding war. Consider a simple competition game, when two equal entities engage in a single bidding contest, competitive pressure force the bidder to pay a premium which may equal to the total potential synergy. Aktas et al. (2010) proved that competition allows target shareholders to receive a reasonable premium. In recent years, there is a growing number of papers on the real option game models (Aktas et al., 2010; Yu & Xu, 2011). These models are better fit in the context of real competing market. These models have a great potential for future research.

Commodity Price

Since the commodity boom started, the mergers and acquisitions activities in mining industry became very vigorous. Many mining companies took advantages of the high commodity price and relatively low borrowing cost to acquire either operation synergy or financial synergy. Risk management also plays an important role in the decision making. One of the main motivation of most mining companies involving in M&A is to hedge the up forward underlying commodity movements.

Conclusions

This paper has used discounted cash flow method and real option model to valuate Barrick Gold which acquired Equinox in 2011. The comparison of the results provides an explanation on why Equinox should accept Barrick's offer, but reject Minmetals'. This is the first paper using Margarabe's exchange option model and comparing with the traditional NPV analysis. The result is consistent with previous literatures. The real option method bridges the traditional corporate finance practices and the strategic decisions. This approach better incorporates managerial flexibility and strategic planning; the outcome is closer to the company's real market value.

Appendix

Table 5

Millions USD	Historical Year Ended					Projected Year Ending					
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Total Revenue	\$ 6,332.00	\$ 7,913.00	\$ 8,136.00	\$ 10,924.00	\$ 14,312.00	\$ 17,329.47	\$ 20,983.13	\$ 25,407.10	\$ 30,763.81	\$ 37,249.90	
COGS	3128	3955	3948	4201	6316	7988.66	9672.95	11712.34	14181.71	17171.71	
Gross Profit	3204	3958	4188	6723	7996	9340.81	11310.18	13694.76	16582.10	20078.19	
Operating Expense	1855	2816	6189	2124	1317	5878.07	7117.37	8617.96	10434.95	12664.98	
SG&A	885	1859	5116	912	-102	3731.75	4128.39	4526.39	4908.71	5251.04	
EBITDA	2330	2090	-928	5811	8098	5600.06	7181.70	9188.37	11673.39	14827.15	
D & A	990	957	1073	1212	1419	2146.52	2988.98	4091.57	5526.22	7383.94	
EBIT	1349	1142	-2001	4599	6679	3462.74	4192.81	5076.80	6147.17	7443.21	
Taxes	541	590	648	1370	2287	382.29	402.89	500.48	678.65	821.73	
Capital Expense	1055	1807	2351	3323	4973	4618.09	5591.75	6770.69	8198.18	9956.65	
Working Capital	1200	1477	655	670	889	1076.43	1303.38	1578.18	1910.92	2313.80	
Free Cash Flow to Firm	\$ (86.00)	\$ (575.00)	\$ (3,105.00)	\$ 1,103.00	\$ 619.00	\$ 421.35	\$ 900.21	\$ 1,562.41	\$ 2,463.82	\$ 3,675.88	
Present Value of Free Cash Flows						\$ 381.84	\$ 739.06	\$ 1,163.67	\$ 1,665.38	\$ 2,249.52	
NPV						\$ 6,198.08					

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**ASB 2012
Finance Abstract**

Statistical Analysis of the Weekend Effect of the VIX Index

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The weekend effect is a widely studied but incompletely understood financial phenomenon. An analysis of the previously reported weekend effect with the VIX index (a measure of implied volatility of the S&P 500) was completed. The analysis demonstrated that while there is an overall weekend effect with the VIX index, a closer look shows time periods when the weekend effect is not statistically significant for the VIX. Previous and new suggestions on the source(s) of transitions between these time periods are discussed in the context of the VIX index over the past 20 years.

ASB Conference 2012 Proceedings

Gender & Diversity Stream

Dalhousie University

28-30 September 2012

ASB 2012
Gender & Diversity Abstract

Media Cause and Effect in the Shafia Case

Alison Delory
Mount Saint Vincent University

In 2009, four female members of the Shafia family of Montreal were murdered. The victims both produced and were produced by media. Media don't merely mirror events in society, but through agenda setting, framing and selection, re-present events. In so doing, the media contribute to the entrenchment or creation of culture. Culture, at both individual and societal levels, forms our identity and is our common language. By providing us with a framework of understanding, media help construct social reality, in this case, of the Muslim Afghan immigrant in Canada as "Other." This case demonstrates how a family's beliefs clashed with Canadian freedoms, and examines the media's role in causing and effecting a tragedy.

ASB Conference 2012 Proceedings

Human & Industrial Relations Stream

Dalhousie University

28-30 September 2012

Human Resource Management, Workplace Restructuring and Grievance Rates: Some Preliminary Findings

Despite the growing interest in dispute resolution approaches and outcomes (Lewicki et al., 2011), relatively few studies have focused on the factors associated with grievance rates. Using two samples (one from Canada and the other from New Zealand), we found that investment in human resource management was associated with a lower grievance rate. However, workplace restructuring was related to a higher rate of grievances.

Introduction

Labour, management and policy-makers often express a desire of reducing the number of grievances at the workplace. However, there is comparatively little recent research exploring grievance initiation at the workplace level and most of the research that has been conducted is based on data from the United States.

In our paper, we use data from two countries (Canada and New Zealand) to investigate factors associated with the rate of grievances at the workplace. More specifically, we focus on three variables (union status, human resource management, and workplace restructuring) and examine their association with grievance rates.

Background

During the last few decades (and especially in the 1990s), a considerable amount of research regarding grievance rates has been conducted (Labig and Greer, 1988; Bemmels & Foley, 1996; Bemmels & Lau, 2001; Peterson & Lewin, 2000, Walker & Hamilton, 2011). Early literature was primarily focused on factors related to the filing and settlement of grievances (Lewin & Peterson, 1999). However, studies also examined other areas including the relationship between grievance initiation and firm performance (Kleiner, Nickelsburg & Pilarski, 1995), the use of grievance procedures as one element of high performance work systems (Huselid, 1995), behavioral outcomes of grievance activity (Klaas, Gainey & Dell'Omo, 1999; Lewin & Peterson, 1999), assessing an employee's decision-making for filing a grievance (Klass, 1989, Cappelli & Chauvin, 1991) and, more recently, the influence of employee involvement programs (Colvin, 2004).

Grievance rates are an important area to study for a number of reasons. First, the initial incidence where workplace conflict can be measured is often the grievance rate. Although grievable events may be significantly higher, there are limited studies that measure this factor (Lewin & Peterson, 1999), given many potential grievances are never filed. Second, although literature has not provided

an optimal level of grievances, they serve as a barometer for the workplace. It is generally thought that a minimal number of grievances is best; however, Bemmels and Lau (2001) argue that a low grievance rate could indicate either good management practices or an ineffective grievance procedure. Third, studying grievance rates provides an opportunity to explore the value of unions to employees at a time when unionized workplaces are declining. Fourth, it is becoming more important to study grievance rates in non-unionized workplaces where the organizations increasingly adopt grievance processes to address workplace conflict (Bingham, 2004; Feuille & Delaney, 2004; Colvin, 2011).

Our paper builds on a developing body of literature that examines the influence of organizational factors (such as human resource management practices and workplace restructuring) on grievance rates. It is particularly pertinent to examine organizational factors given Bacharach and Bamberger's (2004) research suggesting that workplace characteristics influence grievance initiation more directly than labour market factors.

One of the first authors to indirectly examined the influence of HR practices was Huselid (1995) who studied HR practices as a component of high performance work systems. Colvin (2004) found a relationship between employee involvement programs and lower grievance rates in unionized workplaces but this relationship was not found in non-union workplaces. Colvin (2003) also found that non-union grievance procedures were used more when the procedures, including non-union arbitration and peer review, involved non-managerial decision makers. In addition, employers that used self-managed teams reported lower rates of grievance initiation.

These studies indicate that organizations that invest in their employees, by adapting bundles of HR practices and by including workers in the decision making processes (whether in the organization's daily operations or the grievance process) experience fewer grievances. The findings suggest an opportunity to further study the impact of the relationship between the financial and strategic emphasis that employers place on their employees, as operationalized through HR bundles or systems. This stream of research is relatively unexplored.

This paper also expands the existing literature by moving away from the individual or micro-level of analysis which has been the more common approach to studying grievance behaviour (with a particular focus on characteristics of grievance filers). Such research historically focused on organizational members and what characteristics, including demographic (Gordon & Miller, 1984, Peterson & Lewin, 2000, Lewin, 2004, Hayward et al., 2004) and attitudinal (Bemmels & Foley, 1996) factors that distinguished grievance filers from those who refrained from initiating a grievance.

Studies that have addressed organizational factors include Labig and Greer (1988) who found that environmental factors affecting grievance initiation included labour market conditions and the impact of technology. Bemmels and Foley (1996) also examined the influence of such management factors as how strictly performance and disciplinary standards were enforced by management, supervisor behaviours, knowledge of the collective agreement / contract, and the extent to which management monitors employee behaviour and their impact on grievance rates.

Examining perceptions of respondents reporting about their workplace offers a new opportunity to develop and expand the existing literature. It provides a distinct perspective from earlier research by responding to calls from Lewin and Peterson (1988) and Bemmels and Foley (1996) encouraging the use of subjective measures of grievance initiation. Bemmels and Foley (1996) argued that subjective

measures are preferable in studies that evaluate grievance procedure effectiveness.

Our study provides an opportunity to measure the perceptions of organizational members on factors that impact their work including investment in human resource management and workplace restructuring. Perceptual measures may be appropriate when examining grievance rates. We found that many employees are not aware of the exact rate of grievances but are knowledgeable on the general use of the measures and grievance rates. There is also the opportunity to examine grievance rates from the perspective of respondents who may be impacted by workplace conflict, but do not directly address it as part of their position (as in the case of HR managers).

Method

Data Collection

We use data from two studies to examine factors associated with grievance rates. For Study 1 (Canada), our data were obtained from a survey of business school alumni of a Canadian university. The mailing list was provided by the Alumni Office of the university. Other researchers have also used university alumni as their sample (Feuille & Chachere, 1995). While we received responses from just under 1,000 graduates (for a response rate of 28%), we excluded respondents who were not currently employed. In addition, missing data on our variables also reduced the number of useable responses. As a result, the findings presented in this paper are based on 758 responses.

Data for Study 2 (New Zealand) come from a survey of senior management officials (chief executive officers, managing directors or other senior management personnel) in that country. Our unit of analysis in our study is the establishment; in other words, a respondent establishment may be part of a larger organization. The results presented in this paper are based on 1,008 useable responses (response rate of 29%).

Dependent Variable

Our dependent variable, which was the same for both studies, is based on perceptions of the rate of grievances at the workplace. The variable was measured using a six-point scale with the anchors "very low" and "very high". A lower score on the item indicated a lower rate of grievances. Note that the dependent variable is based on respondents' perceptions of the rate of grievances.

As stated previously, subjective evaluations of grievance procedures are an important component of research in this area. It can be argued that an employee should be able to provide a reasonable assessment of the grievance rate related to his or her workplace (but may not have detailed information on specific grievance issues). Moreover, based on previous research (for example, Bemmels & Foley, 1996; Lewin & Peterson, 1988; Stewart & Davy, 1992), there was concern that grievance rates may vary noticeably across industries. Consequently, this paper uses the perceptual item outlined above to measure the grievance rate.

Primary Independent Variables

We have three primary independent variables. The first, union status, is a dummy-coded variable (with 1 indicating the presence of a union at the workplace and 0 indicating no union). We hypothesize that the grievance rate will be higher in union workplaces. Why might a unionized

workplace have higher grievance rates? It has been argued that unions give employees a voice and a well-established system of grievance administration is set up for employees (Freeman & Medoff, 1984; Gunderson & Taras, 2009). Colvin (2003) also suggests that there are factors related to the institutional structure of a unionized workplace that potentially increase the number of grievances. These include putting pressure on management, the role of union stewards, and the role that a collective agreement has in bringing forward grievances. Research indicates that non-union employees may fear retaliation if they file grievances (Boroff & Lewin, 1996, Lewin & Peterson, 1999; Lewin, 1999; Colvin, 2004).

There has been relatively little research on grievance rates and management factors. Moreover, despite the current focus on high performance work systems (Pfeffer, 2005; Rizov & Croucher, 2009; Huselid & Becker, 2011), there has been minimal work on the relationship between human resource management practices and grievance filing behaviour.

The current research on high commitment human resource management focuses on human resource management "systems" or "bundles" of practices rather than on examining the impact of any one practice (Huselid and Becker, 2001). For the Canada study, we measured a high-involvement HRM strategy using 14 items adapted from Bae and Lawler (2000), with each of the items measured on a six-point scale (1 = Strongly Disagree and 6 = Strongly Agree). The various items addressed issues relating to employee training, employee empowerment, selective staffing and performance-based compensation. Sample items included: "the organization places a high priority on training, the organization gives employees an opportunity to use personal initiative, and the organization is very selective when hiring new employees". The Cronbach's coefficient alpha for the scale was 0.91.

With reference to the New Zealand study, the objective of the research was to examine the adoption of specific HRM practices / policies. Consistent with the HR "systems" or "bundles" approach, we developed an index of human resource management practices as a means of measuring our HRM "bundle". For each of eighteen practices, the respondent indicated the percentage of employees covered by the practice (thus the minimum score was 0 and the maximum score was 100). We averaged the overall total. The 18 practices addressed a variety of issues including communication, team-based programs, training, compensation, performance management, and employee selection. We hypothesized that investment in HR would be related to a lower rate of grievances.

There is a developing body of research on workplace restructuring and organizational cost-cutting practices (Freeman, 1999; Littler & Innes, 2003). We measured workplace restructuring using a seven-item scale that measured the extent to which the employer engaged in such practices as using across-the-board cutbacks, cutting planned capital investment, and reducing labour costs. Each of these items was measured on a six-point scale, with 1 indicating that the organization did not use the practice in question over the past two years and 6 representing a substantial use of the practice. The workplace restructuring scale had a Cronbach's coefficient alpha of 0.86 for the Canada study and 0.82 for the New Zealand study. We expected that workplace restructuring would be associated with a higher grievance rate.

Control Variables

With respect to control variables, we included the market demand for the employer's primary product or service (measured on a six-point scale; 1 = substantial increase and 6 = substantial decrease in demand). It can be argued that employees may be more likely to file grievances when the employer's business is doing well (under the belief that the employer may have more resources to settle

employee claims). However, the counter position is also plausible in that employees may have more complaints during times of economic hardship.

We also controlled for the industry sector (services, manufacturing or non-profit / government), the size of the workplace (natural logarithm of the number of employees), pressure to focus on short-term profit or budget goals (six point scale with 1 = low and 6 = high pressure), and strategic focus (1= controlling costs and 6 = developing new products / services).

Results

Sample Characteristics

Descriptive statistics for the two samples are provided in Table 1. In terms of the Canada study, about 13% of respondents were in manufacturing, 66% were in business services, and 21% were in the government sector. The mean for product/service demand (2.84) indicated a modest increase in demand, and there was support for the statement that the employer feels pressure to focus on short-term profit or budget goals. When examining employer size, about 38% reported that their organization had 100 or fewer employees. About 36% of respondent workplaces were unionized and participants reported modest investment in human resource management and workplace restructuring (means of 3.87 and 3.08 out of a maximum score of 6.0).

When considering the New Zealand sample, 27% of the workplaces operated in the manufacturing sector, 54% were in services, and 19% in government. The demand for the employer's product or service (mean of 2.48) was increasing and New Zealand participants also indicated a pressure to focus on short-term profit or budget goals. Approximately 56% of New Zealand respondents reported that their organization had 100 or fewer employees and about 55% of the workplaces were unionized. Again, there was somewhat moderate adoption of workplace restructuring and human resource management practices. Note that for New Zealand, the measure of HRM is based on the average percentage of adoption for 18 practices.

Table 1: Descriptive Statistics

Variable	Canada		New Zealand	
	Mean	S.D.	Mean	S.D.
Control Variables:				
Product/Service Demand	2.84	1.08	2.48	0.96
Manufacturing	0.13	0.33	0.27	0.45
Service	0.66	0.47	0.54	0.50
Number of Employees (nat'l log)	5.78	2.65	4.83	1.22
Short-term Focus	4.19	1.45	4.41	1.17
Strategy	3.41	1.36	3.84	1.20
Primary Independent Variables:				
Union Status	0.36	0.48	0.55	0.50
Human Resource Management	3.87	0.93	36.39	16.31
Workplace Restructuring	3.08	1.56	2.49	0.94

Grievance Rate Information

The breakdown of responses relating to the grievance rate for the two studies (Canada and New Zealand) is provided in Table 2. About 25% of respondents from the Canadian study and 57% of New Zealand participants indicated that the rate of grievances was very low (score of 1) and more than 56% of Canadian respondents and 87% of those from New Zealand reported a score of 2 or less.

Table 2: Rate of Grievances (%)

Response	Canada	New Zealand
1 (Very Low)	24.8	56.7
2	31.7	29.3
3	22.0	8.2
4	12.6	3.1
5	5.8	1.9
6 (Very High)	3.2	0.8

Regression Analyses

The results of the regression analyses are provided in Table 3. When considering the control variables, the coefficients for all of variables except for employer size were not significant, suggesting that grievance rates were not significantly related to product or service demand, industry sector, a focus on short-term profit or budget goals, or the strategy of the organization.

However, in both the Canadian and New Zealand studies, the employer size variable was positive and highly significant ($p < .01$), indicating an increase in the number of grievances as employer size became larger.

With reference to the primary independent variables, union status was positively associated with the grievance rate ($p < .05$) when considering the Canadian study (that is, unionized workplaces tended to have higher rates of grievances) but was not significant in the New Zealand sample. This finding is discussed in more detail in the conclusion.

Is human resource management related to the grievance rate? As noted previously, we used different scales to measure HRM in the Canadian and New Zealand studies. However, in both instances, the coefficient on the HRM variable was negative and highly significant ($p < .01$), suggesting that greater investment in human resource management (as measured by HRM systems or bundles of practices) is associated with a lower grievance rate.

A number of organizations are restructuring the workplace in an effort to be more competitive. In both the Canada and New Zealand samples, the workforce restructuring variable was positively and significantly ($p < .01$) related to the grievance rate. In other words, employers undergoing restructuring are more likely to report having a higher grievance rate.

**Table 3: OLS Regression Results
(Standardized Betas)**

Variable	Canada	New Zealand
Control Variables:		
Product/Service Demand	.002	-.014
Manufacturing	.016	.041
Service	-.037	-.008
Number of Employees (nat'l log)	.149 ***	.159***
Short-term Focus	.044	-.005
Strategy	.047	-.082
Primary Independent Variables:		
Union Status	.096 **	.020
Human Resource Management	-.234 ***	-.111 ***
Workplace Restructuring	.134 ***	.203 ***
R-Square	0.156	0.102
F Test	13.785 ***	12.598 ***
N	758	1,008

* p <.10; ** p <.05; *** p <.01

Additional Analyses

Previous research on grievance filing behaviour often included a measures of the relationship between employees (and/or the union) and the employer (frequently a single item scale with the anchors being cooperation and conflict). Bemmels and Foley (1996) argue that doing so is somewhat tautological and represents two measures of the same construct. Moreover, the causal linkage between such variables is difficult to interpret. Labig and Greer (1988) question whether a more cooperative relationship results in fewer grievances or do fewer grievances lead to a perception of a more cooperative relationship? Due to the issues raised above, we did not include a measure of the quality of the relationship in the findings presented above.

However, both the Canadian and New Zealand surveys contained a 6-item scale measuring labour-management climate. Participants indicated their level of agreement with six statements adapted from Dastmalchian, Blyton and Adamson (1991) with the anchors 1 = strongly disagree and 6 = strongly agree. Sample items included "employees view the conditions of employment as fair" and "the parties make sincere efforts to solve common problems". The Cronbach's coefficient alpha for the labour-management climate scale was 0.92 for the Canadian sample and 0.82 for the New Zealand sample. Note that the labour-management climate in the New Zealand study was only asked of participants in unionized workplaces.

For both samples, the regression model was run using the full set of control variables contained in the main analyses and the labour-management climate variable. The coefficient on the labour-

management climate variable was both negative and highly significant ($p < .01$) for both samples; a higher score on the labour-management climate variable was related to a lower grievance rate.

In light of the focus in the past two decades on downsizing, we also ran full models for both samples but replaced the restructuring scale with a dummy variable measuring whether the organization had permanently reduced its workforce over the past two years. For both the Canada and New Zealand studies, the coefficient on this variable was positive and significant at $p < .01$. Employers engaging in permanent workforce reduction tended to have higher rates of grievances.

Conclusion

The primary goal of our paper was to explore factors associated with grievance rates using survey data from respondents in Canada and New Zealand. The bulk of the work on grievance initiation has been at the individual level of analysis or conducted in the United States. Grievance rates were quite low when considering both samples (and New Zealand in particular).

Our regression results indicated that perceptions of the rate of grievances are positively related to employer size. Why might larger employers have a higher rate of grievances? Although additional research on this topic is needed, employer monitoring efforts may vary based on size. In addition, organizational cultures may differ as a factor of size.

In the Canadian sample, unionization was associated with a higher grievance rate. The reasons behind this finding deserve further research attention. For example, do union members perceive that they have more power? Are they more aware of their rights under the collective agreement? Unions would typically have greater resources for grievance administration and taking a case to arbitration if the matter is not settled during the grievance process.

Why might union status not be associated with the grievance rate when examining the New Zealand data? It should be noted that New Zealand labour relations has undergone a different history than that in Canada. In the early 1990s, the *Employment Contracts Act* was introduced which allowed employers to bargain individually with workers, even in unionized workplaces. Although the *Act* was repealed in 2000, it can be argued that it severely weakened the power of unions in a number of organizations. Walker and Hamilton (2011) raise a number of questions relating to the effectiveness of grievance procedures in New Zealand and the lack of power among some groups to employees.

Little attention has been directed toward studying the impact of human resource management practices (systems or bundles) on grievance rates. Our findings reveal that a lower grievance rate is strongly associated with an increased investment in HRM. The past two decades has witnessed a dramatic increase in research examining the effect of high performance work systems on employer performance (Huselid and Becker, 2011). While the high performance system stream of research has only indirectly addressed grievance filing issues, the effect of such practices seems to be very important. Although we only examined HRM systems / bundles in this paper, further attention to the importance of specific HRM practices is worthy of attention.

Downsizing and workforce restructuring, although popular in a number of organizations, are often associated with negative consequences. As Cameron (1994) noted almost two decades ago, reduction

of bargaining unit employees has dramatic negative impacts on the survivors (Cameron, 1994). Grievances may also occur as a result of layoff procedures and concern for job security.

Although our paper is one of a handful that use data from two large samples in different countries, one limitation is the reliance on perceptual measures of the grievance rate. Although other researchers (for instance, Bemmels and Foley, 1996) support the use of perceptual measures, detailed information on the actual number of grievances over a period of time would complement the current measures. However, many organizations do not maintain complete records on grievance filing behavior and thus obtaining such information is often very difficult.

While we provide some initial findings relating to grievance rates, several issues remain unresolved. For instance, what is the relationship between team-based practices and the grievance initiation process? What is the role of the human resource department in managing the grievance procedure? Is a lower grievance rate associated with better employer performance? These are important issues to be addressed in future research.

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Transformational Leadership Training and Employee Well-Being: Insights From Leaders Participating In Training¹

A recent focus of leadership research is on the positive impact of effective leaders on the well-being of their employees. Scholars have argued that leadership training and development interventions may have positive benefits for employee well-being. We conducted in-depth interviews with a small group of health care leaders completing transformational leadership training who were perceived by their employees as having made significant improvements in their leadership scores. Data from this exploratory research provide insights into the leadership development process and its possible impact on employee well-being.

The purpose of this exploratory study was to build on previous research to acquire an in-depth understanding of the experiences of leaders participating in transformational leadership training. Since the previous research we had conducted showed transformational leadership was a predictor of employees' well-being, we were interested in talking to these leaders to find out specifically what they had taken away from their leadership training and what they acted upon, so we could understand more about the impact of the training on their employees' well-being. We were also interested in hearing about what might have assisted or detracted from the leaders' efforts to apply their training, as well as in learning about any perceived benefits or downsides of the experience, either for them personally or for their larger work group. As with many qualitative studies, the aim was not to produce generalizable findings, but rather to understand the individual experiences of trainees and identify any common patterns or themes in those experiences (Silverman, 2005).

Literature

Transformational Leadership

Over the past 25 years, the subject of leadership has attracted considerable attention from the scholarly community. In a recent review of leadership research, Barling, Christie and Hopton (2010) concluded that transformational leadership (TL) is by far the most commonly used model in empirical studies, and it is the one used in our study.

Burns (1978, p. 20) saw the transforming leader as one who interacted with his or her employees in such a way so as to "raise each other to higher levels of motivation and morality," with the key being shared values and goals. Bass (1985) built on Burns' concept of the transforming leader and identified four sub factors, or dimensions, of what he referred to as the

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TL style, namely idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. The first of these factors, idealized influence, concerns the behaviour of leaders and the ways in which they role model appropriate behaviour for the rest of the organization. The second dimension, inspirational motivation, relates to the ways leaders challenge their employees and provide meaning to their work. Here the leader works to develop team spirit, and displays optimism and enthusiasm. The third dimension of TL is intellectual stimulation, and it speaks to the leader's ability to stimulate employees to innovate, and develop new and creative ways to look at challenges and problems. Here the leader provides an environment where ideas can be shared openly and freely without fear of ridicule or criticism, even if the suggestions differ from those proposed by the leader. Individualized consideration, the fourth factor, views the leader as a coach and mentor, working with employees on an individual basis. Such a leader recognizes the existence of employees' individual needs for both achievement and growth, and works with each employee one-on-one to help them attain their "successively higher levels of potential" (Bass & Avolio, 1994, p. 4).

Transformational leadership has also been associated with important organizational outcomes such as positive work attitudes (De Hoogh, et al., 2005), organizational commitment (Dvir, Kasser, & Shamir, 2004), empowerment (Kark, Shamir, & Chen, 2003) and organizational citizenship (Koh, Steers, & Terborg, 1995). Researchers have found significant relationships between transformational leadership and leader satisfaction (Shieh, 1997), and trust in the leader (Arnold, Barling, & Kelloway, 2001).

Transformational Leadership and Well-Being

Scholars studying subjective well-being define it broadly as experiencing "pleasant emotions, low levels of negative moods, and high life satisfaction" (Diener, Lucas, & Oishi, 2002, p. 63). It is also characterized as "an active state consisting of positive affect and high arousal" (Turner, Barling, & Zacharatos, 2002, p. 715). Research into employee well-being has been termed a neglected area that is essential to enhancing organizational effectiveness (Baptiste, 2008). Diener, Suh, Lucas and Smith (1999, p. 293) suggested that work may specifically be related to well-being because it provides a source of "positive social relationships", "a sense of identity and meaning" and an "optimal level of pleasurable stimulation." Organizational scholars focusing on employee well-being have identified a host of possible factors influencing job-related well-being, including leadership (Wright & Doherty, 1998, p. 481). Turner et al. (2002) proposed a positive impact of TL on the positive health of an organization stemming from the four dimensions of TL. They concluded that "precious little research has focused on the extent to which leadership might make a difference for individual well-being" (Turner, et al., 2002, p. 721). Other scholars have found some evidence of a relationship between improved leader effectiveness and employee perceptions of their well-being (e.g., Arnold, Barling, Turner, Kelloway and McKee (2007); Feldt, Kinnunen and Mauno, (2000) Epitropaki and Martin, (2005). Diener et al. (2002) called for scholars to undertake studies that explore the developmental processes involving well-being.

Method

Participants

We recruited our study participants from a health care organization where we had recently completed a transformational leadership training intervention. As part of the intervention, we had surveyed employees pre- and post-training, and so we were able to identify which leaders were perceived by their employees as making the most significant changes in terms of their leadership behaviours. Accordingly, we used purposive sampling (Kemper, Stringfield, & Teddlie, 2003) to identify interview candidates who were in the top 10 in terms of perceived improvement in their average leadership score. Given their above average improvement in leadership ratings, we regarded these “extreme or deviant cases” as potentially “information-rich cases,” that is, cases from which we could “learn a great deal about issues of central importance to the purpose of the research” (Patton, 2002 as cited in Glesne, 2006, p. 34). The 12 individuals were contacted anywhere from ten months to one year and half post-training, and invited to discuss their training experience. Since one leader had left the organization post-training, we removed this individual from the sample. Three other leaders did not return repeated phone calls or emails over several weeks. From their lack of response, we concluded the individuals did not wish to participate in the study. Of the remaining eight leaders, all agreed to take part, but only seven leaders did participate as work scheduling and summer vacations proved an insurmountable problem with the eighth candidate. Of the seven final participants, five were female and two were male. They ranged in age from 26 to 55 years, with the majority being in the 46-55 age bracket. All worked full-time and their tenure with the organization ranged from 5 to 20+ years, with four having 16-20 years of service. Their titles ranged from coordinator to manager, with the majority being supervisor. The majority of participants were from long-term care and corporate support services. In terms of their pre-test leadership ratings, these leaders covered a wide spectrum, ranging from 18th to 45th place from top to bottom, in a pool of 65 leaders.

Procedure

Interviews are described as “one of the most important sources of information” (Yin, 1984, p. 82) and “one of the most powerful” among the qualitative methods (McCracken, 1988, p.9). Glesne (2006, p. 81) describes the particular strength of interviews as being to afford researchers “the opportunity to learn about what you cannot see and to explore alternative explanations of what you do see.” They allow for in-depth inquiry into how various phenomena are defined and experienced by individuals (Silverman, 2005), as well as how they are situated in their broader social and cultural context (McCracken, 1988). For such an application, open-ended interviews are deemed appropriate (Silverman, 2005).

The seven interviews comprising the study were conducted by the first author using McCracken’s (1988) long interview method, and lasted between 30 minutes and one hour and 15 minutes. To facilitate maximum participation, the interviews were held at a time and location of the participant’s choosing. The exchanges were semi-structured in that a series of “grand tour” questions, i.e. opening, non-directive questions, were posed, but new lines of inquiry suggested by the participants were also pursued (McCracken, 1988, p. 35). The use of grand tour questions is said to be effective as they “ask the interviewee for experiential detail that he or she can easily and readily answer” (Glesne, 2006, p. 84).

Each interview was audio recorded with the participants' permission. After interviews, field notes were made as a reliability check, following the recommendations of Spradley (1979 as cited in Kirk & Miller, 1986) These notes were used to refine the interview guide and identify avenues for exploration in subsequent interviews. When many of the same themes and ideas were being repeated in the interviews, we determined that we had reached redundancy in the data collection and deemed it would be appropriate to stop interviewing and move to the analysis phase (Strauss & Corbin, 1998).

Transcripts of the interviews were produced so they could be coded using Strauss and Corbin's (1998) open coding method. An inductive approach was used such that all seven interview transcripts were read by the first author to identify emerging themes, ideas, acts or events. Sentences and short paragraphs were selected as the most appropriate unit of analysis. These units were then examined more closely by the first author and compared to identify similarities and differences between the ideas, incidents, acts or events (Strauss & Corbin, 1998). A coding sheet that grouped these themes, ideas, acts or events into related categories was created, with abbreviations for each coding item. This preliminary coding sheet was used by the first author to code three interviews. A small number of additional codes became apparent from this review, and these were added to the coding list.

To increase the validity of the analysis, we incorporated peer-review into our coding process (Glesne, 2006). The second author read and coded clean copies of the same previously mentioned three interview transcripts using the expanded coding sheet. We then compared results to assess inter-rater reliability (Weber, 1990). Agreement was reached on 78% of the coding. Discrepancies in coding were discussed and consensus was reached on the outstanding items. The coding sheet was revised to reflect changes and then the first author coded all seven interviews a final time. Code abbreviations were typed into the transcription, and then the units of analysis were grouped under the selected categories. Per Miles and Huberman (1994), a data matrix was then created incorporating representative excerpts from participant interviews under the designated categories and sub-themes.

Results

As noted earlier, the purpose of the interviews was to understand the individual experiences of leadership trainees and identify any common patterns or themes in those experiences. Analysis of the interview data suggested a number of themes. In recognition of the fact that our participants were the best judges of their experiences and can best articulate what it meant to them, we support the presentation of themes with extensive quotes from the participants.

TFL Training Application Often Deliberate, Strategic

From the conversations with participants, it was clear that leaders were often very deliberate in their application of their leadership training. In some cases this seemed to be because the leaders were trying to change their behaviours and this required a concentrated effort to make sure it happened. Here's how one leader, who arrived at work much earlier than her staff and who had a tendency to enclose herself in her office and work the whole day, described her attempt to change that pattern:

I made myself go out there every morning and spend some time talking to people [Kate]

Similarly, Bill focused on establishing personal rapport with employees before launching immediately into a work related request:

I think listening to them, and communicating with them a little more, talking about things that were also not involved with work. “How ya doing?” or, “What did you do last night?” That kind of thing, or what went on over the weekend. I find that they tend to open up a little more when you do that kind of thing than if you just approach them with, “Well, we got to deal with this and we have to come up with an idea.”

Another leader, Sonya, also had to break established patterns, but these appeared to be more cognitive ones. She described using self-talk, such as telling herself “You know, well, I'm gonna try and remain positive about that” or “I'm not gonna judge until I know.” This was in an effort to herself to remain more positive in her outlook about work and her work environment.

In another case, one of the participants wanted to increase her visibility and she was very up front with her employees about that and strategic in terms of how she handled visibility with her day and night time staff. The deliberateness of her actions is evident in her discussion of goal implementation:

Yeah, it was to increase visibility and I was going to do that by visiting the evening shifts at least once a week. Not every day because that would be impossible. [Patty]

Two other leaders appeared very strategic in their attempts to apply aspects of their training relative to specific individuals. Henry commented his focus was: “behavioural problems with individuals, and that's where I spent a lot of time.” Sonya described in detail her efforts to work with a “negative” employee and give her personalized attention:

I do try to talk a little with everybody, but my main focus is her, to set the tone for everybody else for the day. Because I find if I don't, she can be very, well not malicious, that's not the right word, but negative. To the rest of the staff as well, and it can be very trying for everybody. You know, “I don't want to be here if she's here.” So, for me, it's giving that little bit of extra attention. It's one of those things that she needs, that everybody needs, I guess. [Sonya]

Some of the participants also had direct supervisors who had been through the training. They commented that they were often aware that their leaders were actively implementing their training. June noted: “I think in the back of my head I thought, ‘Oh, you went to leadership training’” and Melissa commented: “I could see evidence of my supervisor – certainly with the walk-about. So he does make a deliberate attempt, by saying ‘Good morning.’” Two other leaders spoke in more detailed terms about the deliberate efforts made by their supervisors to change their own behaviour.

Peer/Leader Support and Organizational Changes Promoted Success

From discussions with trainees it was clear there were also factors that helped leaders succeed with their adoption of the transformational leadership style. Several noted the benefit of peers also having taken the training as it created a common reference point and a consistent approach with employees. Sonya phrased it this way: “So, he's using it, [she's] using it. We're all

trying to use the same concept, and we all try to talk about it sometimes” and, as a result “everybody's on the same sort of page now.” Patty explained it this way:

So I think that that helped that everybody had to do leadership training, or the transformational leadership training at the same time, it put everybody in the same mind set. .

Similarly, Sonya commented that when her group was having difficulty with issues it was helpful to be able to draw on their common training, saying “...especially when we have staff meetings, of course, we all get going and you try to bring it in focus: ‘Okay, did we go for nothing, or are we really going to practice some of this stuff?’”

Other trainees commented on the changes their own leaders had made and how that had then facilitated their own changes. For example, Bill noted “I think he's given us a lot more responsibility in the way that, you know, you solve the problem and come up with an idea and solve it. More than I think before.” Patty elaborated in more detail about her leader:

I'd say she's done probably the best out of the whole facility. She's done a very good job because we were pretty honest too when we, you know, did her survey. So, she's done well, so that's also helped us... I think because [Tina] changed so much... we had the ability to change because she let us be, she let us do our job.

Several other leaders commented on organizational changes that were made before and after the training implementation phase and on how these changes had improved their situations. In particular, two leaders saw their span of control decrease and they felt that this was important to their success. One noted, “I feel like I've made a difference with [department] staff, but again, I'm saying that's part of getting to deal with them more. You know, more individual time, and more time to spend with them.”

Personal and Organizational Factors Inhibited Sustained Efforts

While it was clear this group of leaders had some success implementing their goals, trainees also spoke about many factors that inhibited their ability to sustain their transformational leadership efforts. These could be categorized into personal and organizational inhibitors. For example, several participants commented that their own attitudes and personalities were sometimes problematic. For some, it was occasionally a matter of just remembering the new focus, for as Sonya noted: “And it's so easy to forget. You really have to remind yourself. Just back up, and try to do it the right way.” For Kate it was a matter of convincing herself that successful implementation of her goals, especially her goals related to increasing her personal interactions with staff, were important:

I won't say that I don't want to do that, it's not that I don't want to do that, but it felt like a waste of time at first. It felt like, “Oh, I have so much to do today and I don't have time to do it, so I have to get back.” Like, this is wasting my time.

Personal work style was also sometimes problematic for leaders, especially those trying to focus on intellectual stimulation where the leader is required to help employees through the problem solving process:

I work hard...like I'm a person that needs to be busy, so I work all the time. And I'm more of a ‘tend to do things myself’ – rather than take the time to explain or describe what I want to other people. [Kate]

In terms of organizational challenges, one of the most cited was work overload. Six leaders touched on workload as making it difficult to focus on their leadership goals. Staffing shortages was another big drawback. As June commented, “If one person is gone, all you can do is give out pills and do the necessary things, and hope that nothing else happens. You don't see the staff the same.” Or, as Patty relayed it, “Again, it was a little difficult because you want to be a good leader, and it's hard to be a good leader when you only have 50% of your complement; you're struggling.”

Two participants touched on the problem of competing priorities relative to sustaining their leadership effort. Melissa noted that, while it was a prime focus for a time within the organization, she felt it was pushed aside in favour of other initiatives: “I just think that we, that you, get going on something and then three other things happen and the ball gets going. And, it's not the hot issue of the day anymore.” June leader raised the challenge of having too many conflicting priorities and not having time for them all, saying:

And, again, if I had more time I could do more, but I feel sometimes that my hands are tied, and I really can't do, I can't be a leader.

Patty, the one leader who had set a personal goal related to making time for a real lunch break, found that she could not sustain this seemingly modest goal because of her heavy workload and lack of control over her job, and her disappointment was obvious:

I failed horribly at that, even though I meant to. And I felt very strongly about that, when I did look at my goal planning and that sort of thing, just so I wouldn't be so frantic and that sort of thing when I was talking to people.

Benefits of Training Application both Direct and Indirect

In discussing the benefits of the transformational leadership training program, it was clear that all participants felt there were many and that they were substantive. For example, several leaders commented that communication had improved with their staff and they felt a greater sense of connectedness. For example, Bill said, “I think there is better communication between the guys and me. I think listening and the communication is better...” Kate expanded on this theme, saying,

I don't know what they [employees] would say about that, but yeah, I did feel like I became more connected. Just by making the effort of going saying, “How are you doing today?”

Melissa talked about the training providing an opportunity to connect with leaders from other parts of the organization and this contributing to “better relationships” in the organization overall. June elaborated saying:

“It sort of helps you understand their point of view. We're dealing with dietary and housekeeping, and everybody, so sometimes it does give you a bit more insight into what their jobs are like and what they're going through. ”

This improved connection and communication also seemed to translate into better work situations for some participants. As Patty noted: “What seemed to have an impact was probably people being more open, and listening more, and being a little bit more realistic about things that

can be achieved.” In fact, this leader found that her employees’ expectations for contact with her weren’t nearly as high as she’d expected, nor as high as her leader’s expectations.

Participants touched on several benefits that were specific to their employees. Leaders who worked to increase their visibility and one-on-one time with staff sensed that their efforts were appreciated and this fueled their desire to keep working at it. June noted, “So I’d say, you know, they were happy and that’s why I’d really like to do it more often. The staff did appreciate it.” Patty echoed that comment saying, “You know they were happy that I made the effort to go see them specifically one on one and ask what they needed from me.” This personalized attention and the active efforts to involve employees more in problem solving also seemed to heighten employees’ desire to get involved. Sonya explained it this way: “You could find the interest from people as soon as you would say, “Well, what do you think, guys? What do you think we should do about this?” Leaders who had made such efforts on the intellectual stimulation front also spoke of their employees as becoming “a bit more empowered,” as being “more motivated,” and as being “happy” at the chance to play a more active role. Sonya seemed to feel there was a positive impact on the quality of the work done by people: “You know, and when you’re brainstorming things, there’s always somebody that’s got new ideas. And you just learn so much from it. All the little things to make yourself better, and your work place better.” One leader commented that involving his staff in problem solving and decision making about work process changes made subsequent changes easier for both him and his staff. As Bill explained,

... It’s funny because it’s a circle sometimes. Kinda, when they first started with someone, like if you wanted to change something they were very much against change, but then when they were more involved, you know, they did it. And the next time you went to change something, they were like, “Well, we could do it just like we did before, this could work in this spot, or this area.”

Other leaders described how their efforts to work with “difficult” employees had a ripple effect, benefiting a larger group of employees. The extra attention devoted to these “negative” employees seemed to improve their mood. In discussing the impact of strategically targeting her “negative” employee, Sonya noted:

But I do find a difference in her, I definitely do. And I think the change of my approach towards her and how I deal with her has made a difference. Or at least I think it has. It’s made a difference for me. In my feeling toward that I’m accomplishing something. That, I must have done something.

Henry, who had also worked at trying to improve the outlook of one of his more negative staff, found his efforts engendered improvements both in the employee and his larger work group:

I have one person who’s really changed a lot. Yup. I was surprised when there was, when other people actually, other staff members, made comments about how this person changed... I would probably say about six staff came to me and said how this person changed. And I think it’s good for that person.

Limited Unaided Training Recall but Specific Recall Improved with Prompting

All of the interview participants remembered participating in the training, but they had difficulty recalling many specifics without prompting. Not one of them was able to define transformational leadership or recall one of its four dimensions. When asked what they did recall, two spoke about the logistical aspects of the training, such as the location, room set-up and details

about the presenter. Two recalled that there was discussion of people having different leadership styles.

With some prompting, such as a brief description of the transformational leadership dimensions, participants seemed better able to discuss the dimensions and more importantly to describe relevant behaviours. For example, when asked how a leader might demonstrate intellectual stimulation, almost all interviewees were able to correctly respond that such a leader would adopt a questioning approach with employees. For example, several participants volunteered they could ask: “What do you think you should do?” and Kate expanded saying: “What do you think about that? How would you handle it? What are your thoughts?”

Similarly, knowledge of the behaviours of a leader demonstrating individualized consideration was also generally very good. Sonya explained: “Well, I guess everybody's different. Everybody has a different role to play, and a different personality, different needs, different wants. And you have to deal with them one on one.” Here, one participant recalled the specific details of the training session where we had discussed one thing a highly valued leader had done relative to individualized consideration:

I think the one thing that really stayed with me was the story of the man who came in every morning and spent time talking to the staff and how, when the staff reflected on him, that they felt he was a really good manager and he didn't do anything except have a talk with them in the morning and be personable with them. [Kate]

The situation was somewhat different when it came to discussions of idealized influence and inspirational motivation. Interviewees did not seem able to describe behaviours representative of these dimensions quite as easily and in many cases not at all. For example, in trying to describe idealized influence, which concerns the behaviour of leaders and the ways in which they role model appropriate behaviour for the rest of the organization, June said: “Oh I remember that term...ohhh...I don't know...idealized influence...I suppose that is all stuff that we learned in the past too. It's the ideal, the ideal, not the reality, it's a goal.” Later in trying to sum up inspirational motivation, which speaks to the ways in which a leader helps employees find meaning in their work by displaying optimism and enthusiasm and involving employees in envisioning positive future states, June clearly struggled again in coming up with an explanation: “Oh, man, inspirational motivation. I am not on today; it's not a good day.”

Interestingly, the two trainees who had the most comprehensive recall of all the transformational leadership dimensions were front line employee supervisors who had risen through the ranks of the organization and who had had no previous leadership training.

Training Content Viewed as Already Familiar but Not Acted Upon

Of the seven leaders, only three referenced having had previous formal leadership training. In discussing the training session however, most (5 of 7) expressed that the training session content was already familiar. This is evidenced by such comments as this one from Patty: “there were a lot of things that I already knew” and from Kate: “It's not anything new.” Or, as June explained:

I had taken other leadership courses, so I felt a lot of this was not new. And it had been a couple of years before, not a long period of time, I'd say two years before that. And, so I

really felt it was not new to me. Not that you can't learn new things, but it wasn't new information to me.

Henry noted when reflecting on his learning from the training: "I think I have a little bit more knowledge and a little different approach to people. I don't think it's respect because I've always had a lot of respect for everybody."

Comments from several participants highlighted a disconnect between knowing what a good leader should do and actually acting on that knowledge. Melissa commented: "I guess it reinforced things that I already knew, um, but don't practice" and Kate shared this opinion, saying "I think a lot of what he [the trainer] said are things that you just don't think about, but they're not anything new. It's not anything new, it's things that you already know, it's just that you don't apply it." June touched on the problem of leading by rote: "Even though a lot of it was not new, some of it was presented in a different way. It just makes you stop and think about all the things that you do automatically sometimes."

Recall of Leadership Goals Surprisingly Good

When the focus of the conversations turned to the personal transformational leadership goals the trainees had set for themselves, the situation was markedly different. Six of the seven trainees had very good recall of anywhere from one to three goals.

The best recall was of goals related to individualized consideration, followed by intellectual stimulation. From the discussion of such goals, it was evident that, as instructed, participants had set small, doable and very specific tasks for themselves. Many were focused on increasing their visibility and personal interaction with staff in small ways as demonstrated by Kate's comment: "I remember one of my goals was that I was going to make sure I went out every morning and said hello to people before I started work." Melissa shared that one of her goals was: "I'm going to do a walk-about every day, or three times a week." Another leader elaborated in more detail:

As I said, I'm trying to be spending more visual time with the staff. Five minutes. Sometimes five minutes is plenty. They don't want you in their face all day, either. [Sonya]

For three of the leaders, their recall was limited exclusively to individualized consideration goals. June explained that it was the one goal that really mattered to her:

... I don't remember if I did five [goals]; that's the only one that sticks in my mind. I guess to me that was the really important one, and the one that I really, really wanted to do. I can't remember the others. I don't think I did them.

Intellectual stimulation was the other major area where this group of trainees reported they had made some efforts. Five of seven trainees discussed a goal that had an intellectual stimulation focus so that, rather than simply volunteering the answer to an employee's question, they used other tactics to try and actively engage their employees in finding the solution. For example, one participant noted:

Oh, one thing I did do, I try consciously to do, is that if someone comes to me and I try to get them – normally I would just give them the answer – but I will try and walk them through it. [Melissa]

Idealized Influence was an area where a few of the participants reporting making efforts. Two trainees said they set goals related to role modeling. For example, one leader in a very demanding role talked about how she seldom took time for a real lunch break and tended to eat at her desk instead. Recognizing that this was not healthy for her and was setting a bad example for her staff, Patty set a goal to not eat her lunch at her desk so as to take a real break from work and have some down time: “And the other thing I decided to do was to take time for me once a day.” The second leader also set a goal that was focused on changing personal behaviour. In this case her supervisor had pointed out a need to model appropriate leadership behaviour. This goal was related to addressing conflict early and not practicing avoidance:

One of my big things here, and this is still something that I have trouble with, I don't like conflict and crisis. If I can avoid, I will. There's things you can't avoid... Right, but I know I have to do it. And it's a part of my job, and it needs to be done to fix what's going on. [Sonya]

The area of inspirational motivation was the one that drew the least amount of attention from these trainees. Only Henry discussed a goal related to this area:

There's a lot of negativity in the [department name] at times in certain individuals, and what I try is try to work with them and let them know that not everything is negative, that things are positive. And, when they do something that's positive, let them know it's positive. And I point it out to them – “See what I mean, not everything's all negative. There are positive things that can come.”

Discussion

As researchers involved with the leadership training intervention and subsequent interviews, we were initially surprised at the limited recall of the leadership training participants. However, upon reflection, we came to feel that it was rather naïve to have expectations of any significant recollections after a year or more had passed. Training participants had had to return to their already busy work schedules and much had transpired in their organizations. That said, it was clear from our exchanges that each of our participants had put some effort into implementing specific leadership development goals, and that they had experienced varying degrees of success and failure because of both personal and organizational factors.

As noted, five out of seven leaders said they had not really learned anything new during the training or that the content was very familiar. Perhaps it was this sense that they had ‘heard it all before’ or that they already had the fundamental values associated with good leadership that contributed to the leaders’ inability to recall much of the specifics of the training. The time interval and the lack of any formalized training reinforcement program may also have played a role. Miller, Umble, Frederick, and Dinkin (2007) found such support programs, including coaching, mentoring and team-based work assignments post-training, were important for solidifying learning and creating important social networks to support developing leaders. While some of these networks did seem to develop informally, there was no concerted effort to make this happen.

Given the very limited recall of the overall training session and its content, we were somewhat surprised by the ease with which many trainees could recall one or more of their goals. Upon reflection, however, we realized this was the one component of the training that had required very personal engagement. Since the majority of these trainees said they had also acted actively worked on applying their goals, this training program content had been reinforced with practice and thus more likely to be easily accessible. This finding seems to provide support for the need for ongoing reinforcement of the content to help trainees apply their goals in their daily activities and to make those lasting linkages with the program content (Block & Manning, 2007; Miller, et al., 2007).

The fact that the majority of goals recalled by trainees were related to individualized consideration and intellectual stimulation is also interesting. The course facilitator did stress these two dimensions in the training, and it would appear trainees replicated this emphasis in their goals. Several of the individualized consideration goals were related to increasing leaders' casual interactions with staff and getting to know them as people with interests outside of work. Participants talked about being confined to their desk all day trying to keep pace with the paperwork, and losing touch with their employees and the work they were doing, and wanting to rectify this. Others noted that this type of employee interaction was not something they had previously viewed as a priority, but agreed it had been beneficial in terms of breaking down barriers and improving personal relationships. In the literature, there is discussion that such behaviours can serve to enhance the leader's approachability and that this in turn can create perceptions in employees' minds that the leader is more supportive (Offermann & Hellmann, 1996). From their qualitative studies with managers, Alvesson and Sveningsson (2003) have learned that some of the more apparently "trivial acts" performed by managers, such as chatting informally with employees and listening attentively to them, are actually perceived by employees as being significant. Employees of such managers are said to feel more visible, less anonymous, more respected and part of the team (Alvesson & Sveningsson, 2003). It is not much of a stretch to suppose that employees who feel more visible, more respected and part of the group would experience improvements in their sense of emotional well-being.

It is interesting that few of the participants spoke about goals related to idealized influence and inspirational motivation. While it is true the other areas were emphasized more by the facilitator, leaders were encouraged to set three to five goals in total and to try to set at least one goal in all four areas. It is not clear whether leaders did not set goals in these areas, or simply could not recall them. In some respects, the idealized influence goals seem to be among the more personal leader goals in the sense that, in executing them in the workplace, they require the leader to reveal more of themselves to their employees, such as personal values and beliefs. As to inspirational motivation, perhaps the leaders did not feel they could credibly set or implement goals related to this dimension. From the interviews, it was clear that several of the participants were working under very difficult circumstances, such as working shorthanded on a regular basis and being responsible for too many staff in too many locations. Perhaps these leaders were themselves having difficulty making sense of such work situations and remaining positive in the face of such challenges.

We believe the study data support the statement that all participants found acting on their leadership goals difficult. As was actually mentioned explicitly by two participants, they already knew what "good leadership" was all about, but six of seven participants mentioned their job or

their own personalities sometimes impeded their success. Gilbreath and Benson (2004), and Kelloway and Day (2005) highlight many of the job characteristics that can negatively impact the health of a workplace, and participants identified several of the same issues in our interviews. For example, they cited workload and work pace, work scheduling, and job control as issues. Others mentioned other initiatives that displaced the focus on transformational leadership and made sustaining a focus on improving their leadership difficult. Block and Manning (2007) touch on this same issue and highlight the importance of having senior leaders adopt a long-term view on leadership development.

In talking about what they perceived to be positive outcomes of the study, several leaders referenced improved communication and collaboration. Others mentioned that simply getting to meet and interact with leaders from other parts of the organization helped break down barriers, and a few participants mentioned having a common leadership approach as being helpful. These points are all in keeping with the findings of other health care leadership studies (see e.g. Block & Manning, 2007; Miller et al., 2007). Miller et al. found specific evidence that support programs, consisting of coaching and mentoring, and team-based work assignments post-training were particularly helpful in solidifying leader learning and in developing important social support networks. No ongoing support or post-training assignments were included as part of this program, but most participants did acknowledge some ongoing support would be beneficial.

One additional and very important benefit of the training was the positive effects that seemed to accrue to entire work groups as a result of leaders focusing on difficult or negative employees. As mentioned in the results, at least two leaders strategically and deliberately made such efforts, and improvements were noticed by other employees in the work unit. One leader even noted that the improved relations with her “problem employee” had produced positive benefits as well for herself. She felt better about the way she was dealing with this individual, and the improvement influenced her future interactions with the employee. This latter finding is consistent with previous research suggesting that subordinate well-being and leader behaviour are linked in a feedback loop (van Dierendonck, Haynes, Borrill, & Stride, 2004). In this case, the trainee’s actions improved the situation, and there were spillover benefits to other employees. van Dierendonck et al. (2004) report that in some situations the reverse is true. They describe a *loss spiral*, a term coined by (Hobfoll, 1988), whereby relations between a leader and an employee continue to deteriorate because increases in employee’s negative feelings subsequently feed decreases in leader’s supportive behaviours; this interaction further feeds the employee’s negativity and so on. The researchers stress that leaders need to be made aware of how their behaviour potentially affects their relations with employees, and they need to be trained in how to break such downward spirals. This study suggests that transformational leadership behaviours, particularly individualized consideration, may be one viable option for leaders dealing with negative employees.

Limitations and Conclusions

This study was based on interviews with seven participants from a pool of 65 trainees. While our initial goal was to interview the 12 leaders whose leadership scores put them in the top 10 for average score increase, this proved to be more difficult than we expected. Had the timing of the interviews been closer to the end of the training intervention, we might have received greater participation. However, we also feel that the time delay helped inform the results by serving as a test of just what leaders were able to recall from the training after an extended period.

The fact that so many of the interviews surfaced the same issues and themes increases the validity of the findings, as does the high level of inter-rater reliability achieved during the coding process.

We recognize that, like all methods, interviews have some inherent limitations. Interview participants are human and as such are prone to incomplete recall, and problems of articulation (Yin, 1994). Offsetting this is the fact that they are the “experts” on their experience. They know what they learned and what they did as a result. The fact that the lead author conducted all the interviews also ensured some consistency in the approach and the questioning. As well, having participated in all aspects of the training and having ongoing contact with organizational members, the lead author was able to establish her trustworthiness as a researcher, which also helps to increase participants’ willingness to “speak fully and frankly” (Glesne, 2006, p. 102). This prolonged engagement with the organization and role as a participant observer in the actual training also afforded additional knowledge that we were able to draw on during the analysis and write-up stage. At times, we sought to validate participant comments with our organizational sources, similar to the use of “local facilitators” in ethnographic research (Glesne, 2006, p. 74). Through careful questioning, so as not to reveal the identity of any of our participants, we were able to secure details about groups affected by organizational realignments, other training initiatives and the like. We were able to confirm that such changes were not widespread and/or actually occurred after the post-test data collection, and so they did not likely affect the integrity of the research program in significant ways. These are important verification methods to address validity issues (Glesne, 2006).

We feel it important to highlight that we recognize we are not hearing from one very important audience, namely the employees themselves. Future research could juxtapose leader interview comments with those of employees, potentially revealing rich insights into the impact of transformational leadership employee well-being.

In summary, the findings from this study suggest that the leaders we interviewed did make concerted efforts to implement at least one or two of their leadership development goals post-training. These leaders placed the greatest emphasis on goals related to individualized consideration, followed by efforts to improve their use of intellectual stimulation, but placed little to no emphasis on idealized influence or inspirational motivation goals. All of the leaders found implementing their goals to be challenging, to a large extent because of already heavy workloads and other organizational priorities, but also in a few cases because of their own personalities and views. The fact that leaders received the same training organization wide was seen as helpful because it ensured more of a consistent approach and helped to improve communications within and between groups, but post-training support was seen as lacking. In most cases, leaders were able to identify tangible benefits arising from their efforts to act on leadership goals, and these benefits accrued to their employees as well as to the leaders themselves.

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ASB 2012
Human & Industrial Relations Abstract

Women's Representation in the Hotel Industry

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As part of a larger study, this paper explores female representation in large international hotel companies and hotel associations. The findings indicate that Canadian hotel associations have less female representation than international associations and international hotel groups. The hotel industry may be a gendered one with certain masculine practices impeding women from reaching the upper echelons. Suggestions to increase female representation in the hotel industry include sponsorship, developing career maps, and redesigning job requirements.

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The Influencing Factors of Using a Mobile Phone in Cameroon¹

Individual adoption of technology has been studied extensively in the workplace, but far less attention has been paid to adoption of technology in the household (Brown & Venkatesh, 2005). Obviously, the mobile phone is now integrated into our daily life. Indeed, according to the latest research from Strategy Analytics, global mobile phone shipments grew about 1% annually to reach 362 million units in the second quarter of 2012 (Business Wire, 2012), that is, more than 1.5 billion units will be sold this year. In addition, the International Telecommunication Union (ITU) inventoried 4.6 billion subscriptions in 2010, from which 57% come from the developing countries. The purpose of this study is to investigate the determining factors that make people around the world use the mobile phone. On the basis of the moderator-type research model developed by Brown and Venkatesh (2005) to verify the determining factors in intention to adopt a computer in the household by American people, this study examines the determining factors in the use of mobile phone in household by Cameroonian people. Data were randomly gathered from 505 Cameroonian people (from Yaounde and Douala; the two more important cities in Cameroon) who own a mobile phone. Data analysis was performed using the structural equation modeling software Partial Least Squares (PLS). The results revealed that half of the variables examined in the study were found to be determining factors in the use of mobile phone by Cameroonian people.

Introduction

For many years, mobile phone is used for different professional purposes, particularly by senior managers in the workplace. And this technology is more and more used in the workplace since mobile applications have been integrated to actual enterprise business strategies. Individual adoption of technology has been studied extensively in the workplace (Brown & Venkatesh,

¹The authors would sincerely like to thank Professor Wynne W. Chin (University of Houston at Texas) who kindly offered to us a license of the last version of his structural equation modeling software PLS to perform the quantitative data analysis of this study. We are also grateful to the *Faculté des Études Supérieures et de la Recherche* (FESR) at the University of Moncton for its financial contribution to this study. Finally, the authors express many thanks to Catherine (Kathy) Gonye from Yaounde for kindly helping us to collect data in Cameroon.

2005). But far less attention has been paid to adoption of technology in the household (Brown & Venkatesh, 2005). Obviously, mobile phone is now integrated into our daily life. Indeed, according to the latest research from Strategy Analytics, global mobile phone shipments grew from about 1% annually to reach 362 million units in the second quarter of 2012 (Business Wire, 2012), that is, more than 1.5 billion units will be sold this year. In addition, the International Telecommunication Union (ITU) inventoried 4.6 billion subscriptions in 2010, from which 57% come from the developing countries. The purpose of this study is then to pursue the investigation on the determining factors that make such people around the world are so using the mobile phone.

Few studies have been conducted until now which investigate the intention to adopt a mobile phone by people in household (in the case of those who do not yet own a mobile phone) or the use of mobile phone in the everyday life of people in household (in the case of those who own a mobile phone). Yet we can easily see that mobile phone is actually completely transforming the ways of communication of people around the world. It is therefore crucial to more deeply examine the determining factors in the use of mobile phone by people in household. This is the aim of the present study. The related literature on the actual research area of mobile phone is summarized in Table 1.

Table 1. Related Literature Survey
(adapted from Isiklar and Büyükožhan, 2007, p. 267; and updated)

<i>Research Areas</i>	<i>References</i>
Mobile phone diffusion and its impacts on people's daily life.	LaRose (1989) Kwon & Chidambaram (2000) Botelho & Costa Pinto (2004) Funk (2005) Andonova (2006) Centrone et al. (2007) Ehlen & Ehlen (2007) Fillion & Berthelot (2007) Fillion & Le Dinh (2008) Kurniawan (2008) Abu & Tsuji (2010) Sripalawat et al. (2011) Abdul-Karim et al. (2010) Fillion & Booto Ekionea (2010) Glajchen (2011)
Mobile phone ownership and usage.	LaRose (1989) Kwon & Chidambaram (2000) Palen et al. (2000) Aoki & Downes (2003) Selwyn (2003) Davie et al. (2004) Mazzoni et al. (2007) Peters et al. (2007) Tucker et al. (2007) Sohn & Kim (2008) Wessels & Drennan (2010) Chong et al. (2010) Fillion & Booto Ekionea (2010) Gebauer et al. (2010)

Mobile phone ownership and usage from a behavioral and psychological perspective.	Karjaluoto et al. (2003) Wilska (2003) Davie et al. (2004) Liljander et al. (2007) White et al. (2007) Butt & Phillips (2008) Abu & Tsuji (2010) Kimiloglu et al. (2010) Lane & Manner (2011)
Effects on human health and daily activities.	Repacholi (2001) Salvucci & Macuga (2002) Weinberger & Richter (2002) Sullman & Baas (2004) Treffner & Barrett (2004) Westerman & Hocking (2004) Balik et al. (2005) Balikci et al. (2005) Eby et al. (2006) Rosenbloom (2006) Törnros & Bolling (2006) Cocosila & Archer (2010)
Evaluation and design of mobile phone features for user interface and user satisfaction.	Chuang et al. (2001) Chen et al. (2003) Han & Wong (2003) Chae & Kim (2004) Han et al. (2004) Lee et al. (2006) Kimiloglu et al. (2010) Haverila (2011)
Analytical evaluations of mobile phone-related observations.	Tam & Tummala (2001) Campbell & Russo (2003) Han & Wong (2003) Wang & Sung (2003) Lai et al. (2006) Haque et al. (2010) Liu (2010)
Comparative analysis on the use of mobile phone according to the cultures.	Zhang & Maruping (2008) Lee & Lee (2010)
New mobile phone generation on the form of mobile computer and virtual life.	Brown (2008) Hurlburt et al. (2011) Murugesan (2011)

In addition to the summary of literature on the actual research area of mobile phone presented in Table 1, other researchers have identified some factors that may increase the use of mobile phone by people in household. For example, in a large study conducted in 43 countries of the world, Kauffman and Techatassanasoontorn (2005) noted a faster increase in the use of mobile phone in countries having a more developed telecommunications infrastructure, being more competitive on the wireless market, and having lower wireless network access costs and less standards regarding the wireless technology. Another study involving 208 users by Wei (2007) showed that different motivations predict diverse uses of mobile phone. According to the Wei's findings, mobile phone establishes a bridge between interpersonal communication and mass communication. And a large

study conducted by Abu and Tsuji (2010) in 51 countries classified by the *Banque Mondiale* revealed that, in general, income is a very important factor to adopt a mobile phone in the countries having a fix telephone infrastructure.

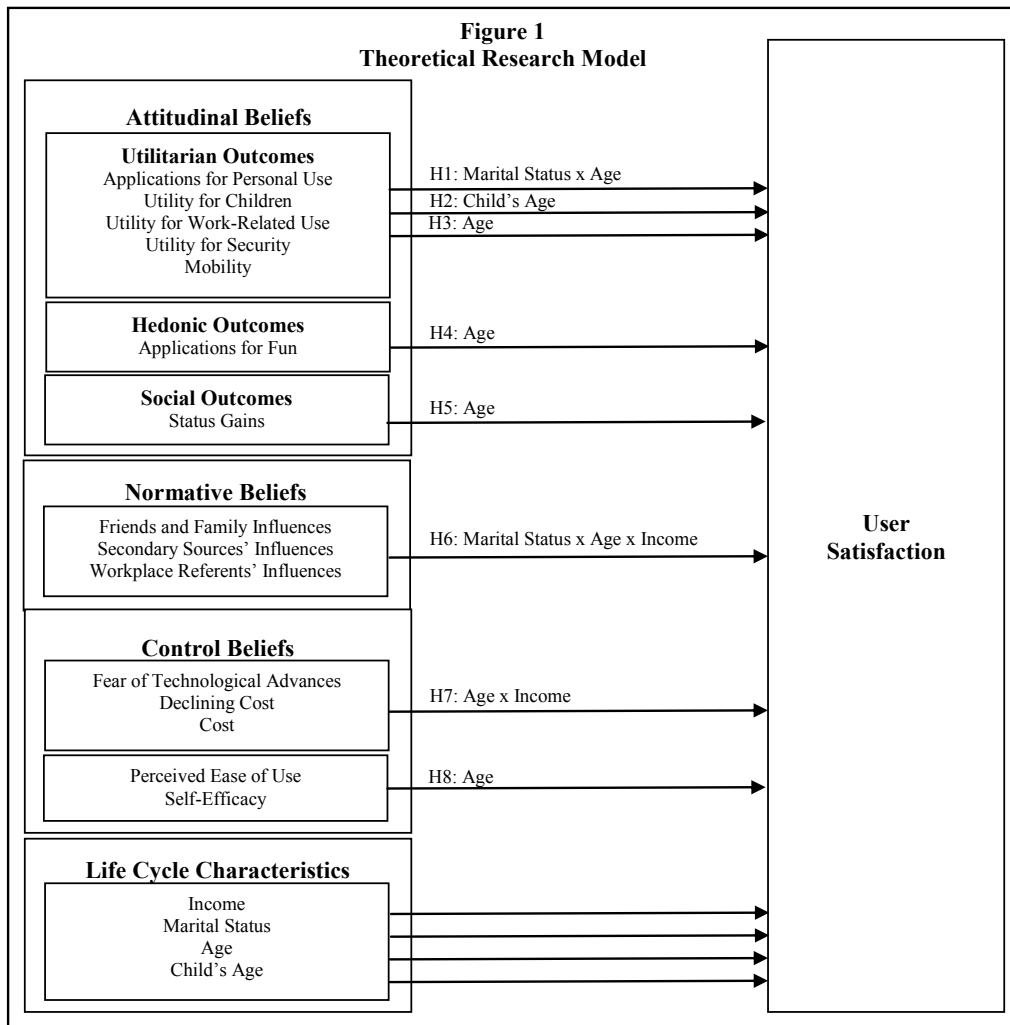
As we can see in the summary of literature related to mobile phone presented above, few studies until now examined the determining factors in the use of mobile phone by people in household. Thus, the present study brings an important contribution to fill this gap as it allows a better understanding of the impacts of mobile phone usage into people's daily life. It focuses on the following research question: What are the determining factors in the use of mobile phone by people in household?

The paper builds on a framework suggested by Fillion (2004) in the conduct of hypothetico-deductive scientific research in organizational sciences, and it is structured as follows: first, the theoretical approach which guides the study is developed; second, the methodology followed to conduct the study is described; finally, the results of the study are reported and discussed.

Theoretical Approach

This study is based on the theoretical foundations developed by Venkatesh and Brown (2001) to investigate the factors driving personal computer adoption in American homes as well as those developed by Brown and Venkatesh (2005) to verify the determining factors in intention to adopt a personal computer in household by American people. In fact, Brown and Venkatesh (2005) performed the first quantitative test of the recently developed model of adoption of technology in households (MATH) and they proposed and tested a theoretical extension of MATH integrating some demographic characteristics varying across different life cycle stages as moderating variables. With the exception of behavioral intention (we included user satisfaction instead given people investigated in this study own a mobile phone), all the variables proposed and tested by Brown and Venkatesh (2005) are used in this study. And we added two new variables in order to verify whether people are using mobile phone for security and mobility. The resulting theoretical research model is depicted in Figure 1.

Figure 1 shows that Brown and Venkatesh (2005) integrated MATH and Household Life Cycle in the following way. MATH presents five attitudinal beliefs grouped into three sets of outcomes: *utilitarian*, *hedonic*, and *social*. Utilitarian beliefs are most consistent with those found in the workplace and can be divided into beliefs related to *personal use*, *children*, and *work* (we added beliefs related to *security* and *mobility*). The extension of MATH suggested and tested by Brown and Venkatesh (2005) presents three normative beliefs: *influence of friends and family*, *secondary sources*, and *workplace referents*. As for control beliefs, they are represented in MATH by five factors: *fear of technological advances*, *declining cost*, *cost*, *perceived ease of use*, and *self-efficacy*. And, according to Brown and Venkatesh (2005), integrating MATH with a life cycle view, including *income*, *age*, *child's age*, and *marital status*, allows to provide a richer explanation of household personal computer adoption (household mobile phone usage in this study) than those provided by MATH alone. Finally, as shown in Figure 1, the dependant variable of the theoretical research model developed is related to *user satisfaction* (satisfaction in the use of mobile phone by people in household). On the basis of this model, eight research hypotheses (H1-H8) are formulated.



H1: Marital status and age will moderate the relationship between applications for personal use and satisfaction of using a mobile phone at home.

H2: Child's age will moderate the relationship between utility for children and satisfaction of using a mobile phone at home.

H3: Age will moderate the relationship between utility for work-related use and satisfaction of using a mobile phone at home.

H4: Age will moderate the relationship between applications for fun and satisfaction of using a mobile phone at home.

H5: Age will moderate the relationship between status gains and satisfaction of using a mobile phone at home.

H6: Age, marital status, and income will moderate the relationship between the normative beliefs ((a) friends and family influences; (b) secondary sources' influences; and (c) workplace referents' influences) and satisfaction of using a mobile phone at home.

H7: Age and income will moderate the relationship between the external control beliefs ((a) fear of technological advances; (b) declining cost; and (c) cost) and satisfaction of using a mobile phone at home.

H8: Age will moderate the relationship between the internal control beliefs ((a) perceived ease of use; and (b) self-efficacy) and satisfaction of using a mobile phone at home.

In the next section of the paper, the methodology followed to conduct the study is described.

Methodology

The study was designed to gather information concerning mobile phone adoption decisions in Cameroonian households. Indeed, the focus of the study is on individuals who own a mobile phone. We conducted in-person survey research with individuals from Yaounde and Douala, the two more important cities in Cameroon. In this section, we describe the instrument development and validation, the sample and data collection, and the data analysis process.

Instrument Development and Validation

To conduct the study, we used the survey instrument developed and validated by Brown and Venkatesh (2005) to which we added three new scales, the first two measuring other dimensions in satisfaction in the use of mobile phone by people in household, that is, utility for security and mobility, and the last one measuring user satisfaction as such. The survey instrument was then translated in French (a large part of the population in Cameroon is speaking French) and both the French and English versions were evaluated by peers. This review assessed face and content validity (see Straub, 1989). As a result, changes were made to reword items and, in some cases, to drop items that were possibly ambiguous, consistent with Moore and Benbasat's (1991) as well as DeVellis's (2003) recommendations for scale development. Subsequent to this, we distributed the survey instrument to a group of 25 MBA students for evaluation. Once again, minor wording changes were made. Finally, we performed some adjustments to the format and appearance of the instrument, as suggested by both peers and MBA students. As the instrument was already validated by Brown and Venkatesh (2005) and showed to be of a great reliability, that we used the scale developed by Hobbs and Osburn (1989) and validated in their study as well as in several other studies to measure user satisfaction, and that we added only few items to measure the new variables utility for security and mobility, then we have not performed a pilot-test with a small sample. The evaluations by both peers and MBA students were giving us some confidence that we could proceed with a large-scale data collection.

Sample and Data Collection

First, in this study, we chose to survey people in household over 18 years taken from the two more important cities in Cameroon Africa (Yaounde & Douala) who own a mobile phone. To do this, a graduate student studying at the Faculty of administration of the University of Moncton, one of our colleagues at the University of Yaounde I, and a friend of our colleague in Yaounde were collecting data in-person. One at a time over a 3 to 4-hour period, the three persons

responsible to collect data were soliciting people in-person to answer our survey. And in order to get a diversified sample (e.g., students, retired people, people not working, people working at home, and people working in enterprises), data were collected from 9 a.m. to 9 p.m. Monday through Friday over a 6-week period. People answering our survey were randomly selected in the streets, in the stores, and in the houses of the two Cameroonian cities retained for the study by the three persons responsible to collect data. The sample in the present study is therefore a randomized sample, which is largely valued in the scientific world given the high level of generalization of the results got from such a sample. Once an individual had the necessary characteristics to answer the survey and was accepting to answer it, a responsible was there to guide him/her to rate each item of the survey on a seven points Likert-type scale (1: strongly disagree ... 7: strongly agree). In addition, the respondent was asked to answer some demographic questions. Finally, it is important to note that no incentive has been used to increase the response rate of the study. Following this data collection process, 505 people in household answered our survey over a 6-week period.

Data Analysis Process

The data analysis of the study was performed using a structural equation modeling software, that is, Partial Least Squares (PLS-Graph 3.0). Using PLS, data have no need to follow a normal distribution and it can easily deal with small samples. In addition, PLS is appropriate when the objective is a causal predictive test instead of the test of a whole theory (Barclay et al., 1995; Chin, 1998) as it is the case in this study. To ensure the stability of the model developed to test the research hypotheses, we used the PLS bootstrap resampling procedure (the interested reader is referred to a more detailed exposition of bootstrapping (see Chin, 1998; Chin et al., 2003; Efron & Tibshirani, 1993)) with an iteration of 100 sub-sample extracted from the initial sample (505 Cameroonian people). Some analyses were also performed using the Statistical Package for the Social Sciences software (SPSS 13.5). The results follow.

Results

In this section of the paper, the results of the study are reported. We begin to present some characteristics of the participants. Then we validate the PLS model developed to test the research hypotheses. Finally, we describe the results got from PLS analysis to test the research hypotheses.

Participants

The participants in this study were not relatively aged, with a mean of 30 years and a standard deviation of 11 years. More than half of the participants were male (54.2%). More than 80% of the participants were single (57.9%) or married (28.5%). The gross yearly income of the respondents in the study was in the range of \$0 to \$5 445 (0 to 2 750 000 CFA francs). Indeed, 78.9% of the respondents were winning between \$0 and \$1 979 (0 and 1 000 000 CFA francs), and, from this percentage, 67.6% were winning between \$0 and \$989 (0 and 500 000 CFA francs). And only 3% of the respondents were winning between \$4 950 and \$5 445 (2 500 000 and 2 750 000 CFA francs). Concerning the level of education, 15.4% of the participants in the study got a high-school diploma, 11.1% had a college degree, 36.6% completed a baccalaureate, 23.6% got a master, and 5.7% got a doctorate. The percentage of participants having a doctorate is very surprising here since it is practically three times higher than in a similar previous study conducted in Atlantic Canada (see Fillion & Booto Ekionea, 2010). Finally, the respondents in

our study were mainly students (36.4%), full-time employees (19.7%), self-employed (13.1%), unemployed (12.9%), part-time employees (10.5%), and volunteers (3%).

Validation of the PLS Model to Test Hypotheses

First, to ensure the reliability of a construct or a variable using PLS, one must verify the three following properties: individual item reliability, internal consistency, and discriminant validity (Yoo and Alavi, 2001; see the paper for more details).

To verify individual item reliability, a confirmatory factor analysis (CFA) was performed on independent and dependent variables of the theoretical research model. A single iteration of the CFA was necessary given all loadings of the variables were superior to 0.50 and then none item was withdrawn nor transferred in another variable in which the loading would have been higher. Indeed, in the whole, items had high loadings, which suppose a high level of internal consistency of their corresponding variables. In addition, loadings of each variable were superior to cross-loadings with other variables of the model. Hence the first criterion of discriminant validity was satisfied.

Table 2. Means, Standard Deviations, and Composite Reliability Indexes of Variables

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>Reliability Index</i>
Applications for Personal Use	4.17	2.17	0.85
Utility for Children	4.21	2.10	0.95
Utility for Work-Related Use	4.07	2.19	0.86
Utility for Security	4.71	2.03	0.89
Mobility	3.68	2.18	0.93
Applications for Fun	4.75	2.03	0.89
Status Gains	2.87	2.07	0.92
Friends and Family Influences	4.49	2.05	0.93
Secondary Sources' Influences	4.26	2.00	0.93
Workplace Referents' Influences	4.65	2.06	0.97
Fear of Technological Advances	4.50	2.25	0.89
Declining Cost	5.54	1.72	0.86
Cost	4.64	1.93	0.66
Perceived Ease of Use	5.56	1.63	0.88
Self-Efficacy	5.82	1.61	0.87
Income ^a	NA	NA	NA
Marital Status ^a	NA	NA	NA
Age ^b	30.13	10.63	NA
Child's Age ^c	8.31	6.87	NA
User Satisfaction	4.92	1.87	0.88

^aThis variable was coded as a nominal variable. It was measured in terms of non-quantified distinct categories.

^bThis variable was coded as a continuous variable. It was measured using the respondents' birth date.

^cThis variable was coded using the age of the younger child of the respondents.

And to get composite reliability indexes and average variance extracted (AVE) in order to satisfy the second criterion of discriminant validity and to verify internal consistency of the variables, we

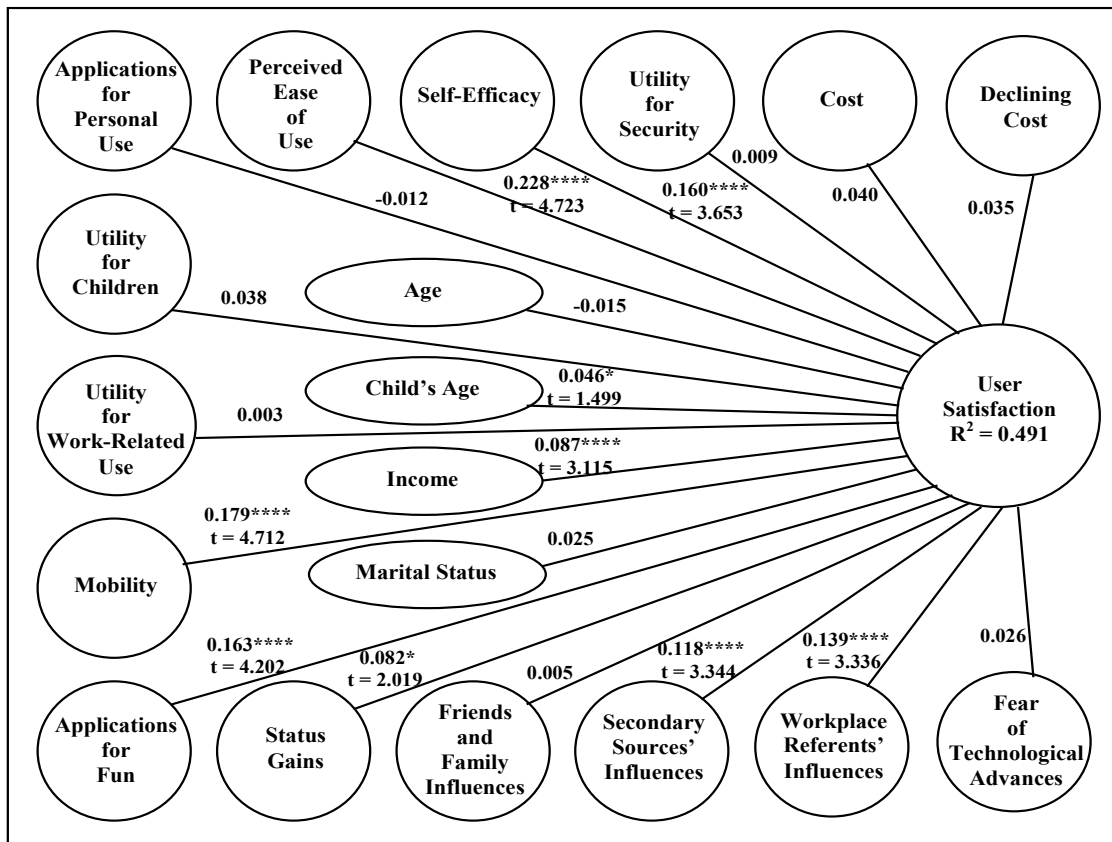
used PLS bootstrap resampling procedure with an iteration of 100 sub-sample extracted from the initial sample (505 Cameroonian people). The results are partially (for a matter of space) presented in Table 2.

PLS analysis indicated that all square roots of AVE were higher than the correlations with other variables of the model. In other words, each variable shares more variance with its measures than it shares with other variables of the model. Consequently, discriminant validity is verified. Finally, as supposed previously, we can see in Table 2 that PLS analysis showed high composite reliability indexes for all variables of the theoretical research model. The variables have therefore a high internal consistency, with composite reliability indexes ranging from 0.66 to 0.97.

Hypothesis Testing

First, to get the significant variables in the study and the percentage of variance explained (R^2 coefficient) by all the variables of the research model, we developed a PLS model similar to those of Fillion (2005), Fillion and Booto Ekionea (2010), Fillion et al. (2010), Limayem and DeSanctis (2000), and Yoo and Alavi (2001). And to ensure the stability of the model, we used the PLS bootstrap resampling procedure with an iteration of 100 sub-sample extracted from the initial sample (505 Cameroonian people). The PLS model is depicted in Figure 2.

Figure 2. PLS Model to Get Significant Variables and Percentage of Variance Explained



*p < 0.05; ****p < 0.001 (one-tailed test).

As shown in Figure 2, all the variables of our theoretical research model, used as independent variables, are explaining 49.1% of the variance on the dependant variable user satisfaction. And half of these variables are significant, that is, they are determining factors in satisfaction of using a mobile phone by people in household. More specifically, the seven more significant variables are perceived ease of use ($t = 4.723$, $\beta = 0.228$, $p < 0.001$), mobility ($t = 4.712$, $\beta = 0.179$, $p < 0.001$), applications for fun ($t = 4.202$, $\beta = 0.163$, $p < 0.001$), self-efficacy ($t = 3.653$, $\beta = 0.160$, $p < 0.001$), secondary sources' influences ($t = 3.344$, $\beta = 0.118$, $p < 0.001$), workplace referents' influences ($t = 3.336$, $\beta = 0.139$, $p < 0.001$), and income ($t = 3.115$, $\beta = 0.087$, $p < 0.001$). And two other variables are significant to the level of significance requested in this study, that is, $p \leq 0.05$. These are status gains ($t = 2.019$, $\beta = 0.082$, $p < 0.05$) as well as child's age ($t = 1.499$, $\beta = 0.046$, $p < 0.05$).

Finally, to measure interaction effect of moderator variables (the life cycle stage characteristics: income (I), marital status (MS), age (A), and child's age (CA)) in order to verify hypotheses 1 to 8, we used the PLS procedure proposed by Chin et al. (2003) (see the paper for more details). On the other hand, in a review of 26 papers assessing interaction effect of moderator variables published between 1991 and 2000 into information systems (IS) journals, Carte and Russell (2003) found nine errors frequently committed by researchers when they estimate such an effect, and provided solutions (see their paper for more details). We tried to avoid these nine errors in applying their solutions to test hypotheses 1 to 8. Indeed, among others, in the verification of hypotheses 1 to 8 that follows, interaction effect of a moderator variable is significant if, and only if, the path between the latent variable (the multiplication of items of independent and moderator variables forming interaction effect) and the dependent variable is significant, as well as if the change in R^2 coefficient (the difference between the R^2 calculated before the addition of interaction effect and those calculated after the addition of interaction effect, that is, ΔR^2 (pronounced delta R^2)) is greater than 0.

For a matter of space, given that the test of hypotheses 1 to 8 required the development of several PLS structural equation models (two models per hypothesis, that is, 16 models), we summarize PLS analyses to test each hypothesis. And, as for the PLS model developed to get the significant variables in the study and the percentage of variance explained by all the variables of the theoretical research model previously, for each PLS model developed, we used the PLS bootstrap resampling procedure with an iteration of 100 sub-sample extracted from the initial sample (505 Cameroonian people) to ensure the stability of the model.

Concerning hypothesis 1 related to the independent variable applications for personal use (APU), the path from the latent variable $APU*MS*A$ to the dependent variable user satisfaction is significant ($t = 1.808$, $\beta = 0.156$, $p < 0.05$) and there is a change in R^2 ($\Delta R^2 = 0.015$). Thus, as we expected, the moderator variables marital status and age have an influence on the relationship between applications for personal use and satisfaction of using a mobile phone by people in household. Also hypothesis 1 is supported. The scenario is similar for hypothesis 2 related to the independent variable utility for children (UC). The path from the latent variable $UC*CA$ to the dependent variable user satisfaction is very significant ($t = 2.836$, $\beta = 0.181$, $p < 0.001$) and there is a substantial change in R^2 ($\Delta R^2 = 0.014$). So, as we formulated in the hypothesis, the moderator variable child's age has an influence on the relationship between utility for children and satisfaction of using a mobile phone by people in household. As a result, hypothesis 2 is supported. For hypothesis 3 related to the independent variable utility for work-related use (UWRU), the path from the latent variable $UWRU*A$ to the dependent variable user satisfaction

is significant ($t = 2.333$, $\beta = 0.180$, $p < 0.01$) and there is a change in R^2 ($\Delta R^2 = 0.015$). Then, as we thought, the moderator variable age has an influence on the relationship between utility for work-related use and satisfaction of using a mobile phone by people in household. Hypothesis 3 is therefore also supported. Regarding hypothesis 4 related to the independent variable applications for fun (AF), the scenario is different. The path from the latent variable AF*A to the dependent variable user satisfaction is not significant ($t = 0.106$, $\beta = 0.010$) but there is a small change in R^2 ($\Delta R^2 = 0.002$). Contrary to our expectations, the moderator variable age has not an influence on the relationship between applications for fun and satisfaction of using a mobile phone by people in household. As a result, hypothesis 4 is not supported. And the scenario is similar for hypothesis 5 related to the independent variable status gains (SG). The path from the latent variable SG*A to the dependent variable user satisfaction is not significant ($t = 0.148$, $\beta = 0.149$) but there is a change in R^2 ($\Delta R^2 = 0.012$). Then, contrary to what we thought, the moderator variable age has not an influence on the relationship between status gains and satisfaction of using a mobile phone by people in household. Consequently, as hypothesis 4, hypothesis 5 is not supported.

In the case of hypothesis 6-a related to the independent variable friends and family influences (FFI), the path from the latent variable FFI*MS*A*I to the dependent variable user satisfaction is significant ($t = 2.265$, $\beta = 0.096$, $p < 0.01$) and there is a substantial change in R^2 ($\Delta R^2 = 0.028$). So, as we expected, the moderator variables marital status, age, and income have an influence on the relationship between friends and family influences and satisfaction of using a mobile phone by people in household. Hypothesis 6-a is then supported. Concerning hypothesis 6-b related to the independent variable secondary sources' influences (SSI), the path from the latent variable SSI*MS*A*I to the dependent variable user satisfaction is very significant ($t = 2.843$, $\beta = 0.090$, $p < 0.005$) and there is a huge change in R^2 ($\Delta R^2 = 0.033$). Thus, as we thought, the moderator variables marital status, age, and income have an influence on the relationship between secondary sources' influences and satisfaction of using a mobile phone by people in household. And hypothesis 6-b is also supported. But the scenario is different for hypothesis 6-c related to the independent variable workplace referents' influences (WRI). The path from the latent variable WRI*MS*A*I to the dependent variable user satisfaction is not significant ($t = 0.035$, $\beta = 0.002$) but there is a substantial change in R^2 ($\Delta R^2 = 0.026$). Then, contrary to what we formulated in the hypothesis, the moderator variables marital status, age, and income have not an influence on the relationship between workplace referents' influences and satisfaction of using a mobile phone by people in household. As a result, hypothesis 6-c is not supported.

Regarding hypothesis 7-a related to the independent variable fear of technological advances (FTA), the path from the latent variable FTA*A*I to the dependent variable user satisfaction is very significant ($t = 3.364$, $\beta = 0.186$, $p < 0.001$) and there is a huge change in R^2 ($\Delta R^2 = 0.039$). Thus, as we expected, the moderator variables age and income have an influence on the relationship between fear of technological advances and satisfaction of using a mobile phone by people in household. Hypothesis 7-a is therefore supported. And the scenario is similar for hypothesis 7-b related to the independent variable declining cost (DC). The path from the latent variable DC*A*I to the dependent variable user satisfaction is significant ($t = 1.766$, $\beta = 0.123$, $p < 0.05$) and there is a substantial change in R^2 ($\Delta R^2 = 0.027$). So, as we thought, the moderator variables age and income have an influence on the relationship between declining cost and satisfaction of using a mobile phone by people in household. Consequently, hypothesis 7-b is also supported. But the scenario is different for hypothesis 7-c related to the independent variable cost (C). The path from the latent variable C*A*I to the dependent variable user satisfaction is not

significant ($t = 0.795$, $\beta = 0.040$) but there is a substantial change in R^2 ($\Delta R^2 = 0.027$). Thus, contrary to our expectations, the moderator variables age and income have not an influence on the relationship between cost and satisfaction of using a mobile phone by people in household. As a result, hypothesis 7-c is not supported.

Finally, concerning hypothesis 8-a related to the independent variable perceived ease of use (PEU), the path from the latent variable PEU*A to the dependent variable user satisfaction is significant ($t = 1.635$, $\beta = -0.098$, $p < 0.05$) and there is a small change in R^2 ($\Delta R^2 = 0.003$). So, as we formulated in the hypothesis, the moderator variable age has an influence on the relationship between perceived ease of use and satisfaction of using a mobile phone by people in household. And hypothesis 8-a is then supported. The scenario is similar regarding hypothesis 8-b related to the independent variable self-efficacy (SE). The path from the latent variable SE*A to the dependent variable user satisfaction is significant ($t = 1.644$, $\beta = 0.137$, $p < 0.05$) and there is a change in R^2 ($\Delta R^2 = 0.004$). So, as we thought, the moderator variable age has an influence on the relationship between self-efficacy and satisfaction of using a mobile phone by people in household. Consequently, hypothesis 8-b is also supported.

In the next and last section of the paper, we discuss about some implications of the more important results of the study.

Discussion and Conclusions

This last section is devoted to a discussion about the results of the study and some conclusions. And, to support our discussion and conclusions, we provide the reader with a more detailed view of the PLS structural equation model developed to get the significant variables in the study, including the percentage of variance explained by each variable (see Table 3).

As shown in Table 3 (and Figure 2), the nineteen independent variables examined in the study explained 49.1 percent ($R^2 = 0.491$) of the variance in satisfaction in the use of mobile phone by people in household. And we can also see in Table 3 that the nine variables who showed to be significant (see also the significant beta path coefficients in Figure 2), that is, mobility, applications for fun, status gains, secondary source's influences, workplace referents' influences, perceived ease of use, self-efficacy, income, and child's age explained alone 44.3 percent of the variance in satisfaction of using a mobile phone by people in household. Thus, these nine variables are assuredly very important factors to take into account in future studies on the mobile phone and on the part of mobile phone providers, and more particularly perceived ease of use, status gains and applications for fun which explained alone 33 percent of this variance (see Table 3). It is very interesting to see here that one of the two new variables that we added to the Brown and Venkatesh's (2005) research model, that is mobility, showed to be very significant ($p < 0.001$) in satisfaction of using a mobile phone by people in household. Indeed, the present study showed that people are, to some extent, using a mobile phone for a matter of mobility (the mobile phone provides them with the possibility to use only this telephone to perform all their personal and professional activities). So here are one new variable that we can add to the integrated research model of MATH and household life cycle characteristics suggested by Brown and Venkatesh (2005) to test in future studies. In addition, this new variable may be included in the sales marketing plan of mobile phone providers.

Table 3. Beta Path Coefficients, T-Values, and Percentages of Variance Explained of Variables

<i>Variable</i>	<i>Beta</i>	<i>t</i>	<i>R</i> ²
Applications for Personal Use	-0.012	0.237	0.001
Utility for Children	0.038	0.866	0.000
Utility for Work-Related Use	0.003	0.071	0.000
Utility for Security	0.009	0.263	0.000
Mobility	0.179****	4.712	0.024
Applications for Fun	0.163****	4.202	0.067
Status Gains	0.082*	2.019	0.088
Friends and Family Influences	0.005	0.113	0.025
Secondary Sources' Influences	0.118****	3.344	0.029
Workplace Referents' Influences	0.139****	3.336	0.020
Fear of Technological Advances	0.026	0.719	0.002
Declining Cost	0.035	0.943	0.002
Cost	0.040	1.003	0.003
Perceived Ease of Use	0.228****	4.723	0.175
Self-Efficacy	0.160****	3.653	0.024
Income	0.087****	3.115	0.008
Marital Status	0.025	0.672	0.015
Age	-0.015	0.540	0.000
Child's Age	0.046*	1.499	0.008

*p < 0.05; ****p < 0.001 (one-tailed test).

In the large-scale study in which Brown and Venkatesh (2005) integrated MATH and some household life cycle characteristics (as moderating variables), the integrated model explained 74 percent of the variance in intention to adopt a personal computer for home use, a substantial increase of 24 percent over baseline MATH that explained 50 percent of the variance. In the present study, we used the integrated model proposed by Brown and Venkatesh (2005). We also added two new independent variables to the model, that is, utility for security and mobility. And we used the household life cycle variables as moderating variables in the research model as did Brown and Venkatesh (2005). Finally, given that we investigated the perceptions of people already using a mobile phone instead of those having the intention to adopt a mobile phone, as did Brown and Venkatesh (2005) for the personal computer, we used the dependent variable user satisfaction instead of behavioral intention. And the model explained 49.1 percent of the variance in satisfaction of using a mobile phone by people in household (see Table 3 and Figure 2). Thus, in this study, our theoretical research model explained the same percentage of variance than those explained by MATH alone (without the household life cycle characteristics and using behavioral intention as dependent variable).

Further, in a previous study in which we investigated the intention to buy a mobile phone by people in household (see Fillion & Berthelot, 2007), we also used the theoretical research model suggested by Brown and Venkatesh (2005) to which we added the same two independent variables utility for security and mobility than we included in the present study in which we investigated satisfaction in the use of mobile phone by people in household. And our model explained 50 percent of the variance in intention to buy a mobile phone, exactly as in the present study where our model explained 50 percent of the variance in satisfaction of using a mobile phone. Of course,

the dependent variable was different in the two studies. Indeed, we used behavioral intention in the previous study and user satisfaction in the present study. Hence we can conclude that the variable user satisfaction is as much appropriate as dependent variable in the research model proposed by Brown and Venkatesh (2005) than is behavioral intention. In addition, in the model we used in this study, more independent variables showed to be good predictors in satisfaction of using a mobile phone by people in household than did independent variables in the model we used in the previous study in intention to adopt a mobile phone for household use. In addition, in the present study, we found several interesting things to advance knowledge in this new and exciting field of adoption and use of technology in households.

First, we found nine very important variables that seem to be good predictors in satisfaction of using a mobile phone by people in household, and more particularly perceived ease of use, status gains and applications for fun, as well as one of the two new variables that we added to the Brown and Venkatesh's (2005) model, mobility (see Table 3). These nine variables are also very important to take into account by mobile phone providers to design new mobile phones still better adapted to people's needs and to perform their sales marketing. Second, we found that people are, to some extent, using a mobile phone for a matter of mobility, given our new variable mobility showed to be very significant (see Table 3). Third, we found that it is as much appropriate to use the dependent variable user satisfaction than the dependent variable behavioral intention in the research model proposed by Brown and Venkatesh (2005), given the percentage of variance explained in intention to adopt a mobile phone for household use in our previous study is similar to those of using a mobile phone in household in this study. The dependent variable *use behavior* proposed by Thompson et al. (1991) may also be tested in future studies. Also, we suggest the test of new independent variables that may explain a greater percentage of variance in satisfaction of using a mobile phone by people in household in future studies. To that end, we recommend three new independent variables in the next paragraph. Finally, the results of this study provided the evidence that it is far better to use the household life cycle variables as moderating variables in the research model, as did Brown and Venkatesh (2005), given the percentage of variance explained in intention to adopt a new technology in household by the model tested by these authors was significantly higher. Indeed, we used the household life cycle variables as moderating variables in the theoretical research model of this study instead of independent variables, as we have made in two previous study (see Fillion & Berthelot, 2007; Fillion & Le Dinh, 2008; Fillion & Booto Ekionea, 2010), and the percentage of variance explained by the model both in intention to adopt a mobile phone and in satisfaction of using a mobile phone by people in household has been higher each time.

It would be interesting in future studies to add some other new variables to the actual theoretical research model (those suggested by Brown and Venkatesh (2005) augmented with the two new variables that we tested in several previous studies (see Fillion & Berthelot, 2007; Fillion & Le Dinh, 2008; Fillion & Booto Ekionea, 2010), depending on the technology examined naturally, in order to try to explain still more variance in satisfaction of using a new technology in household. For example, the variable *attention* might be added in social outcomes (a lot of people, particularly young and old people, are feeling to be alone in the actual stressing world, in which both men and women are working and get very busy, so the mobile phone might be a good way to communicate with other people every time and everywhere to get the feeling to be less alone), the variable *social norm* might also be added in social outcomes (who knows, people might be using a mobile phone just to do as everybody!), and the variable *control* might be added in utilitarian outcomes (some people might be using a mobile phone to control other people in their family or

others; maybe another kind of Big Brother!). It would be also interesting to test the actual theoretical research model in other situations and with other populations.

Regarding the limitations of this study, as pointed out by Brown and Venkatesh (2005), the primary limitation is the reliance on a single informant. It is possible that other members of the household would have provided different responses concerning the motivations to use a mobile phone at home. Future research in household use of technology should incorporate responses from multiple members of the household to truly assess the nature of household use. A second limitation of the study is that it was conducted in a limited area of the Cameroon. If the study would have been carried out in the whole Cameroon, its results would be of a higher level of generalization. But the fact that the sample of the study was a randomized sample allows a high level of generalization of its results. Another limitation of the study is the administration of the survey instrument in-person by three different research assistants. Some respondents may have differently understood some items of the survey instrument depending on the different explanations from the part of the three research assistants and then provided more or less precise ratings on these items, introducing the possibility of some response bias. But the method we privileged in this study to administer the survey instrument is not an exception to the rule. Each method has its own limitations.

To conclude, much more research will be needed on the use of technology in households in order to better understand its impacts on people's daily life. The research will allow, among others, at least to minimize, if not to remove, some negative impacts of technology in people's daily life in the future and to develop new technologies still better adapted to people's needs. We will continue to inquire into this exciting field.

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Lessons Learned from Using a Wiki to Encourage Class Group Collaboration in an Online Management Information Systems Course

In the current business climate, it is useful to cultivate in students and future leaders the significance and importance of collaboration in team projects and to explore alternative methods to utilize team resources. This paper presents an experience on using web 2.0 technologies as collaboration tools for an online MIS course. The paper demonstrates the use of wiki as a medium to capture students' engagement through working collaboratively in a given task. It is argued that student must see collaboration work in a task that is interesting and meaningful to them in order to truly understand what collaboration means. Students were asked to collaborate on designing and developing a wiki to complete an end-of-semester group assignment. After completing the assignment, students expressed more engagement feelings in the activity and showed more elaborate knowledge on the given topic. A group evaluation rubric is presented at the end of the experiment to assess group collaboration elements. This rubric can be adapted and modified to include other components to improve the assessment process for future group collaborative work.

Introduction

Web 2.0 technologies such as wikis, blogs, RSS feeds, and podcasts, are commonly known as 'social software' because they socially connect users, allowing them to work collaboratively to develop web-content that is accessible to the public (Alexander, 2006). Wiki is one of the major components of web 2.0 architecture, which is associated with web tools and applications (Adie, 2006). Distinguished with its collaborative and sharing platform, web 2.0 has the potential to add pedagogical value to the teaching and learning process including complementing, enhancing, and adding new collaborative dimensions to the classroom (Parker and Chao, 2007).

One of the advantages of the Wiki as an educational medium is that it actively involves learners in their own developing and constructing of knowledge through interlinked web pages (Boulos et al., 2006). Wiki can enhance the learning process on both individual and groups bases. Individual learners can use wikis to write, edit, monitor, and reflect on their own thoughts or on others' insights (Cole, 2009), while groups of learners can utilize wikis to collaborate on designing, writing, editing, and managing their thoughts on several topics (Bower et al., 2006). There are many reasons of using wikis as an effective medium in enhancing collaborative work. For example, wikis enable users to create incremental knowledge (Cole, 2009), and provide open access and unrestricted collaboration in contributing and editing content (Hsu, 2007). Additionally wikis promote process-oriented as opposed to product-oriented writing (Lamb,

2004), and, unlike blog, they do not impose pre-defined formatting structure which give users the freedom to structure their knowledge as they desire (Bryant, 2006). In addition to its easy to use and intuitive interface, wikis enable users to trace their contribution history while supporting the negotiation of editing and adding more content (Bower et al., 2006).

Settings

In Dalhousie University, the advanced Information Systems and Technology course is taught primarily to second year students who are about to graduate from the Master of Information Management (MIM) program. The course is conducted online and delivered once a week via Wimba. Wimba is a live virtual classroom application that allows educators to connect with their students through interactive technologies that help compensate for the face-to-face classroom environment (Wimba, 2012). The course has an asynchronous lecture component and a practical component that requires students to post their reflections on an information management topic. The lecture component is a broad survey of the magnitude of the problem of information overload and the use of information technology tools to solve such problem. The course is conducted in module format where each two weeks students are exposed to several topics discussed and integrated using an activity and an assignment that ties the theory in the accompanying text with hands-on-experience applications. Since the course is completely delivered online using Blackboard Learning Systems (BLS) and Wimba, students are required to have daily access to a high-end computer with internet access. Further, participation in online activities and assignments is mandatory and is conducted throughout the semester using the online discussion board and assignment submission link.

Collaboration

For several years, the course included an objective for students to understand the concept of information management through working on a case study in the form of an end of semester project. Students were asked to choose an organization to build a small database for to help improve the flow of information within their departments. Such assignments required students to have a decent technical background on building databases. This database objective was not fulfilling for mid-career students who work mainly as managers and who have other staffs who manage the technical database issues with a more robust technical background. In the past two years, that objective was removed and we debated on using new technology that can help harness group collective intelligence and be a good fit for full time working students. Given that most students had newly adopted web 2.0 collaborative packages at their departments, working closely with web 2.0 tools such as wikis, blogs and mashup was thought to be a worthwhile assignment for students to learn about these tools and apply them at their work environment. In summer 2011, the decision was made to include collaboration as an essential objective of the course including three sub-components:

- Understand the meaning of collaboration and why it is required in an organizational context
- Learn about social computing and its potential benefits in nurturing collaboration within the organization environment
- Be able to use modern web 2.0 technology to collaborate on a given task

Defining Collaboration

Generally, collaboration can be defined as: interaction between multiple parties; all parties are doing work; and with a shared purpose or goal, all parties will get something in return for their efforts. With regards to collaborative learning, it is defined as rigorously and wilfully co-labouring with one another to compose a jointly accredited work in the field of knowledge together (Kane et al., 2005). For this course, collaboration refers to getting students to work collaboratively on planning, designing, and building a wiki site to complete and end-of-semester group report on a given topic. Further, students are required to work together in a class presentation to highlight the steps taken, the challenges faced, and the lessons learned from completing the report.

Why Choose Collaboration as an Online Course Objective?

Collaboration is the key to success in virtually every situation. Many workplaces function with multiple departments that work in harmony towards achieving a common objective. Since it is rare to find a single individual in charge of everything, it is practical for people to build upon their strengths and focus on developing their skill set by benefiting from others' through group work. Enabling individuals to focus on specific elements of the creative process, collaboration can bring different individual insights into a project. In virtually all collaborative projects, the assorted baskets of ideas and perspectives can lead individuals to induce innovative and fresh solutions to difficult problems that are hard to tackle individually. Furthermore, collaboration allows individuals to access others' knowledge bases that would otherwise be inaccessible by taking advantage of tools and skill sets that are unique to each individual. Most importantly, collaboration can help create new connections, and build expert views, which can substantially improve the quality of the final product (Kankack, 2011).

In a classroom environment, utilizing collaboration can shift the learning process from the traditional teacher-centered educational philosophy to a more learner-centered approach that gives the learner a dynamic and active role in the learning process. Traditionally, students have spent the majority of their educational hours in a mere school listening to faculty, whereby faculty take on the role of information disseminators and students take on the role of listeners and memorizers. In a collaborative situation, learners are more active; however, as valuable as it is to create a more dynamic classroom interaction, the significance of collaborative teaching and learning goes beyond that. By using collaboration, the main focus of the course is on the learners' motives to learn and in giving them a practical learning role. In other words, students are encouraged to construct their own knowledge by benefiting from each other's through collaboration. Many IS literature have discussed how important student-centered learning is in IS education (e.g. Schiller, 2009, Huang, 2007), and specifically in the introductory (Bakke et al., 2007) and the more advanced IS classes (Guthrie, 2010). The collaborative nature of this shift makes it important to add collaboration and the tools that support it to the objectives of this online course.

Another reason of choosing collaboration as a main objective, especially in business classes, is that the main business school accreditation association, AACSB, requires faculty member to motivate students to collaborate on given tasks to help develop students' collaborative skills (AACSB, 2009). As a reflection of this, the faculty of management at Dalhousie University has a core learning objective that students can work cooperatively in teams. Accordingly, it was suggested that the Information Systems and Technology online course be used to teach team

collaboration using modern technology tools especially with this particular course cohort who are mostly in charge of motivating their employees to collaborate on their organization tasks.

Technology

There are many wiki tools available free online but for the purpose of this class we used Wikia. Wikia operates a large network of collaboratively published video game, entertainment, and lifestyle content on the web through a trusted and customizable platform designed to help people share what they know and love. The Wikia platform is free and it features easy to use templates allowing novices to launch their own wiki sites in minutes.

Mechanics

Prior to the wiki assignment, students completed reading two chapters about the use of web 2.0 tools to collaborate at the work environment. Students had the chance to discuss the potential benefits of using web 2.0 tools such as wiki, blogs, mashups, and RSS within their daily work tasks. Additionally, students were asked to express their current knowledge and skills regarding these tools and which specific tools they would like to have in their future online courses. A week later, students were introduced to the wiki assignment and the designated topics that needed to be written about as the main subject of the wiki. Students worked in groups of 4-6 and were required to create a wiki on a given topic. For example, one group of student was given the topic of Gov. 2.0 and they are asked to post their reflections on the following issues of applying web 2.0 tools in Canadian government:

- What are the business drivers for E2.0 in the Federal Government?
- Who drives the tools?
- What obstacles have to be overcome before E2.0 technologies can be adopted?
- How can user adoption be encouraged with E2.0 tools?
- Challenges in Applying this in the Canadian Government

The assignment has three requirements:

- Each student is required to participate in the wiki setup online and organize the post in the form of a Wikipedia-like wiki.
- Each student is required to post new material covering at least two of the subtopics
- Each student is required to revise and edit someone else's material

Students were given directions on the kind of references they might use. Examples of the resources are course material chapters, online dictionaries, white papers, links to pictures, other's students' links, and any other helpful resources. In order to use Wikia, students have to register and create a group user name and a password. After logging in, students can start creating the wiki by choosing a template and then adding page by page. Figure 1 shows an example of the wikis that were made by one group of students. The wiki name is Crowd Wisdom and it is composed of eight different pages covering the topic of government 2.0. As can be seen from figure 1, each page can be easily edited by any student in the group by clicking on the *Edit* link. Besides, students can search the content of the whole wiki through a Wikipedia-like search box located on the right side each wiki page. Similar to regular web pages with clear navigation buttons, Wikia pages have navigational links on the forms of categories located at the bottom of

the page. Wiki users have the option to filter the wiki pages based on popular pages, videos, the name of the topic, and through community based filtering.

Figure 1: Crowd Wisdom Wiki



In each page through the wiki, students can modify the content by adding to the current page, or by editing previously written pages. Wikia also allows users to post figures or shapes, upload their own photo, or upload their own video file to further illustrate their written pages. For this particular exercise, students had the options to post their own photos along with their assigned wiki page.

Learning Outcome

In general, students' response to the wiki exercise was quite favourable. To get students feedback, students were asked individually to state their opinion on the wiki exercise through an anecdotally informal manner via the online discussion board that was assigned for the course. Getting each student to clearly state his/her views were not a difficult task given that the course had only 12 students. Students reported that working in groups through a wiki project is an interesting task that stimulated their interest in the topic and increased their time of engagement on the project topic. Although the exercise normally takes about 5-10 hours of diligent group work to finish it when done as traditional take-home project, student executed the whole exercise in two to three hours time frame. This indicates that groups can score higher achievement when working collaboratively in a topic given that it is meaningful and engaging to them. Student also reported more groups' dynamics and interaction among group members when collaborating on something novel in a traditional classroom setting. Some students stated that they learned things that they did not expect to learn if it weren't a group project. Others stated that the wiki exercise added more depth to their knowledge on the government 2.0 topic as the result of the group knowledge exchange that took place during the exercise.

Students also reported that the wiki exercise exposed them to indirect feedback from the members of the group while. The feedback was hard to reach if it weren't for the wiki. Mostly, this feedback focused on the given task, processes or self regulation. As reported by students and observed by the instructor, the given feedback was in different formats including cues, corrective feedback, motivational influence and reinforcement of specific behaviour. Finally, students explicitly stated that the wiki exercise was effective in getting them to work on their own pages towards a completed project. The more often students revised and updated their work, the better their final project.

With regards to students' evaluations to group dynamics, students explicitly stated that the wiki exercise helped them to work together and taught them to accept *the other opinion* and that opinion broaden their insight on the given topic. Further, some students stated that the feedback from group members helped them quiz their knowledge about given topics. Others stated that they are happy to do the group exercise rather than read from the text material. Additionally, some students indicated that each team member helped in adding to the whole picture and hence increased their knowledge regarding the topic. Finally, some students found themselves more focused when working with the group as opposed to working in a single mode. This means that the wiki exercise engaged students in a competition mode to publish the best pages on the topic which eventually boost the quality of the final product. Students reported an overall satisfaction with the learning outcome resulted in working in groups when asked the question: *What did you learn they you didn't expect to learn from this assignment?* For example, some students discovered some hidden aspect of their personality that they have never explored before such as being leaders, resolving conflicts, acting in different roles, and being good listeners. Further, some students felt that they need improvements on some team working skills such as the need to accept the opinions of others and the need to sacrifice their personal views for a more balance group insight.

Limitations

Despite the pedagogical value of the wiki exercise, students experienced some obstacles while working on the exercise. The major issue was the frequent advertisements that pop up automatically from the Wikia site and that distracted the look and the view of wiki. Further, although most students expressed their positive feelings towards the wiki exercise, few students tended to focus on their peers' work more than on their own work within the same group. This may be justified as group members knew each other and they got into a competition mode that went a little too far. Such limitation can be avoided when the group members do not take others editing their wikis pages personally. Further, some students reported some difficulties in understanding the real value of wiki in unifying group work into one integrated project. For example, some students started to post their input topic as if they are writing a blog without expecting that someone else might modify and add to their article.

Recommendations

Although the wiki exercise was just an experiment, it showed its pedagogical value in getting students more engaged and motivated to add content especially for online classes. For future use

of such exercise, we recommend exposing students first to some examples of wikis to get an idea of what a wiki can add to group work and what makes it distinguished from other traditional teaching tools. This could prepare students to accept insight and editing from their classmates and hence be prepared to produce high quality product.

Finally, we also recommend using another wiki platform with no advertisement that may contribute in distracting students from writing the wiki. Some suggestions may include the use of the wiki in the Blackboard Learn which can be custom made for online course. Another collaborative platform was suggested by Hazari et al. (2009) is Microsoft SharePoint which has many collaborative technologies embedded in the platform including wikis, blog, and collaboration tool that makes students comfortable with working on a team(Hazari, et al., 2009). SharePoint is particularly helpful to instructors when it comes to grading students' participation. For example, SharePoint has administrator reports that show which students had participated and when, which students had created pages and which students took part in editing other pages (Lending, 2010).

Sample Rubric for Grading Group Wiki Participation adapted from Group-Work Evaluation Form Kane & Harms (2005)

1. Overall, how effectively did your group work together on the wiki assignment?
Poorly Adequately Well Extremely Well
2. Out of the five/six group members, how many participated actively most of the time?
None One Two Three Four All Five
3. Out of the five/six group members, how many were fully prepared for the wiki activity?
None One Two Three Four All Five
4. Give one specific example of something you learned from the group that you would probably wouldn't have learned working alone.
5. Give one specific example of something the other group members learned from you that they probably wouldn't have learned otherwise.
6. Suggest one change the group could make to improve its performance

**Sample Rubric for grading individual Wiki Participation adapted from Lending (2010)
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1. Entering original content (1-3 points)
1 point for creating one page
2 points for creating two pages
3 points for creating three pages
2. Revising or providing feedback on other students' work (1-3 points)

- 1 point for editing one page
- 2 points for editing two pages
- 3 points for editing three pages

3. Uploading figures/picture (1-3 points)

- 1 points for uploading one figure/picture
- 2 points for uploading two figures/pictures
- 3 points for uploading three figures/pictures

4. Uploading videos (2-6 points)

- 2 points for uploading one video segment
- 4 points for uploading two video segments
- 6 points for uploading three video segments

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Communication Support for International Students

This paper presents best practices derived from the first year of offering discipline-specific communication support to international students of Commerce at Dalhousie University. A literature review of Asian international student learning behaviours and needs and on pedagogical approaches reveals that ESL students require discipline-specific language and writing help. This assistance should occur within an educational environment that is culturally responsive and regards international students not as deficient in skills but as positive contributors to the academic community. International students would benefit from changes in pedagogical approaches, faculty and staff attention to discipline-specific language development, and the facilitation of cross-cultural peer relationships.

Background

Dalhousie and other Canadian universities have experienced increasing numbers of international students. Statistics Canada (www.statcan.gc.ca) data reveal that the number of international students doubled between 1992 and 2008. In 2008, 9.3% of university students in Nova Scotia were international students, placing Nova Scotia among the largest providers of international education in Canada. These international students have enrolled in increasing numbers in the fields of business, management, and public administration. While the percentage of Canadian students enrolled in business fields remained about the same from 1992 to 2008, the percentage of international students in business fields rose from 14.5% to 23.2%.

The Faculty of Management at Dalhousie University and the Commerce program in particular have experienced dramatic growth in the numbers of international students. Since 2009, the number of Chinese students at Dalhousie has more than doubled from 291 to 699. The number of international students in the Bachelor of Commerce program has risen from 100 in March, 2009, to 220 in March, 2012. Of the 955 students enrolled in the Commerce program, then, 220 are internationals. However, Chinese students in the Faculty of Management, according to the Retention Committee, have the highest attrition rates in the university.

These numbers indicate a clear and pressing need to address the academic requirements of the international student population as well as our responses to this growing population as the host institution. This paper identifies best practices in making fruitful changes to our approach. The first section presents a literature review, which is followed by observations of current practice at Dalhousie. The final section offers recommendations on how to facilitate change.

Literature Review: International Student Education

This section offers an overview of issues in international student education with an emphasis on Asian international students in Canada enrolled in faculties of management. The increase in numbers indicates an urgent need to understand both international student issues and the issues of the university in adjusting to these changes while meeting the expectations of industry. Similar challenges have been faced by other institutions in Australia (Arkoudis & Tran, 2007; Zhang & Mi, 2010), New Zealand (Campbell & Li, 2008; Hebblethwaite, 2010), and the UK (Ryan, 2011).

International students often arrive in Canada without the background necessary to meet academic expectations. Difficulties with language interfere with the abilities to listen to lectures, understand course expectations, read sophisticated academic texts, produce writing assignments, complete examinations, and converse with instructors and domestic student peers. Zhang and Mi (2010), in a study of international students in Australia, assert that language issues (reading, writing, listening, speaking) are the most urgent problems among international students. Yang's (2010) study attributes English Language Learners (ELL) challenges to "underdeveloped English conversational ability" (p. 157) and addresses the difficulties students experience in attempting to engage in academic dialogue. Campbell and Li (2008) found that Asian students' difficulties, most notably with writing assignments, "came from their insufficient knowledge of academic conventions" (p.382). Zhang and Mi as well as other scholars (e.g. Kameda, 2012) note that cultural differences exist in rhetorical conventions, cultural schemata, writing perspectives and expectations as well as in the focus on argument. Academic literacy requires "disciplinary enculturation" and understanding of conventions, which are "embedded in cultural values and beliefs" (Campbell & Li, p.390).

Instructors play key roles in developing this knowledge of academic conventions. Arkoudis and Tran (2010) argue that because writing in the university is discipline specific, subject instructors are essential for developing language skills. Campbell and Li (2008) confirm the importance of instructors in equipping students with the language of their academic discourse. Delivering this knowledge, however, has proven challenging for educators.

Multiple studies have explored the issues surrounding international education in Western universities. The learning differences between Asian and Western students have been a primary focus of many of these studies. Ward's (2001) literature review "The impact of international students on domestic students and host institutions" offers a summary of the literature conducted to 2001 on cross-cultural differences in teaching and learning. Ward notes the research on individualism-collectivism (IC). This research finds that students from individualist cultures "are more likely to want to 'stand out' in class, to ask questions, give answers and engage in debate" and to exhibit competitiveness. In contrast, students from collectivist cultures "are more strongly motivated to 'fit in.' They are less likely to be verbally interactive in classes and are usually unwilling to draw attention to themselves" (Ward, 2001, "Cross-cultural Differences in Teaching and Learning," para. 2). According to these theories, then, Canadian students and instructors, coming from an individualist culture, exhibit behaviours that conflict with the cultural expectations of predominantly Asian international students.

Cheng (2000), however, sees this view of Asian learners as a “dangerous over-generalisation” (p. 435) and the view of Asians as reticent and passive as “a groundless myth” (p.438). Tian and Low (2011) dismiss studies that claim passivity is an emanation of Chinese culture as limited or inconclusive in evidence. Seeing the problem as a Western versus Eastern dissonance tends to elevate the West and to stereotype, and therefore simplify, the East. Despite various cultures of origin, Asian students become lumped into “a single cultural basket,” an homogenization that reinforces cultural stereotypes (Kumaravadivelu, 2003, p. 710). Kumaravadivelu summarizes the most common stereotypes of Asian students: “They (a) are obedient to authority, (b) lack critical thinking skills, and (c) do not participate in classroom interaction” (p. 710). Kumaravadivelu points out that these stereotypes have persisted despite inconclusive or contradictory research findings. Clark and Gieve (2006) warn against these “reified, abstracted, and frozen” (p.69) conceptions of culture. They argue that viewing Asian students as a single homogenous group lacking in critical thinking skills, withholding from classroom participation, exhibiting passivity, and relying on surface learning and attributing these deficits to Confucian heritage reinforces stereotypes and denies individuality.

Stereotypes contribute to the devaluing of Asian students. Asian students are frequently seen as operating at a deficit, as lacking the critical thinking skills and level of engagement necessary for success in university. Instructors may believe that ESL students should overcome this deficit, “rise” to acceptable standards, and assimilate. Ward’s (2001) work confirms this tendency. She cites Smith’s (1998) study of instructors of international students in the United States that found that instructors tended to adopt an assimilationist approach. These instructors maintained the importance of a uniform (and culturally situated) standard by which to measure understanding and achievement and failed to consider the difficulties that international students may experience in reaching this standard.

As Holmes (2004) asserts, there are “unexplained conventions” that students must adapt to for success in western universities: The “onus is on these Chinese students to reconstruct and renegotiate their primary culture learning and communication styles to accommodate another way”, a process, Holmes claims, that disadvantages and further differentiates students (p. 303). Tran (2011) argues that “reciprocal adaptation from international students and academic staff rather than the onus of adaptation being placed on international students is paramount to the enhancement of teaching and learning and the sustainable development of international education.” (p.80). Her study suggests that reciprocal adaptation of academics and international students is critical to the process of internationalizing the curriculum.

Ward’s (2001) literature review reveals, however, that “for the most part educators (particularly those at the tertiary level) make few, if any, changes in either the process or content of classroom activities” (“Impact in the Classroom: Section Summary”, para.1). This assertion is confirmed by Knight (2000, as cited in Ward, 2001) who found minimal interest from faculty members in internationalizing pedagogy or the curriculum. Research a decade later confirms that pedagogy has not adapted to the changing demographics of the university. Arkoudis and Tran (2010) report that assistance for international students is relegated to support staff despite evidence that indicates that lecturers are key in the development of student writing and essential for the learning of the discipline. Their research indicates that lecturers do not address ESL needs on a departmental level. Departments demonstrate a “lack of course planning related to integrating disciplinary and language learning or guidelines that can inform lecturers’ practices”

(p. 172). Instructors may not know how to internationalize course content or how to alter the process or content to respond to ESL needs.

Evaluation methods must also consider the changing student population. Ryan (2005, cited by Smith, 2011) “cautions against assessment that tests ‘the mastery of academic discourse’ (99) more than mastery of learning” (p.15). Smith argues that exams may handicap ELLs with the need to express themselves conceptually under time constraints, a potentially “discriminatory” practice that assesses language ability more than mastery of content: “The realities of a multicultural educational setting mean that the academic community cannot sensibly ignore the possibility that one of its prime assessment technologies may be unfairly discriminating against an increasing proportion of its student population” (p.22). Group work, discussions, and projects, on the other hand, contribute greatly to the academic and social experiences of students (Campbell & Li, 2008). Group work increases understanding of course content and academic and cultural expectations, enhances intercommunication skills, and offers the possibility of forming relationships with native students.

Holmes (2004) summarizes the challenges for host institutions. In order to become more culturally responsive, institutions, in Holmes’ view, must move from a “mind-set of a *deficit* to a *difference* view of Chinese learning and teaching methods” (p.304). In addition, Holmes advocates discipline-specific preparation in cultural, educational, and linguistic knowledge. Perhaps most importantly, Holmes recommends that host institutions identify ways to value international students, different business practices, and alternative world views. Reducing the deficit view and emphasizing the significant contributions that international students make through their varying practices and world views can invigorate the educational environment and strengthen the global business foundations of domestic, as well as international, students.

This literature review reveals that international students often enter Western universities unprepared to deal with academic expectations. Universities are equally unprepared to deal with these students. Pedagogical practice and the university culture have not adapted to a changing student population. Although research demonstrates the importance of teaching academic conventions and the language of the disciplines, little changes in pedagogy have occurred. Despite the benefits of internationalization, these benefits have not been exploited. The School of Business Administration at Dalhousie has attempted to address the needs of international students by providing discipline-specific language support for international students.

Business Communication Support

In Fall 2011, I started in a newly created, part-time position as Business Communication Advisor. The purpose of the position was to address the needs of international students, to facilitate their success in the Commerce courses, and to prepare students for the co-op term.

During the fall term, students required assistance with assignments in the writing-focused Business Communication course as well as with assignments for an International Business course. In addition, students requested assistance with interpreting assignment expectations, understanding English colloquialisms and academic language in textbooks and mass media, and adjusting to Canadian culture. In the second term, students required assistance in preparing assignments for the oral portion of Business Communication as well as written assignments in

other courses. The number of students requesting assistance dropped dramatically an average of 8 per day, with a high of 18, to an average of 6 per day, with a high of 14 students in one day. Discussions with students indicated four reasons for coming less regularly for help: First, second term courses generally did not require writing; and second, having attained merely average marks in the written section of Business Communication, students opted instead to focus on subjects in which they could succeed such as accounting. Third, students seemed more adjusted to academic demands and required less assistance dealing with the reading requirements and culture shock. Finally, my part-time schedule contributed to limited availability of services and did not fit well with many international student schedules.

Two one-hour conversation groups per week were also held in the second term. These sessions were designed to allow students an opportunity to practice oral presentations with a small and supportive audience and to provide a time to practice interview and conversation skills. Instructors were invited to share their expertise as occasional guests. These groups ranged in size from 2 to 6 and averaged 4 per session. While this number is disappointingly small, the students who attended on a regular basis were highly successful; they joined various societies on campus, participated in events such as the Research Symposium and First-Year Case Study Competition, attended job fairs, and interviewed for and received part-time positions in the community. The confidence of these students increased dramatically. To develop cross cultural peer relationships, a student volunteer joined the conversation groups once per week. She was able to provide insights on course requirements and the job market, participated with three international students in the first-year case competition, and facilitated networking into the local community.

In addition, I engaged in a number of departmental activities in the Faculty of Management, including committees, case study competitions, research symposiums, and awards events, which familiarized me with perspectives and experiences of both students and faculty. I worked with students on co-op term reports and provided support for a student who was accused of plagiarism, helping him prepare for his hearing, understand the academic integrity process and his errors, and re-establish his confidence. During the second term I also attended classes in which international students were presenting to offer support, maintained regular contact with the Business Communication instructors, and began networking to facilitate the integration of international students. In addition I helped redesign the assignments for a 100 level management course so that the assignments were more understandable to second language learners. These activities developed my familiarity with international student concerns.

To understand more fully the experiences of international students, I have engaged in research on international student education with a particular focus on Asian students, international education in Canada, and students in management fields. A chart outlining the key points of these studies was compiled to determine the aspects most applicable to our situation with the international commerce students at Dalhousie. This research has resulted in a compilation of the best practices as well as identified areas for future research.

Discussion

Students in the Dalhousie Commerce program experience many of the problems addressed in the literature. My experiences with and observations of these students, interactions with instructors in meetings and classrooms, and readings of instructor and marker comments on

student papers all indicate that the issues addressed in the literature are evident in our program. I did not conduct a scientific study, and the comments and papers shared with me represent a small percentage of the population. Nonetheless, I believe these observations may be generalized in assessing the international student experience in the Bachelor of Commerce program.

Culturally Responsive Pedagogy

I have repeatedly heard from instructors that international students who come to a Canadian university must adapt to the culture as it is. Some instructors refuse to make accommodations for students and insist that international students who cannot adapt quickly are deficient and do not belong here. Although instructors often regard this deficiency as a language deficiency, these instructors make limited changes in their uses and displays of language. Some instructors do not provide students with PowerPoints, which would enable students to focus on listening to the lecture and enable them to review the notes later. The structure of lectures is often unclear and transitions and linking words are sometimes omitted. Students complain that some instructors turn their backs on students, denying them the opportunity to link the sound with the facial movements and expressions. And although instructors have been told that ESL students often cannot read cursive writing, instructors and markers continue to write in this form, forcing students either to ignore the feedback or to ask someone for help. These behaviours unintentionally serve to reify the dominant culture, exacerbate language barriers, and disadvantage international students.

Students have, however, often found the pedagogical approaches of instructors to be positively suited to their needs. International students refer to their instructors as generally “nice”, accessible, and helpful in understanding difficult concepts. They value instructors who post PowerPoints because they often miss information as it is delivered in class and having the slides allows a way to retrieve key words and concepts. They also voice a preference for instructors who ban distracting cell phone and computer use. Instructors who place students in intercultural groups for projects also tend to have more culturally inclusive classroom dynamics.

Intercultural Peer Relationships

Many first-year international students at Dalhousie indicate that they have no Canadian friends, even though some students have been here nearly 18 months, having attended an English language school before enrolling at Dalhousie. This social barrier is also evident in the classroom. In one class, for example, domestic students occupied the top left section of the classroom while international students occupied the lower right section. International students, however, express a desire for stronger relationships with Canadians.

Facilitation of cross-cultural communication has been successful in crossing this divide. Group projects in some first-year courses facilitated students’ interaction with peers. International students in the conversation groups indicate that they prefer intercultural group projects. Some teaching assistants in one course asked students to form their own groups, while other teaching assistants randomly assigned groups. Students strongly prefer assigned groups because when students placed themselves in groups, groups were either domestic or international and were rarely mixed. International students express a strong preference for multicultural groups and domestic student contact. Students report that it is initially quite uncomfortable to participate in a

multicultural group; they report feeling embarrassed about their language skills, and they feel like outsiders. Despite this initial discomfort, students report feeling very satisfied with their group interactions by the end of the project period. They credit group projects as the most beneficial means of establishing friendships with Canadian peers. They do, however, indicate that Canadian students have a tendency to complete presentation assignments at the last minute. This tendency creates academic difficulties for international students, who prefer more time to practice.

Events such as the first-year case study competition also contribute to developing peer relationships. A first-year student served as a peer support volunteer and attended one of the weekly conversation groups. One of the international students told her that she was unable to fill a team for the case study competition and wanted to include a native speaker of English. The peer support volunteer enthusiastically joined the team, which then included one Malaysian, two Chinese and one Canadian. Surrounded by a largely domestic student population in the competition, these students initially appeared intimidated, but as they went through the day and observed and interacted with peers, their self-confidence deepened. The competition served well to integrate the students, who now report feeling more at ease in their peer group.

Evaluation Methods

Instructor and marker feedback contributes to students' success and their understanding of their discipline. Students report appreciation of instructor and marker feedback; however, feedback on papers varies in quality and quantity. Students show me instructor feedback for three reasons. The first is to learn from errors and make necessary changes in later assignments. The second is to share their success. The third reason is to have me interpret the marker's comments. International students cannot read cursive writing, nor do they understand abbreviated comments like "awk". Students highly value instructor comments. Their confidence and abilities improve through effective feedback, and they pay close attention to it.

The rubric used in business communication courses deducts 10% for a single spelling error. The rubric deducts 5% for each grammatical or mechanical error up to 20%. These penalties for errors have an extremely negative effect on English-as-a-second-language speakers. For one thing, they are highly focused on retaining this 30%. This focus inhibits the language play and experimentation that would lead to faster language development. Instead, students focus on simple words and manners of expression. Despite seeking help through the Dalhousie Writing Centre or from me as an international student business communication advisor, students often lost marks. At times this was a result of instructor or marker error. Students have returned to me with papers that have lost marks for run-ons that were not run-ons and for stylistic choices that reflected the voice of the student writer and did not contain errors but perhaps did not match the stylistic preference of the grader. One student lost the full 10% for spelling "practice" with a "c" rather than an "s". Markers do not mark spelling errors beyond the first one or grammatical errors beyond four, so students do not receive feedback throughout the paper. This practice hinders language development.

In addition to inadequate feedback, some feedback has been culturally insensitive. For example, one student brought his paper to me so that I could read him the following cursive comment: "You write very well for a Chinese student." Another student, who worked with me on a draft and had only two errors marked on the paper, one of which was a marker error, received

the comment, “Your English needs a lot of work!!” These responses attribute deficiencies to cultural origin rather than linguistic error.

Evaluative tools must be designed to ensure that the course knowledge, rather than linguistic knowledge, is assessed. On an exam, one instructor asked students to create a business plan on a “shoestring” budget. The ESL speakers had no idea what this meant and could not answer the question. The exam, then, evaluated skills with English colloquialisms rather than business acumen. A quiz in another class asked students how to ensure a résumé received an adequate number of “hits”. The international students were unable to answer the question. Such language uses rely on knowledge that accumulates with cultural experience and assesses students on cultural familiarity rather than subject knowledge.

Recommendations

Several measures can be taken to facilitate international student success. As noted in the literature, internationalization “rarely emerges spontaneously or in a naturally organised fashion” (Ward, 2001) and requires School of Business Administration commitment.

Assurance of English Competence

Although students should not be expected to be familiar with the colloquialisms and jargon of business English or the cultural elements that influence Canadian language and rhetorical devices, students should be able to construct simple English sentences, recognize and use basic vocabulary, and converse in English. Unfortunately, students who lack proficiency have been admitted into the program. *The minimum standardized test score for admission should be raised.*

Abandoning the Deficiency-based Perspective

As Zhang and Mi (2009) assert, “Rather than focusing on ‘what international students are not able to do,’ a deficiency-based perspective” educators must focus on “‘what international students are able to do’” (p.385). Morita (2004) argues that discussion topics must “incorporate international students' perspectives as legitimate sources of knowledge” (p. 599). *Viewing international students as assets to our programs will enable us to develop a stronger community, potentially increasing our global appeal and our retention rates.* Efforts should be made to capitalize on international student strengths—their perspectives on global markets and their ability to communicate cross-culturally, for example. A group project in which students are asked to analyze a business plan might capitalize on international student knowledge by asking students to assess a business from the student’s home country. The advantage of being familiar with the language used in the studied organization would empower the international student and enable the student to participate in group work equally.

Reciprocal Adaptation

As evident in the literature (e.g. Campbell & Li, 2008; Tran, 2011; Ward, 2001), the burden of adaptation is often on the international student. This view is evidenced at Dalhousie by the number of instructors who have stated that if students come to a Canadian university they must adapt to our ways. This belief, however, serves to elevate the position of the dominant culture and establishes a standard that international students cannot meet. Key to developing a

successful program is the need to *change the attitude that students are entering a Canadian university and must adapt to our ways*. We are training students to enter a global business arena. We should model, for native and non-native speakers alike, the behaviour and attitudes that will be required in a global context. We need to demonstrate and model the methods of intercultural communication our students will employ in the future. Some of our current practices, unfortunately, serve to alienate the international student population. In a business context, this alienation of a key stakeholder group would be inappropriate.

Pedagogical approaches should adapt to a changing student population. It may initially appear difficult to adapt our teaching styles to an international audience; however, this adaptation is necessary to accommodate a changing student population and may, in fact, serve to make our delivery to all students clearer and more accessible. Adapting pedagogical approaches might include providing clear and consistent lecture formats, providing summaries of key points in lectures, defining key terms, allowing extra time for international students to formulate questions and answers, adjusting evaluation methods to enable international students to display knowledge, allowing more time for tests, and making effective use of Blackboard to support lecture and discussion material. The acceptance of international students into the program necessitates mutual adaptation.

Facilitation of Intercultural Peer Relationships

As Ward (2001) states, *facilitation of intercultural relationships is necessary to maximize the benefits of internationalisation*. Intercultural small group work, peer-pairing, and lecture groups facilitate intercultural communication, develop language skills in non-native speakers, assist international students in adapting to a new environment, help in eliminating negative stereotypes, and may increase retention rates. Collaborative learning enhances academic performance and creates social cohesion. Work in small groups offers peer learning support and creates a collaborative learning environment (Hebblethwaite, 2010). Ward (2001) effectively argues that peer interactions must empower the international student:

An important point for consideration, however, is that peer interactions should involve equal status contact. If programmes are set up to place local students in the expert or donor role and international students in the learner or recipient role, the programmes are less likely to empower the international student and to enhance intergroup relations. It is important for international students to contribute something tangible to the interactive process. Whether their contribution is framed as cultural informant, language teacher or some other role, it is essential that their contribution can be recognised by both parties. (“Part II: Section Summary and Points for Consideration”, para.2)

Instructors who require group work, therefore, should seek to establish intercultural groups and identify ways to empower international students and ensure equal status among group members.

Lecture groups also may be usefully incorporated. Lecture groups are small groups within larger lecture classes. Students can be placed into intercultural groups to share lecture notes, participate in discussion, and complete in-class assignments. This approach would eliminate the physical barrier between domestic and international students and encourage cross-cultural communication.

Content-based Language Instruction

Content-based language instruction should be offered throughout the Commerce and Management programs. Content-based language instruction focuses on the teaching of language within the disciplines in which they are used. This recommendation is consistent with Zhang and Mi's (2009) proposal that ESL support for listening and speaking skills should be provided in the first two years of university and for academic writing throughout the university years for linguistically challenging courses. Studies by Beasley and Pearson (1999) and Snow and Kamhi-Stein (1997) illustrate the benefits of collaboration between content and learning support specialists in increasing ELL success. Because the language of business is particularly heavy with jargon and colloquialisms and because the varied forms of business communication are discipline specific, language instruction and assistance are more effective within a business communication context. The Using English for Academic Purposes site (<http://www.uefap.com/vocab/vocfram.htm>) offers a list of the 2000 words occurring most frequently in academic English. This site contains a sublist of vocabulary in business. Instructors of first-year courses might be aware of the need to teach this vocabulary to all students. In addition, writing and communication support from people knowledgeable in business communication is necessary.

In addition to providing support throughout the undergraduate program, ***writing requirements leading up to the co-op term should increase*** to ensure that students continue to maintain and develop skills. Courses that require no writing assignments might be slightly redesigned so that students have more opportunities to write.

Continue to provide international student communication support. The language of business is particularly laden with colloquialisms, and the forms of business communication are purpose and audience specific. Students of Commerce and Management require support from people knowledgeable in the requirements of the discipline. The Commerce program has changed the order in which students take courses, and International Business will now precede Business Communication. International Business requires the ability to listen, read, and write in academic language. It also requires group work. International students report that this course is the first time they have ever done a group project. Therefore, there is a particular need for support attached to this course. Students may require, for example, assistance not just in referencing but in how to paraphrase and summarize explanations of group work expectations, and the teaching of terms common in business English. As Arkoudis and Tran (2010) suggest, positioning academic writing support in a service area away from the core disciplinary activities contributes to the lack of common approach and separates language and academic support from teaching.

Facilitate learning of academic expectations by developing or providing uniform School of Business Administration standards and resources. A single, preferably Canadian, handbook on grammar, formatting, and referencing, required as a supplemental resource for all classes, would alleviate some of the issues with understanding expectations.

Changes in Evaluation

Ensure evaluative tools fairly assess what is being taught. Instructors should review evaluative tools to ensure they assess the course material rather than cultural experience or speed in reading or writing. Tools should be designed to enable students to demonstrate their knowledge.

Rubrics should not penalize international students through overemphasis on spelling, grammar and mechanics. Rubrics that are too severe in penalties for errors inhibit language growth by preventing students from experimenting with new terms and structures. Rubrics that deduct 10% for a single spelling error and 20% for more than four grammatical errors force students to simplify content to increase the odds of earning this 30%. Rubrics that overpenalize students for errors are counterproductive to successful language development.

Provide more effective feedback in writing intensive courses. Because markers in some courses currently stop marking spelling errors after a single spelling mistake and grammatical errors after four mistakes, students are denied feedback throughout the body of the paper. This lack of feedback results in limited potential for growth. As Arkoudis and Tran (2010) suggest, international students rely heavily on feedback as a way to understand the language of the discipline. Particularly in the first two years of study, greater attention should be paid to feedback as a way of developing academic literacy and teaching the conventions of the discipline.

Train markers and TAs to be culturally sensitive. Instructors, sessional assistants, and markers should be made aware of the problems in attributing errors to cultural deficiencies. Instructors could ask for blind review of papers marked by graders and TAs to lessen the likelihood of bias.

Encourage Instructors to Conduct Research

To familiarize instructors with issues regarding the international student population and to involve instructors in changing the culture of the organization, ***research opportunities instigated by the changing dynamics should be pursued.*** The literature review reveals gaps that might be exploited. For example, studies might be conducted on how Asian students perceive the quality of our education, methods of explicating academic conventions, cultural distance in small group work, domestic student perceptions of international students, differences between international and domestic student classroom behaviours, the teaching of content-specific discourse, Eastern student expectations of Western universities, and methods of retention.

Conducting research not only serves to further the research aims of the university but develops the knowledge necessary for changing the approach to this increasingly international student population. Instructors familiar with the needs of both international students and global industries will offer a richer educational environment, which would lead to a stronger Dalhousie reputation and higher retention rates.

Conclusion

The international student population in the Dalhousie Faculty of Management has grown substantially; however, we also have the highest attrition rates. The high attrition rates may be due to students' lack of preparation for an English-speaking, Western university. Or, attrition may be due to the Faculty of Management's inability to meet the needs of these students. It is likely that a combination of these problems has resulted in our inability to retain students. While the school has begun to offer language assistance, this assistance has been pushed to support staff rather than institutionalized. In addition to offering individual help with language issues through a business communication advisor, the school also must make changes in culture and practice. The burden of adaptation cannot be placed solely on the international students. These changes do not have to compromise the content of the program. Culture changes can occur through the

facilitation of peer relationships and a focus on the benefits international students bring to the program. Pedagogically, changes include designing lectures and assignments with this new, more international, audience in mind; providing adequate feedback; and creating assessment tools that enable EAL students to demonstrate knowledge. These changes can ensure retention and provide an opportunity to create a program that models best practice in international business education.

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University Selection in Maritime Canada: Studies of Millennial Students Across Four Universities Suggest It Should Not Be Business as Usual

This paper examines the criteria by which university students choose a particular university. With a dataset of 456 first-year millennial undergraduate business students, from four institutions located in Canada's Maritime Provinces, factor analysis helped identify the drivers of decision-making reported by females and males, and in-province and out-of-province students. These results may facilitate change in the recruitment strategies of undergraduate university administration and recruitment officials.

On the Importance of University Selection

The purpose of this study is to examine the criteria business students used in selecting a particular university. This research topic is of importance to university administrators, deans and recruiters who wish to stabilize or grow their undergraduate business program enrollments. In the broader context, however, a growing business population can contribute toward enhancing the business climate of the Maritime Canadian provinces and assist in resolving our productivity deficit (Council of Canadian Academies, 2009; McMillan, 2009).

The research objectives for this paper are three fold:

1. To identify the factors university students use in selecting among post-secondary institutions for their business studies;
2. To determine whether respondents of different genders employ the same selection criteria; and
3. To determine whether respondents from the same province employ the same selection criteria as those students applying from out of province.

To address these issues, we will examine the extant literature on university selection; employ factor and MANOVA analysis to determine whether there is any significant gender or locational differences in the reported selection criteria; and discuss the implications for researchers and university administrators in this field of interest.

What We Know about University Selection

A systematic review of the empirical literature was undertaken for this study. As the purpose of this study was to examine millennials' selection factors in choosing universities and academic

programs in Atlantic Canada, a number of criteria were used in defining the scope of the literature review. In terms of chronology, studies were separated between those that studied millennial populations – those students born between 1980 and 2000 (Howe & Strauss, 2000), who would start entering university in 1997 at the age of seventeen – and those studies that focused on earlier generations. The focal population of the extant literature was limited to studies of undergraduate students for the purposes of comparison; this includes both *ex ante* university selection studies of high school students intending to pursue post-secondary education, and *ex post* studies of university students who are reflecting upon the factors they considered in their choice of post secondary institution and program. In terms of academic programs, this paper focuses on business administration, though in terms of this literature review, all programs of study were included. There was no pre-defined limit to the geographic scope of the review.

Much research on college choice/university selection has been undertaken. Indeed, Henrickson (2002, 400-402) noted that approximately 1,900 articles had been written on the subject in the four decades previous. However, a small fraction, some 162 articles, actually emphasized a modeling approach to the university selection issue, and of these articles, less than 70% were empirical in nature. Henrickson categorizes such models in three forms: process models, which describe the decision-making undertaking of high school students; theoretical models, that employ a particular epistemological or ontological lens through which to examine the phenomenon; and methodological models, employing a statistical approach to the topic. Of the methodological approaches, factor analysis – the method employed in this paper – represented just 20% of the extant statistical methods-based approaches to the topic, with other methodological techniques including probability functions (50%) and multivariate regression or descriptive statistics (Ibid, 406). Henrickson's agent-based model, drawing on the work of McDonough (1997), employs a national data set of 237,777 students from 461 American colleges and universities to produce a four category typology of selection criteria. These include the individual student's *capital endowment*, representing factors such as gender, ethnicity, parental education levels, family income, etc.; *past capital accumulation*, including secondary school grade averages, standardized test scores, and so forth; *college choice behaviours*, such as the number of applications submitted, motivations for pursuing post-secondary education, availability of financial aid; and *anticipated capital returns*, such as career and lifestyle expectations (Ibid, 409). These categories are premised around 72 distinct variables. With our paper, we wanted to examine whether this form of conceptualization was consistent with the experience of Maritime Canadian post-secondary institutions, in particular with millennial students, to discover if findings from the literature were consistent in a different geographical context, or whether some unique and meaningful attributes were involved in the Canadian context.

Indeed, the geographic focus of the empirical college choice/university selection literature on millennials was varied. Such recent research has included Chinese students studying in New Zealand (Kim-Choy, Holdsworth, Li and Kim-Shyan, 2009); Indian students selecting among business schools in their home country (Reddy, 2011); as well as studies in Egypt (Roushdy, 2012); Finland (Keskinen, Tiuraniemi and Liimola, 2008); Italy (Petruzzellis and Romanazzi, 2010); Malaysia (Ariffin, Ahmad, Ahmad and Ibrahim, 2008); Turkey (Yamamoto, 2006); the United Kingdom (Veloutsou, Lewis, and Paton, 2004); and the United States (Daily, Farewell, and Kumar, 2010). However, Canadian empirical research on millennials' university selection criteria is much more limited. Lang (2009) studied 141 high school students from six high schools at multiple points throughout their university selection process, but prior to starting their post-secondary education. Among the key factors that Lang found included access to a specific

program of study that was viewed favourably in terms of career choice; program quality; and cost, with the latter varying in terms of significance dependent upon the type of post-secondary education that the student was considering pursuing (college or university). These findings are consistent with the review of the pre-millennial literature undertaken by Henrickson (2002) that identified a four-item typology of decision factors mentioned above. In another Canadian-situated study, Kulchitsky (2008) found differences between students interested in an on-campus versus a distance education university experience, especially in terms of course delivery method and associated fees; his study was of students who had already chosen and started at university. Beyond the empirical work of Lang and Kulchitsky, Canadian research in this area has employed quantitative but non-empirical approaches to the field, such as Austen and MacPhail's (2011) study of national survey data comparing Australian and Canadian women's choices of post-secondary education.

In terms of methodology, empirical research in the area has frequently employed descriptive statistics (Veloutsou, Lewis, and Paton, 2004; Veloutsou, Paton and Lewis, 2005; Yamamoto, 2006; Daily et al., 2010; Roushdy, 2012). More analytical is the use of factor analysis (Veloutsou et al., 2004; Kim-Choy, Holdsworth, Li and Kim-Shyan, 2009), but as Henrickson (2002, 406) noted, such a choice of methods was employed in approximately 20% of the empirical methodological modeling articles the author reviewed, with less systematic quantitative methods often being employed. A second methodological issue relates to the choice of sample. The extant empirical research has employed what can be termed as either *ex ante* studies of college choice/university selection, or *ex post* studies of same. In the case of the former, the sample consists of high school students who are being assessed as to their decision-making processes for choosing among post-secondary institutions. Such assessments may be based on interviews, surveys, or combinations of the above, either at a single point in time or throughout the decision-making process. However, such an approach may be flawed because not everyone that chooses a university might be accepted; of those accepted, some may not follow through and fail to register at the institution; and if registered, may not actually enroll and attend classes. Even for those students that do follow through the process to its conclusion, the research is so generalized as to minimize or ignore the distinguishing characteristics of individual academic institutions, which from the perspective of any given university, is a point of much interest for recruiters, administrators and faculty alike. In contrast, *ex post* approaches to the topic typically assess first-year students as to the reasons why they chose to attend a particular institution. Internal institutional surveys of a university's own students serve just such a purpose. While the advantages of this approach are self-evident from the perspective of the officials at that particular institution, it does not provide a means of comparison across institutions. Nor is it free from recall bias, as students might not be able, or be willing, to report the true motivations for choosing the institution in which they ultimately enrolled.

The state of the extant literature therefore provides an opportunity for further study. Of the empirical research on millennials' university selection criteria, just two peer-reviewed studies could be found – those of Lang and Kulchitsky – that examined the decisions of Canadian millennials. Of these two, only one – the Kulchitsky article – employed an *ex post* approach to the subject by assessing students who had already chosen and followed through on enrolling in a particular post-secondary institution. However, the Kulchitsky article focused not on broad-based criteria through which Canadian millennials chose to attend a particular institution; instead, it explores issues of educational delivery methods, by comparing on-campus to distance education preferences of a recent university cohort. What is missing is an empirical, cross-institutional, *ex*

post comparison of millennial Canadian university students' selection criteria. This paper will remedy this knowledge gap, and provide a comparison to the integrative work of Henrickson as well as the many other authors whose work has preceded ours.

Table 1: Comparative Group Map of Research on University Selection

Type of Study	Pre-Millennial Studies	Millennial Studies
Ex Post	Salim (1995)	Yamamoto (2006); Daily, Farewell and Kumar (2010); Reddy (2011); Roushdy (2012); Authors, 2012
Ex Ante	Henrickson (2002)	Keskinen (2004); Veloutsou, Lewis and Paton (2004); Lang (2009)

Research Methods

Maritime Canada consists of the provinces of New Brunswick, Nova Scotia and Prince Edward Island. There are sixteen universities in the three provinces, accounting for 70,817 registered full-time and part-time students in 2011, of which eleven offer undergraduate commerce and administration programs (MPHEC, 2012). The groundwork for this study followed the methods of Joseph, Yakhou, and Stone (2005). Using focus groups followed by surveys, Joseph et al. described 32 criteria according to the importance in students' decision-making as to which university to attend, and the performance of the university selected according to these criteria. We undertook our own focus group, supplying students with the Joseph et al. criteria and discussing any additional criteria they thought would be appropriate. The result was 36 measures by which students could assess the importance and performance of various criteria in determining their selection of a post-secondary education in which to study business. Five-point Likert scales, ranging from "Not at all important" to "Extremely important" were used to assess importance. A pilot study was undertaken at one of the eleven institutions, and following revisions to the survey instrument, additional universities were solicited to participate. A variety of background questions were included including the university at which they were enrolled; their year and program of study; their enrolment status; whether or not they were an international student; the country of origin at the time of application; if resident in Canada, their province of origin at the time of application; their postal code; current and expected grade point averages; their gender and age. The final sample consisted of students from four participating universities. Surveys were distributed to faculty in required first-year undergraduate business courses. Students were asked to voluntarily take the survey, which were collected by faculty and returned to the authors. A total of 486 survey responses were received, of which 456 were deemed completed.

An exploratory factor analysis, using principal component extraction and direct oblimin rotation of the 36 self-reported items pertaining to student priorities in selecting an undergraduate university was conducted on the dataset (N = 456) using SPSS. Prior to running the analysis the data was screened for potential assumption violations. The data was not deemed to be normally distributed for many of the 36 items, most suffering from negative kurtosis. To address this issue the data was transformed with a reversed log10. The distribution of the data improved greatly with the largest negative kurtosis now -1.388. It would have been preferred if all skewness and

kurtosis values were +/- 1 (Meyers, Gamst, & Guarino, 2006), however due to the limited violation and exploratory nature of this study we decided to proceed with our analysis.

The Kaiser-Meyer-Olkin measure of sampling adequacy was .88, indicating that the data were suitable for principal component analysis, based on the criterion that values between .8 and .9 are highly desirable (Field, 2005, p. 640). Bartlett's test of sphericity was significant ($p < .001$) indicating adequate correlation between the variables to complete the principal component analysis (Meyers, et. al., 2006).

A ten-factor solution was extracted, based on the Kaiser-Guttman criterion of eigenvalues > 1.0 . The ten-factors accounted for 61.7% of the total variance, however the tenth factor consisted of a single variable, so for practical purposes a nine-factor solution accounting for 58.8% of total variance was extracted. Eight of the 36 items, including the single item in component 10, did not load adequately ($\geq .5$) to any of the components extracted. Table 2 displays the individual items, component loading, communality, and corrected item-total correlation. Communalities were adequate, ranging from .474 to .781 for the 28 of 36 items loading on extracted components. When validating the extracted components component 6 (Campus), consisting of scores for location of the university and attractive campus, was deemed inadequate (Cronbach's alpha $< .6$ and corrected item-total correlation $< .3$); this component was not used for further analysis. Component 7 (Financial Feasibility), consisting of scores for excellent education at a reasonable cost and offer a variety of scholarships, had a lower Cronbach's alpha (.611) however given that alpha inflates with more items this score was deemed adequate for a two item scale (Field, 2005). The remaining components had Cronbach alpha ranging from .700 to .811, indicating good subscale reliability.

Factor 1, Support (eigenvalue = 8.68), accounted for 24% of the variance and had five items. Factor 2, Sport & Recreation (eigenvalue = 3.04), accounted for 8.4% of the variance and had four items. Factor 3, Advice (eigenvalue = 1.74), accounted for 4.8% of the variance and had three items. Factor 4, Reputation (eigenvalue = 1.59), accounted for 4.4% of the variance and had three items. Factor 5, Residence (eigenvalue = 1.42), accounted for 4.0% of the variance and had three items. Factor 6, Campus (eigenvalue = 1.30), accounted for 3.6% of the variance and had two items, however as noted above did not achieve adequate subscale reliability and has been excluded from further analysis. Factor 7, Financial Feasibility (eigenvalue = 1.22), accounted for 3.4% of the variance and had two items. Factor 8, Student Recreation (eigenvalue = 1.13), accounted for 3.1% of the variance and had two items. Factor 9, Academic Resources (eigenvalue = 1.05), accounted for 2.9% of variance and had four items. After excluding Factor 6 (campus) the remaining eight components accounted for a cumulative 55% of the variance.

Using SPSS an Anderson-Rubin factor score was calculated and saved for each of the eight components extracted. A factor score was also created based on the mean of the original responses for each subscale item for each of the extracted components. The factor Anderson-Rubin score was used to further analyze the data and the mean factor score was used to interpret a practical meaning from the results.

Table 2: Summary of Items and Factor Loadings from Principal Components Analysis with Direct Oblimin Rotation

Item Name	Component Loading*									Corrected Item-Total Correlation	
	1	2	3	4	5	6 ^a	7	8	9		
	Support	Sport & Recreation	Advice	Reputation	Residence	Campus	Financial Feasibility	Student Recreation	Academic Resources	Community	
Academic staff approachable/informed	0.806									0.669	0.671
Administrative staff approachable	0.766									0.682	0.665
Advisors are accessible and informed	0.650									0.620	0.555
Fast, hassle-free registration process	0.590									0.604	0.581
Helpful first year orientation program	0.527									0.474	0.458
Provide sports teams for entertainment		0.845								0.705	0.699
Provide student participation in sports		0.823								0.715	0.697
Provide recreational facilities / programs		0.704								0.585	0.566
Offer student activities outside class		0.657								0.648	0.558
Friends' advice			0.882							0.781	0.668
Family advice			0.821							0.727	0.481
Provide variety of internships/practicum programs			0.578							0.538	0.413
University rankings (MacLean's, etc.)				0.836						0.689	0.431
Have a well-known academic reputation				0.689						0.654	0.542
Reputation of the program of study				0.576						0.609	0.464
Guaranteed residence spot for first year students					0.863					0.771	0.678
Provides a welcoming residence experience					0.791					0.704	0.652
Treatment as an individual, rather than a number					0.623					0.570	0.488
Location of the university						0.713				0.608	0.123
Attractive campus						0.545				0.592	0.123
Excellent education at a reasonable cost							0.774			0.665	0.440
Offer a variety of scholarships							0.752			0.601	0.440
Social activities/night life								0.506		0.644	0.552
Offer student organizations outside class								0.501		0.655	0.552
Clean, spacious, well equipped classes									-0.712	0.638	0.547
Library with wide range of resources									-0.708	0.629	0.606
Safety on campus									-0.570	0.535	0.488
Bookstore conveniently located / stocked									-0.534	0.600	0.542

* Only loadings > .5 were included in the output

Eigenvalues	8.68	3.04	1.74	1.59	1.42	1.30	1.22	1.13	1.05
% of Variance	24.11	8.44	4.84	4.40	3.96	3.62	3.40	3.13	2.92
Cronbach's alpha	0.80	0.81	0.70	0.67	0.77	0.22	0.61	0.71	0.75

- a. Component did not have adequate internal reliability (cronbach's alpha < .6) and was excluded from further analysis

The two primary objectives of this exploratory study is to determine the extent to which millennial undergraduate university business students' university selection criteria vary by gender and by in- versus out-of-province. To prepare the in province variable respondents with a home address within the same province as the university they attend were assigned a value of 1 and where different 0. Cases without a home address province or postal code or university were left with a null value. To evaluate whether there are differences between the groups, by gender or by in/out of province, Hotelling's T^2 two-group multivariate analysis of variance (MANOVA) was conducted, the results for each of the MANOVA analyses follows.

Findings

Gender

A Hotelling's T^2 two-group between-subjects multivariate analysis of variance (MANOVA) was conducted on the eight components' factor scores extracted from the dataset as dependent variables support, sport and recreation, advice, reputation, residence, financial feasibility, student recreation, and academic resources. A binary choice of gender – female or male – was provided to student respondents and employed as the independent variable. After listwise deletion $N = 397$ with 165 (42%) female and 232 (58%) male cases.

As noted earlier a reverse log10 transformation was applied to the data to meet the necessary normality assumptions, however after transformation the data was assessed to meet the statistical assumptions of MANOVA analysis.

Based on Wilks' criterion (see Appendix A) there was a significant between group effect by gender (Wilks' λ , $F[8,388] = 7.70$, $p < .001$, partial $\eta^2 = .137$). The univariate ANOVA results for each dependent measure indicated four of the eight components are significantly affected by gender. The significant components were support, $F(1, 395) = 15.77$, $p < .001$, partial $\eta^2 = .038$, sport and recreation, $F(1, 395) = 5.41$, $p < .05$, partial $\eta^2 = .014$, financial feasibility, $F(1, 395) = 18.81$, $p < .001$, partial $\eta^2 = .045$, and academic resources, $F(1, 395) = 25.77$, $p < .001$, partial $\eta^2 = .061$. Based on the 5-point Likert scale mean factor scores (see Appendix B) it would appear that females are more interested in university support services ($M = 4.35$, $SD = .52$) than males ($M = 4.12$, $SD = .64$); are more interested in financial feasibility ($M = 4.19$, $SD = .69$) than males ($M = 3.89$, $SD = .81$); and are more interested in academic resources ($M = 4.18$, $SD = .62$) than males ($M = 3.83$, $SD = .72$). Conversely, males are more interested in sport and recreation ($M = 4.15$, $SD = .78$) than females ($M = 4.02$, $SD = .78$). No statistically significant gender-related effects were observed for the remaining components.

Province of origin (In versus out of province)

A Hotelling's T^2 two-group between-subjects MANOVA was conducted on the eight components factor scores extracted from the dataset as dependent variables, support, sport and recreation, advice, reputation, residence, financial feasibility, student recreation, and academic resources. The in province status of the student respondent was used as the independent variable. After listwise deletion $N = 371$ with 212 (57%) attending school in their home province (in province) and 159 (43%) attending school outside their home province (out province).

As noted earlier a reverse log10 transformation was applied to the data to meet the necessary normality assumptions, however after transformation the data was assessed to meet the statistical assumptions of MANOVA analysis.

Based on Wilks' criterion (see Appendix A) there was a significant between group effect by province of origin (Wilks' λ , $F[8,362] = 6.37$, $p < .001$, partial $\eta^2 = .123$). The univariate

ANOVA results for each dependent measure indicated four of the eight components are significantly affected by province of origin. The significant components were sport and recreation, $F(1, 369) = 23.78, p < .001, \text{partial } \eta^2 = .061$, advice, $F(1, 369) = 5.48, p < .05, \text{partial } \eta^2 = .015$, reputation, $F(1, 369) = 5.75, p < .05, \text{partial } \eta^2 = .015$, and residence, $F(1, 369) = 24.52, p < .001, \text{partial } \eta^2 = .062$. Based on the mean factor scores (see Appendix B) it appears students from out of province are more interested in sport and recreation ($M = 4.26, SD = .70$) than in province ($M = 3.96, SD = .84$); are more interested in advice from others ($M = 3.82, SD = .73$) than in province students ($M = 3.67, SD = .87$); are more interested in university reputation ($M = 4.16, SD = .62$) than in province students ($M = 4.07, SD = .61$); and are more interested in residence ($M = 4.34, SD = .67$) than in province students ($M = 3.99, SD = .86$). No statistically significant province of origin effects were observed for the remaining components.

Discussion

The result of our empirical examination of university selection factors among four Maritime Canadian institutions was an eight factor solution that explained 55% of the total variance. In comparison, Reddy's (2011) study of the selection criteria of Indian business students produced a six factor study and an explained variance of 58.25%. The comparison of the two studies is as follows:

Table 3: Factors Comparisons Across Two Studies

Author/Year	Reddy (2011)	Authors (2012)
Country of Study	India	Canada
Sample Size	274	456
Institutional Coverage	Six universities	Four universities
Factors in University Selection		
Factor 1	Auxiliary academic factors	Support services
Factor 2	Attainment yardsticks	Sports and recreation
Factor 3	Pure academic offerings	Advice
Factor 4	Physical facilities	Reputation
Factor 5	Personal and locations comfort zone	Residence life
Factor 6	Endorsement/ratification	Financial feasibility
Factor 7		Student recreation
Factor 8		Academic resources

Not only does our study refine the number of relevant factors in comparison to the work of Reddy, but our findings suggest the decision-making criteria of students in Canada differs from the criteria applied by Indian students. Our findings further suggest some gender-related and location-specific factors that vary depending upon whether the student applied within the same province as, or from a different province than, the selected university. Specifically, that female students prioritized *support, financial feasibility, and academic resources* while male students prioritized, relative to female students, *sports and recreation*. We also were not surprised to find that out of province students rank *advice from others, university reputation, and residence* higher than in-province students, because in-province students likely have a greater awareness of their home province universities and thus are not as concerned with advice from others, or the reputation, of a home province institution when compared to a less familiar out-of-province university. In-province students indicated a generally lower concern with residence, which is not

unexpected, given that students within commuting distance of their in-province university would have a lesser need, and therefore assign a lower priority to, issues relating to residence life.

Some of our findings were surprising. For example, *financial feasibility* was not significantly different for in-province and out-of-province students. As the total cost of tuition varies at some universities, with provincial bursary support available but varying on whether the applicant is applying to attend an in-province institution or is applying from elsewhere in Canada, it would be reasonable to consider that out-of-province students may have been presumed to be more interested in financial feasibility than in-province students because of the higher expenses for out-of-province applicants. We were also surprised that out-province students were not more interested than in-province students in *support services* – such as the approachableness of administrative, academic and advisory staff; the ease of registration; and the helpfulness of the first-year orientation program. We perceived, falsely, that students that were enrolled further away from home would be looking for more support from the institution; it appears that all students value these aspects. Lastly, we were surprised that out-of-province students prioritized *sports and recreation* – as indicated by the opportunities for students to participate in sport; the availability of varsity sports teams for entertainment; the availability of recreational facilities and programs; and the opportunity to pursue extra-curricular activities outside of class - would rank higher for out-province students than in-province. Further analysis at a more detailed level than the province of origin – such as by geographic distance from the institution based upon the postal codes of the respondents – might provide some greater understanding on this finding.

Implications for Researchers and University Administrators

Our study has practical implications for both researchers and university administrators. In terms of the former group, we note that improving our understanding of university selection criteria serves our self-interest: the more our student population grows, the greater the need for faculty to teach, supervise and develop the next generation of society's leaders. That this data source is also conveniently situated in close proximity to academic researchers is also a boon to the research efforts of many, as Henrickson (2002) alluded to in her work. However, we are struck at the variation in the analysis of the extant literature. The number of studies in the extant literature not involving the reporting of empirical results, or employing only descriptive statistics, was a concern. We think there is an opportunity for greater methodological rigour on the part of researchers engaged in education studies, because the management of our education system is fundamentally the management of our future as a society. Finding the right fit between a student applicant and a post-secondary institution can have a profound impact on the character of the student, as well as the institution and continued research may help improve the fit.

For university administrators, our recommendation is to leverage modern technology to better address the fragmented audience of prospective student applicants. Our review of a sample of Maritime Canadian university website suggest the popular “viewbook” concept – wherein information of relevance to prospective student applicants may be found – was almost always a singular, universal publication. In contrast, one university located in the Maritime Canadian provinces was found to have a customizable viewbook, the content of which presumably varies with the characteristics of the applicant that orders it. The opportunities afforded by custom, on-demand publishing, social media, website design, and data mining technologies could assist in providing a more extensive approach to the mass customization of university recruitment activities than we found in the course of this research project. In an age when one can customize the purchase of a laptop that costs a few hundred dollars, the limited extent to which the university recruitment experience is personalized appears surprising to us. Hindering progress in this regard may be the reluctance of some institutions to co-operate in sharing information, be it best

practices or otherwise. We found in our research a reluctance of university officials and faculty to participate in our study because of fear of losing proprietary information on their students, and concerns over negative perceptions that various selection criteria preferences might reflect on a given institution. And yet, given both the similarities and differences that exist between female and male applicants, and in-province and out-of-province applicants, a business as usual approach does not seem to be sustainable if an institution wishes to stabilize and grow student enrolment.

Limitations and Future Research

In providing a study on university selection, we wish to acknowledge particular constraints and limitations to our study. Our study was of 456 business students at four Maritime Canadian post-secondary institutions. It would be speculative to generalize the results to non-business students, to other Maritime Canadian institutions, or to universities in other provinces and countries. Additional studies of students in different programs and at additional institutions are warranted. A nationally-funded research program carried out by a network of academic researchers and endorsed by a national academic association would be beneficial in providing a more holistic examination of these issues.

In terms of methodology, principle components factor analysis, and MANOVA analysis, served us well in carrying out this study. However, normality issues required transformation of the data making practical interpretation of the results more difficult; however, it was possible to statistically identify if and where between group variations existed. On a related note, two of the factors we identified – *financial feasibility* and *Student Recreation* – are only two-item components; the ideal would have three or more indicators within each factor. Future research may also wish to flush out the selection factors further and to develop a stronger scale than was possible with this initial study.

Action-based researchers may wish to examine the creation of a tool to enable university recruiters and other administrators to better assess how their institution performs on these factors. In conjunction with university officials, researchers may wish to assess how well their institution is perceived to perform on these factors and cross reference the results with identifiable target audiences (gender; province-of-origin; other) to determine if enrollment patterns by each target audience can be predicted based on university performance / perceived performance on these factors.

Appendix A

Multivariate and Univariate Analysis of Variance for Millennial University Selection Factors

Source	Multivariate		Univariate							
	df	F	Support	Sport & Recreation	Advice	Reputation	Residence	Financial Feasibility	Student Recreation	Academic Resources
F ratios for gender ^{a,b}	8	7.70***	15.77***	5.41*	0.24	0.19	0.94	18.81***	0.75	25.77***
MSE			14.99	5.34	0.24	0.19	0.94	17.97	0.75	24.29
F ratios for in-province ^{c,d}	8	6.37***	0.55	23.78***	5.48*	5.75*	24.52***	0.68	1.38	0.02
MSE			0.54	22.71	5.30	5.74	23.09	0.69	1.38	0.02

Note: Multivariate F ratios were generated from Wilks' criterion

a. Multivariate df = 8, 388

b. Univariate df = 1, 395

c. Multivariate df = 8, 362

d. Univariate df = 1, 369

*p < .05; **p < .01; ***p < .001

Appendix B

5-Point Likert Scale Significant Factor Mean Scores and Standard Deviations as a Function of Gender

Gender	N		Support		Sports & Rec		Fin. Feasibility		Academic Res.	
			M	SD	M	SD	M	SD	M	SD
Male	232	58%	4.12	0.64	4.15	0.78	3.89	0.81	3.83	0.72
Female	165	42%	4.35	0.52	4.02	0.78	4.19	0.69	4.18	0.62
N =		397								

Reverse Log10 Significant Factor Mean Scores and Standard Deviations as a Function of Gender

Gender	N		Support		Sports & Rec		Fin. Feasibility		Academic Res.	
			M	SD	M	SD	M	SD	M	SD
Male	232	58%	0.23	0.15	0.22	0.17	0.28	0.17	0.29	0.15
Female	165	42%	0.18	0.13	0.25	0.17	0.21	0.16	0.22	0.15
N =		397								

5-Point Likert Scale Significant Factor Mean Scores and Standard Deviations as a Function of In-Province University Selection

In Prov.	N		Sport & Rec		Advice		Reputation		Residence	
			M	SD	M	SD	M	SD	M	SD
Yes	212	57%	3.96	0.84	3.67	0.87	4.07	0.61	3.99	0.86
No	159	43%	4.26	0.7	3.82	0.73	4.16	0.62	4.34	0.67
N =		371								

Reverse Log10 Significant Factor Mean Scores and Standard Deviations as a Function of In-Province University Selection

In Prov.	N		Sport & Rec		Advice		Reputation		Residence	
			M	SD	M	SD	M	SD	M	SD
Yes	212	57%	0.26	0.17	0.31	0.18	0.24	0.14	0.25	0.18
No	159	43%	0.19	0.15	0.28	0.16	0.22	0.15	0.17	0.16
N =		371								

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ASB 2012
Management Education Abstracts

**Occupy Business Education: Critically Reflecting on
Approaches to Ethics Integration in Business Education**

Cathy Driscoll
Saint Mary's University

Anecdotal evidence from the business ethics classroom illustrates how the virtues of justice, truthfulness, and courage are being marginalized by some business students. There is indication of common managerial rationalizations of unethical decisions. Implications for business ethics instructors and business education stakeholders are discussed.

Understanding Expectations of Commerce Students and Faculty

Linda R. Macdonald
Binod Sundararajan
Dalhousie University

Increasing numbers of international students, particularly students from Asia, are coming to Dalhousie, yet an understanding of the effect on domestic students and changes in pedagogy that would enable both groups to succeed lags. Understanding student expectations will help us assess both domestic and international student needs and contribute to our ability to satisfy these needs. This paper outlines a research plan to achieve this understanding.

Exploring Case Creation

Conor Vibert
Acadia University
Vanessa Chang
Curtin Business School, Australia

This discussion paper explores the business of teaching case creation by offering a brief oversight of the industry and a sample of competitors, some alternative forms of content and delivery now available, and suggested principles for new entrants seeking to compete in this marketplace.

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The Relative Influence of Promotion, Peer and Family Influences on Youth Gambling in Nova Scotia¹

This exploratory research investigated the relative influence on youth gambling behaviour attributed to family and peer influencers and gambling promotion. Analyzing data collected from Nova Scotia public school students in grades 7 through 9, researchers determined that when subjected to a stepwise regression analysis, peers provide statistically significant influence on youth gambling activity, rendering the student's exposure to gambling promotion and family influence insignificant as factors in gambling behaviour. Future research is recommended to further examine these relationships using larger samples of boys and girls.

Introduction

Gambling is a thriving global industry. Governments are becoming increasingly dependent on gaming revenues, and despite attempts to restrict legal gambling to those of legal age, concern has been expressed in recent years about the prevalence of gambling among youth. Previous research determined that 80% of teens had gambled (Messerlian, Derevensky, & Gupta, 2005). There is also ample evidence that boys are more inclined to gamble than girls are, often starting at a younger age (Blotnicky, Das, Fitzgerald, French, Norris, & Perrier, 2008; Potenza, Maciejewski, & Mazure, 2006; Toneatto & Boughton, 2002).

There has been great speculation as to what the major influencers are for youth gambling behaviour. Is it family influence? Are young people more likely to gamble if their family members engage in gambling related activities? Do peers have an influence on gambling behaviour? Or can unhealthy influences on youth behaviour be blamed on more aggressive attempts to advertise games of chance?

Moscovitch (2006) determined that gambling within the family unit, a concept he termed as the family enterprise, was central to the gambling experience of children. He maintained that in families, gambling activities are enshrined in culture and tradition, and are frequently passed down through generations. Raylu and Oei (2004) reported that gambling activities may be

¹ This research was funded by a grant from the Nova Scotia Gaming Corporation. Recognition is also given to Dr. Michael Fitzgerald (Mount Saint Vincent University) and Dr. David Perrier (Saint Mary's University), retired members of the research team, who were involved in the data collection and initial data analysis for this project.

culturally rooted. However, most of the relevant research has been based in North America and more research should be done in other cultures to better understand the acculturation of gambling activities.

Many families consider gambling behaviour to be less alarming than other behaviours that teenage children may engage in, leading some researchers to believe that gambling has become “normalized” by families and children (Campbell, Derevensky, Meerkamper, Cutajar, 2011). Children are exposed to scratch tickets in restaurants and corner stores. They are also exposed to lottery ticket purchases, card games, and other gambling-type behaviours in the home. And while children may not be admitted to casinos, they are aware of many casino games. Research has shown that parental consumption of lottery tickets introduces that activity to children, creating behaviour patterns that last into adulthood (Felsher, Derevensky, & Gupta, 2003).

Peers have long been known to influence adolescent behaviour, but the actual influence of peers on youth gambling is not clear. While there appears to be an influence, it is difficult to partial peer influences out from other factors. In addition, the apparent normalization of gambling as a social activity may account for the fact that fewer parents are tuned into peer gambling behaviours and the influence of such behaviours on their children’s activities. Haroon and Derevensky (2001) revealed that peer influence impacts gambling activities and the amount wagered, but that there were differences based on gender and mixed gender groups. Females seemed to wager more when playing with boys and girls, or female pairs, while boys tended to bet more regardless of who they were gambling with. Chalmers and Willoughby (2006) arrived at similar conclusions in their research, also postulating that female’s gambling behaviours were more heavily impacted by family and peer influences than were gambling behaviours among male youths.

Some critics blame marketers for encouraging gambling among youth. Friend and Ladd (2009) expressed concern that the growing investment in gambling related advertising campaigns may influence the minds of adolescents, encouraging them to engage in gambling behaviours even though they are not of legal gambling age. The researchers relate the impacts of gambling advertising to society’s experiences with tobacco advertising, concluding that it has a demonstrable impact on the behaviour of youth between the ages of 12 and 17 (p.286). These concerns were also expressed by Monaghan, Derevensky and Sklar (2008) in a review of gambling marketing activities in Canada and their potential impact on youth. Their premise, that ads are designed to be interesting and alluring to young people, is based upon the body of evidence created in the analysis of liquor and tobacco advertising and its impact on youth. However, unlike tobacco and liquor ads, no regulatory guidelines exist to control ads for gambling activities and products.

Research Goals

The purpose of this paper was threefold: to examine the relative impact of family influence, peer influence, and promotion influence, on youth gambling activity. This research is part of a larger project that deals with a broad range of issues relative to youth gambling. The scope of the empirical, exploratory study reported in this paper, was to test three hypotheses

regarding influences on youth gambling behaviour. The following research hypotheses were developed based on previous research in the field:

1. Family members who gamble influence their children to gamble as well. Therefore, children who have more family members who gamble will be likely to engage in gambling behaviour.
2. Peers who gamble will influence other youth to engage in gambling behaviours. Therefore, children who have peers who gamble will be likely to engage in gambling behaviour.
3. Gambling promotion influences youth to gamble. Therefore, youth who have been exposed to more gambling promotions will be likely to engage in gambling behaviour.

Methodology

A random sample of middle and high school students was drawn from school boards in Nova Scotia. The specific school boards that participated in this project were kept confidential to protect the privacy of students and their families. Ethics approval was obtained from the school boards and from the University Review Ethics Board of Mount Saint Vincent University. A random sample of students was drawn across grade levels and schools in school board areas.

Students were required to obtain parental consent before they could participate in the study. Students who were given permission to participate completed a paper-based questionnaire during class time. The surveys took up to 40 minutes to complete. The data was collected during the spring and fall of 2007. While data was collected from grades 7, 9, 10, 11 and 12, only grades 7 and 9 were included in the final analysis due to low response rates from the higher grades. A total of 192 useable responses were obtained from grades 7 and 9. Data was weighted by grade distribution prior to each analysis to compensate for any response bias across grade levels.

Researchers included a variety of potential familial, peer, and advertising influencers on youth gambling behaviour in the questionnaire. It should be noted that some forms of gambling may be considered less harmful than others. However, youth gambling research has not rated gambling activities based on their level of engagement or severity. Therefore, in keeping with previous research in youth gambling, all forms of gambling, from scratch tickets to casino-style gaming, were considered to be gambling activity in this research. After exploring what students considered to be gambling activity, as well as having students list different types of gambling activities, the students were asked if they gambled.

Drawing on the same definition of gambling and gambling-related activities, students were asked whether or not various family members gambled. Family members studied included mothers, fathers, siblings, step-parents, step-siblings, foster parents, grandparents, and other relatives. They were asked about their peers' gambling behaviour, including classmates or other friends. Finally, respondents were asked if they had seen ads for gambling in various media. Media listed included television ads, billboards, magazine and newspaper ads.

Three influence scores were created for further analysis by summing the total number of family, peer and promotional influencers. Once summed, the three influence scores were

subjected to a stepwise regression analysis to reveal which was the most significant influencer of adolescent gambling behaviour.

Prior to conducting the regression analysis, variables were checked for correlation and normality. There was a weak, positive, statistically significant correlation between peer and family influence scores. To evaluate the impact of the correlation between the two independent variables, collinearity diagnostics were examined in the multiple regression analysis.

All three influence scores were non-normally distributed. Family and peer influence scores were moderately positively skewed, while the promotion influence score was moderately negatively skewed. Positively skewed distributions were subjected to a square root transformation to normalize the distributions, while the negatively skewed distribution was subjected to a squared term transformation. None of the transformations were effective in normalizing the distributions. Since normality could not be created for any of the influence scores and the deviation from normality was not severe for any of the scores, the original variables were maintained for the stepwise regression analysis.

Results and Discussion

The students in this study ranged in age from 12 to 16 years. The sample was almost equally split male/female (50.3% vs. 49.7%). Sixty-one percent of respondents indicated that they had gambled in the past year (Blotnicky, Das, Fitzgerald et al, 2008). Most of those who had gambled were males (75% vs. 47.3%). This is consistent with findings in the literature.

The students surveyed reported that some had family members who gambled. Overall, students had from none to five relatives who gambled. The highest frequency was reported for gambling mothers with 20.6% of responses. This was followed by a generic group of “other relatives” with 20.3%. Fathers were third in gambling frequency, with 17.7%. All of the remaining relative categories had 7.0% or fewer listings. The results are summarized in Table 1.

Table 1. Family Members who Gambled*

	Number	Percent
Mother	40	20.6
Father	34	17.7
Stepmother	1	0.3
Stepfather	3	1.7
Sister	7	3.8
Brother	13	7.0
Other relative	39	20.3

*Sample size = 192.

The family influence score was determined by summing up all of the relatives who respondents indicated were gambling. This additive score ranged from 0 to 5, with an average of 0.72, and a standard deviation of 1.11. This single numerical score allowed for all of the familial influencers to be included in a regression analysis as a single construct.

Two peer influence measures were used to determine the extent to which respondents were being influenced by peers who gambled. Students were asked if they had classmates who gambled, or other friends who gambled. Forty-four students (23.2%) reported having classmates who gambled, while 33 (17.2%) reported having other friends who gambled.

These two peer influences were added together to create a single peer influence score. The score ranged from 0 to 2, with an average of 0.40, and standard deviation of 0.69. A sample size of 192 responded to the peer influence questions and were included in the peer influence score. The creation of a single numerical score for peer influence allowed these factors to be included in a regression analysis as a single construct.

Four gambling promotion vehicles were included in the analysis. The extent to which students recalled having seen each type of gambling ad is shown in Table 2. The results showed that television and billboards were more likely to be recalled by the respondents, followed closely newspaper ads. Magazine ads were less likely to be seen by students, probably because they do not read magazines that contain gambling ads.

Table 2. Gambling Ad Exposure Among Youth*

	Number	Percent
Television ad	182	95.2
Newspaper ad	149	77.9
Magazine ad	111	57.8
Billboard	162	84.8

*Sample size = 192.

The promotion influence score was determined by summing up all of the advertising sources who respondents indicated they had been exposed to. This additive score ranged from 0 to 4, with an average of 3.16, and a standard deviation of 0.95. This single numerical score allowed for all advertising influencers to be included in a regression analysis as a single construct.

The correlation analysis between the three influence scores is shown in Table 3. The results reveal that there is a weak, positive statistically significant relationship between the peer and family influence scores ($r=.275$, $p=.000$, $n=192$). The correlations between the family influence score and the promotion influence score, and between the peer influence score and the promotion influence score, were not statistically significant.

Table 3. Pearson Correlation between Influence Scores*

	Family Influence Score	Peer Influence Score	Promotion Influence Score
Family Influence Score	X	.275**	-.055
Peer Influence Score		X	.097
Promotion Influence Score			X

*Sample size = 192. ** Statistically significant at the .01-level.

The regression analysis was completed using a stepwise approach. The three influence scores (family, peer and promotion) were regressed against whether or not the student had gambled. The gambling variable was dummy coded, so that a measure of zero meant that the student had not engaged in gambling behaviours, and a measure of one meant that they had gambled. The resulting model went through two iterations before finalizing the analysis.

The stepwise regression model was statistically significant ($F=24.774$, $df=1/187$, $p=.000$), but weak in explanatory power with an R^2 of only 11.7 and an adjusted R^2 of 11.2. Given that less than 12% of the variation in gambling behaviour was explained by the regression, it indicates that there are many other contributing factors to youth gambling. In the final analysis the only influence factor remaining in the model was peer influence, resulting in the following regression equation:

$$\text{Gambled} = .515 + .241(\text{Peer Influence Score}) \quad (1)$$

The family influence score was excluded from the analysis in Step 1, while the promotion influence score was eliminated from the analysis in Step 2. The variance inflation factors (VIF) ranged from 1.01 to 1.09. A VIF of 1.0 indicates a complete lack of collinearity. Therefore, the reasonable VIF measures show that the slight, positive correlation between peer and family influence scores did not cause a multicollinearity problem in the regression analysis. The analysis is shown in Table 4.

Table 4. Stepwise Regression Analysis*

Variable	Step 1		Step 2	
	Coefficient	t-statistic	Coefficient	t-statistic
Constant	.270	2.361**	.515	13.271***
Peer Influence Score	.230	4.776***	.241	4.977***
Promotion Influence Score	.079	2.277**		

*Sample size = 192. ** Statistically significant at the .05-level. ***Statistically significant at the .01-level.

These results are intriguing and they contradict the expectations of many critics who argue that any kind of promotion for products that can be individually or socially harmful should be regulated, particularly where youth may be impacted. The analysis does not mean that gambling promotion has no influence, but it does reveal that when considered alongside other predictors of gambling behaviour, it simply doesn't have enough power to make a major contribution. Given that gambling behaviour takes place within a broad and varied social milieu, promotional influences will always be subject to other factors that shape and direct human experience. This exploratory analysis provides evidence that when stacked up against role models and human interaction, promotion has little influence on such gambling behaviour.

Conclusions and Recommendations

Family and peer influences may be considered as “givens” when examining social influences on youth behaviour of all kinds, not just gambling behaviour. The problem with youth gambling in particular is that it can be extremely detrimental if it leads to long term social or family problems, or addiction. Gambling has been associated with many social and family ills, which is why there is a movement to reduce youth involvement in gambling activities. The move to facilitate change by criticizing the roles marketers play in shaping public opinion and cultural norms is not new. However, when it is related to potential harm to children and youth, the public pays attention. That is the situation that marketers have been facing when advertising anything that can be considered a social harm, such as tobacco, liquor, and gambling products.

While the relative influence of a jumble of promotional messages about gambling does have an effect, it appears that such influences are being mediated to some extent by other influencers. This should not be interpreted as giving free reign to marketers to advertise such products. Rather, marketers should be circumspect about what they promote, how they promote it, and who is likely to respond to the appeal.

There are a number of limitations to this research. The sample size of less than 200 Nova Scotia middle school students is relatively small. The sample size limitation prevented researchers from using more sophisticated multivariate research methods, such as logistic regression with multiple independent variables for various kinds of family, peer and marketing influences.

This research used a survey methodology. Given that surveys measure correlation and not causation, the resulting analysis provides food for thought, but stops short at delivering hard evidence of causality.

As previously described, there are limitations in the distribution of the independent variables in this analysis that could confound the regression approach. Also, some statisticians criticize the use of stepwise regression to test theoretical models, because the technique is built upon the data that is present. Using a stepwise method forces the technique to eliminate factors that could still have explanatory value. This is particularly true of the analysis done in this research. Therefore, it is important to consider this research exploratory and to look towards more rigorous future research to further test the hypotheses and related assumptions noted in this research.

The sample in this research focused only on middle school students. By enlarging the sample to recruit more high school students, researchers could collect information that would further qualify these results. Does marketing influence change with age? Do family and peer influences change with age? All of these factors are important considerations when dealing with problems caused by youth gambling, or when trying to develop a policy to educate youth about gambling. Therefore, further research is required to help develop policy decisions or to further engage in theory building around peer, family and advertising influences on youth gambling.

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Do We Know What We Think We Know? An Exploration of Online Social Network Users' Privacy Literacy¹

Online social networks have increased in popularity and users continue to share abundant information in these sites, despite reported privacy concerns. Although knowledge is recognized as impactful in consumer decision making, privacy knowledge has essentially been ignored in investigations of information disclosure on OSNs. As such, the purpose of this paper was to explore the privacy literacy of Canadian OSN users in terms of subjective and objective privacy knowledge. Exploratory results suggest some privacy literacy differences based upon age and gender and areas where privacy knowledge could be improved.

Introduction

Online social networks (OSNs) such as Facebook, Twitter and LinkedIn have gained worldwide acceptance and continue to grow. Approximately 20% of the global population is predicted to use a social networking site in 2012 and participation should reach 25% by 2014 (eMarketer, 2012). Facebook is clearly the dominant OSN globally, boasting over 845 million members at the time of its IPO in May 2012. In Canada, Facebook is not only the most dominant OSN, it is the most used website in the country, capturing the highest share of visits (Experian Hitwise, 2012). More than half of Canadians are members of an OSN and, among OSN users, almost all (95.2%) have Facebook accounts (Oliveira, 2012).

Online social networks are defined as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (Boyd and Ellison, 2007, 211). Clearly then, personal information disclosure is a requisite part of OSN participation. The amount of information disclosed in one’s personal profile is normally left to the discretion of the user, but personally identifiable information including the user’s name (or pseudonym), birthday (but not necessarily birth year), and email address are typically required. The discretionary elements in a personal profile might include information pertaining to education, employment, activities, interests, hobbies, relationship status, sexual orientation, birth year, or favourite quotes. Depending upon the website’s functionality, other data including private messages, public comments, photos, videos, tags, preferences, groups and behavioural data may be exchanged as well (Boyd and Ellison, 2007; Beye et al 2010). Further, depending upon the privacy controls offered by the OSN and one’s ability and choice to use such controls, the information shared can be viewed by OSN members’ friends,

¹ The author would like to thank Dr. Alan Wilson, Dr. Todd Boyle and Randy Delorey for the guidance and many helpful comments offered in preparation of this paper.

friends of friends, open to the public and/or collected and used by the OSN company and/or its corporate clients.

The immense popularity of OSNs has been driven by individuals' social motivations. Specifically, social capital (Pfeil, Arjan and Zaphiris, 2009; Steinfield, Ellison and Lampe, 2008; Valenzuela, Park and Kim, 2009), relationship maintenance, popularity, self-presentation, social surveillance and information exchange have been variously cited as motivations for participation in OSNs (Acquisti and Gross, 2006; Boyd, 2007; Hoadley et al 2010; Lee et al 2008; Livingstone, 2008; Subrahmanyam et al, 2008; Young, 2009). However, despite the many benefits sought, there are inherent risks in OSN participation including cyber-bullying, defamation, identity theft and general loss of privacy (Debatin, Lovejoy, Horn and Hughes, 2009; PureSight, 2011; Rashid, 2012). As Andrew Keen (2012) laments, "privacy – that condition essential to our happiness as human beings – is being dumped into the dustbin of history".

Individuals share abundant personal information in these 'permanent self-exhibition zones' (Keen, 2012) thereby potentially contributing to their own loss of privacy. Paradoxically, many Canadians reported having privacy concerns about the Internet (Statistics Canada, 2010) and a vast majority (88%) explicitly expressed privacy concerns about OSNs (Harris Decima, 2011). Although this privacy paradox (Norberg, Horne and Horne, 2007) has prompted many investigations into the privacy calculus that explains information disclosure (Brandimarte, Acquisti and Loewenstein, 2010; Dinev and Hart, 2006a; Dinev and Hart, 2006b; Li, Sarathy, and Xu, 2010; Krasnova and Veltri, 2010; Xu et al 2008), little research into what consumers actually know about privacy has been undertaken despite speculation that a lack of awareness might be contributing to voluminous information sharing in OSNs (Boyd, 2007; Buchanan et al 2007).

As it is well established that knowledge affects consumer decision making (Chi, 1983; Chartrand, 2005; Raju, Lonial and Mangold, 1995), it is logical to also include privacy knowledge in privacy calculus investigations. However, the impact of privacy knowledge on OSN information disclosure is a question beyond the scope of this investigation. The purpose of this paper was to first investigate what people actually know about privacy from a Canadian perspective in order to enrich understanding of an understudied topic relevant to other investigations of OSN participation. Specifically, descriptive statistics about what individuals objectively know about privacy, what they think they know about privacy and the calibration between these two constructs will be presented herein. An exploration of differences in privacy knowledge based upon demographic characteristics will also be provided.

Literature Review

Privacy Literacy

Consumers clearly possess privacy concerns, however, it is important to recognize that these attitudinal observations are 'only reliable and valid to the extent that consumers are knowledgeable and well-informed' about which they are concerned (Nowak and Phelps, 1992, 30). In the context of privacy, this knowledge may be referred to as 'privacy literacy', or 'the understanding that consumers have of the information landscape with which they interact and their responsibilities within that landscape (Langenderfer and Miyazaki, 2009, 383). Knowledge provides decision making control (Ajzen and Driver, 1991; Armitage and Conner, 1999; Awad and Krishnan, 2006; Chartrand, 2005) and affects individuals' behaviour (Buchanan et al 2007) which could be

thought to include information sharing in OSNs. As such, privacy literacy becomes an increasingly critical asset for consumers in an information landscape where the burden of privacy protection rests heavily in their hands (Langenderfer and Miyazaki, 2009; Nehf, 2007).

The concept of privacy literacy can be examined with constructs used within consumer knowledge literature. Essentially, consumer knowledge is comprised of subjective knowledge (SK) and objective knowledge (OK) (Alhabeeb, 2007; Brucks, 1985; Park and Lessig, 1981; Spreng, Divine and Page, 1990; Sujan, 1985). Subjective knowledge is what one thinks they know about something, or the confidence one has in their knowledge about a subject, whereas objective knowledge is the accuracy of one's knowledge – what the individual actually knows about the subject - and can be objectively measured. While SK and OK should be related in some way and have been shown to be correlated to varying degrees (Ellen, 1994; Carlson et al 2009, 2007; Moorman et al 2004; Park Mothersbaugh and Feick, 1994), it has also been concluded that they are distinct constructs that impact consumer behavior differently (Brucks 1985; Carlson et al 2009; Park et al, 1994) and as such, should be treated separately.

Subjective Knowledge and Privacy

Notwithstanding the attention placed upon understanding the role of SK and OK in consumer behaviour (Carlson et al 2009), little academic attention has been paid to these measures in the context of privacy. The significance of the relationship between privacy knowledge and privacy concern was suggested when Malhotra et al (2004) concluded that privacy awareness was one dimension of internet users' privacy concern. However, the 'awareness' measured by Malhotra et al was neither SK nor OK, but rather a measure of the perceived importance one places on corporate information handling transparency. Likewise, privacy 'awareness' was again used to represent the value consumers placed upon corporate information transparency by Awad and Krishnan (2006), and used to represent SK of information handling transparency by Facebook by Krasnova and Veltri (2010). Dinev and Hart (2006b) collected subjective self-assessments of social awareness as an indicator for privacy awareness, but SK about privacy was not measured explicitly. Notably, two studies did effectively measure privacy SK as it has been explained herein, although it was not referred to as such (Lawler, 2012; Xu et al 2008). Lawler (2012) noted poor privacy confidence (SK) among study participants whereas Xu et al (2008) did not report nor draw conclusions about SK levels.

Various public opinion polls do shed light on what consumers think they know about privacy. In most of this research, consumers are asked to indicate how much they know about website privacy policies, privacy settings, privacy regulations or even rate their self-efficacy in protecting their privacy. Together, these measures of individuals' knowledge beliefs provide an indication of the SK component of privacy literacy, but whether SK is high or low among OSN users remains unclear.

As one indication of high SK, it was reported that more Canadians (43%) than not (31%) felt confident they had enough information to know how new technologies might affect their personal privacy (Harris Decima, 2011). Further, eight in ten people in the UK expressed high levels of confidence as an Internet user, another two thirds felt confident about active content generation online (Ofcom, 2008) and only 21% believed they did not possess the requisite skills to protect their privacy online (Office of National Statistics, 2011). Conversely, indications of low SK were found in a U.S. study reporting a majority (60%) of respondents admitted their own lack of confi-

dence in understanding who had access to their personal information via friends' networks (Business Wire 2010). Similarly, a majority of Canadians felt that explanations about what could be done with their personal information were vague (Harris Decima, 2011). Individuals in the U.K. also cited difficulties understanding and manipulating privacy settings in OSNs (Ofcom, 2008). And, of particular relevance, most Canadians felt their knowledge of personal privacy rights under the laws protecting personal information was either poor (36%) or neutral (33%) (Harris Decima, 2011).

Given the conflicting suggestions cited here, further exploration into subjective privacy knowledge was clearly warranted and thus gave rise to the first research question of this study:

RQ1: How much do OSN users think they know about privacy?

Objective Knowledge and Privacy

In 2002, Cavoukian and Hamilton remarked that 'many consumers are in the dark with respect to how some marketers use their data' (207). A decade later, there is a sense that people remain unaware that their behaviour on OSNs could be putting them at risk (Ofcom, 2008; Office of the Privacy Commissioner of Canada, 2011). Yet, as with subjective privacy knowledge, there are few empirical studies that assess what people know about their personal information privacy.

Early investigation into consumers' objective privacy knowledge tended to be focused within direct marketing contexts (Culnan, 1995; Foxman and Kilcoyne, 1993; Graeff and Harmon, 2002; Nowak and Phelps, 1992; Milne and Rohm, 2000) in which it was revealed that consumer OK of marketing practices pertaining to the acquisition and use of personal information and strategies available for opting out of contact were generally low. (Although, Dommeyer and Gross (2003) did find awareness of opt-out strategies to be high.) In online contexts, OK about website privacy policies (Acquisti and Grossklags, 2005; Hoofnagle and King, 2008; Turow et al 2005) and technical and legal privacy protections (Acquisti and Grossklags, 2005) was similarly revealed to be low among U.S. respondents. In fact, Hoofnagle et al (2010) concluded that the majority of Americans were 'privacy illiterate'. The only available explicit empirical indication of objective privacy knowledge among Canadians revealed that just three in ten Canadians were aware of a federal institution that helps them with their privacy and protection of their personal information (Harris Decima, 2011).

Despite the shortage of precise measures of OK, there are other indications that consumer privacy OK is low. First, possibly because the length and complexity of many online privacy policies requires patience most consumers do not have (Krashinsky and El Akkad, 2010), people do not read them (BusinessWire, 2010; Lawler, Molluzzo and Doshi, 2012; Winkler, 2001) or fail to read them thoroughly (Office of National Statistics 2011). As a result, many people agree to the policy terms without genuinely knowing to what they have consented. To that end, Facebook users have regularly reported poor understanding of that site's privacy policies (Acquisti and Gross, 2006; Govani and Pashley, 2005; Gross and Acquisti, 2005) and erroneous assumptions (Ofcom, 2008) and clear misinterpretations (Turow, Hennessey and Bleakley, 2008) about the scope of privacy policies have been observed. Second, most OSN users neglect to make use of available privacy settings (Gjoka et al 2011; Govani and Pashley, 2005). And, even in instances where respondents claimed to understand the privacy policies of Facebook and make use of the privacy settings, researchers speculated that the weak criteria many use to accept 'friends' into their net-

works (which in turn allows information to be shared beyond one's assumed control) further signified poor privacy knowledge accuracy (OK) (Debatin et al 2009).

It appeared from these insights that privacy OK of OSN users should be low, however, it remained unclear what constituted 'low' or 'poor' awareness and specific observations about what OSN users accurately knew about privacy was notably absent from the literature. As the purpose of this study was exploratory, the second research question aimed to address some of these literature gaps and was expressed as follows:

RQ2: What do OSN users accurately know about privacy?

Calibration of Privacy Knowledge

Calibration between SK and OK is an important consideration in consumer knowledge and critical to decision making because it allows consumers to cope with situations of incomplete and errorful information (Alba and Hutchinson, 2000). It is meant to represent the agreement between objective and subjective knowledge assessments of the validity of information, but does not refer to the accuracy of information itself. When there is lack of agreement between OK and SK, a miscalibration is noted. If the SK is higher than the OK, a consumer is referred to as overconfident, while if SK is lower than OK, the consumer is classified as underconfident. Empirical contexts are rarely expected to achieve a high level of calibration, and some degree of overconfidence or under-confidence is more likely to occur.

Within the privacy literature there are suggestions of miscalibration among OSN users (Boyd, 2007; Debatin et al 2009; Livingstone 2008; Youn 2009) though few explicit investigations exist (excepting Acquisti & Grossklags 2005; Acquisti and Gross 2006). In all instances, researchers investigated samples of either college students or adolescents and surmised that individuals had a greater confidence in their privacy knowledge than their objective knowledge might reveal, thus suggesting that first, a miscalibration in privacy knowledge likely existed and second, the miscalibration was in the direction of overconfidence.

Thus, research questions consistent with these suggestions were:

RQ3a: Is there a miscalibration between what OSN users think they know (SK) and that they accurately know (OK)?

RQ3b: If a miscalibration among OSN users exists, is it in the direction of overconfidence or underconfidence?

Impact of Demographic Characteristics

Observations pertaining to consumer knowledge have typically been derived from samples of younger individuals and group differences rarely distinguished. While that may have been appropriate when early OSN users shared common demographic characteristics including age and socioeconomic status, the virtual ubiquity of OSN usage today suggests that demographic variables need also be examined with respect to privacy knowledge. Review of relevant literature suggests that age and gender are areas where variations might be expected to occur.

Age. In offline consumer research, age was found to be positively related to OK (Carlson et al, 2007). Online, privacy concerns have alternatively been found to vary with age (Zukowski and Brown, 2007) and show no variation (Hoofnagle, King, Li and Turow 2010). Younger individuals

have a familiarity with the Internet and OSNs that might increase their confidence in their knowledge (SK) of privacy policies, privacy risks and/or privacy protection abilities (Youn 2009). But contradictory reports show younger people being more (Harris Decima, 2011) and less (Office of National Statistics, 2011) likely to read privacy policies than their older counterparts. Further, in one study, 18-24 year olds were shown to objectively know less about online privacy regulations than their older counterparts (Hoofnagle, King, Li and Turow, 2010) and in another shown to have lower SK (CBC, 2011).

Gender. Gender differences have also been found in offline privacy research (Dommeyer and Gross, 2003; Sheehan 1999). Women have been observed to possess higher levels of privacy concern (Dommeyer and Gross, 2003), read more privacy policies and have a better understanding of them (Harris Decima, 2011), and engage in use more privacy settings in OSNs (Madden, 2012) than their male counterparts. However, women are also less confident in their online self-efficacy compared with men (Lawler et al 2012).

Again, with few concrete consistent conclusions about variations in OK, SK or Calibration based upon demographic characteristics, formulation of well supported hypotheses was not possible. The lack of stable findings based upon age and gender clearly justified further exploration of these variables on privacy literacy which led to the third research question posed in this study:

RQ4: Are there differences in OSN users' privacy literacy based upon age and/or gender?

Methodology

Data Collection

An online survey, conducted in Fall 2011, was administered using an initial convenience sample with a snowball technique. These non-probability sampling techniques were considered appropriate because data is notably difficult to obtain in the context of OSNs (Debatin et al 2009), because self-selection mechanisms make random sampling difficult (Riffe, Lacy & Fico, 1998) and these techniques proved most cost effective in achieving a large sample. Due to the nature of the snowball technique, it was impossible to discern the response rate as the number of people contacted was unknown and was thus not reported.

An email invitation was sent to 719 undergraduate business students at a small Canadian university with two subsequent reminder emails. A total of 183 completed surveys were returned through this mechanism (71.5% completion rate) with a 35.6% initial response rate and a 25.5% effective response rate. A total of 475 email invitations were circulated to this researcher's Facebook and LinkedIn contact lists. Contacts were requested to share the survey link among friends and colleagues. One reminder email was circulated to these contacts and Facebook status updates were used as additional reminders. Through this mechanism, 539 completed questionnaires were collected (69.4% completion rate). To attract additional respondents, a group of online advertisements limited to Canadians between the ages of 18-64 were also created and placed on Google and two popular OSNs. Ninety-one completed surveys were returned (30.7% completion rate). Using the snowball technique, all survey respondents were requested to provide the email addresses of individuals they felt would be interested in completing the survey. Via this mechanism, 150 usable email addresses were acquired. Email invitations distributed to this group resulted in 28 completed surveys being returned (71.8% completion rate). A random prize draw for one iPad 2 was offered as incentive.

Sample

Three screening questions were used to ensure responses were only collected from adults between the ages of 18 and 64, who were permanent Canadian residents with online social network experience. After removing observations with missing information, a total sample size of 825 was achieved.

Consistent with OSN memberships, the sample was more heavily female (65.7%) and somewhat young (18 – 24 yrs = 32.5%; 25 – 34 yrs = 21.3%; 35 – 44 yrs = 25.7%; 45 – 54 yrs. = 11.6%; 55 – 64 years = 8.8%). A vast majority (91.2%) of respondents used Facebook as their favoured OSN and were heavy OSN users (85.5%), logging into their accounts at least once a day, with most (70.1%) claiming to visit their favoured OSN more than once per day. The majority of respondents were Caucasian (90.8%) whose first language was English (93.0%) and the majority of respondents lived in Nova Scotia (57%). A small proportion of respondents (1.7%) did not complete high school, 26% reported high school as the highest level of education achieved, 17.3% completed college, 35.3% held Bachelor's degrees, 10.9% held Master's degrees, 2.8% had doctoral degrees, and 5.4% declined to provide educational attainment. Total household income under \$20,000 was reported by 11.5% of respondents, 11.5% reported \$20,000 - \$39,999, 14.7% were in the \$40,000 - \$59,999 range, 13.1% reported \$60,000 - \$79,999, 11.6% were in the range of \$80,000 - \$99,000, 23.3% had household incomes above \$100,000 and 14.3% declined to provide this information. Most respondents connected to the Internet via more than one device (81.7%), with approximately one quarter (26.4%) of the sample using four or more devices.

Measures

Subjective knowledge (SK). The SK scale consisted of three items modified from Carlson et al (2007) to reflect the context of privacy. On a 7-point Likert scale, respondents rated their perceived subjective privacy knowledge to three questions: 'Compared with most people you know, how would you rate your knowledge about how organizations collect and manage your personal information?' (1=One of the least knowledgeable to 7 = One of the most knowledgeable); 'In general, I am quite knowledgeable about how organizations collect and manage my personal information.' (1 = Strongly Disagree to 7 = Strongly Agree); and 'I am quite knowledgeable about how the information I provide in my online social network is collected and managed by companies.' (1 = Strongly Disagree to 7 = Strongly Agree). An SK score was computed as the average of the three subjective knowledge variables (min = 1, max = 7). To prevent bias, SK items were administered before OK items. The scale was determined to be internally consistent as Chronbach's α ($\alpha = 0.855$) exceeded the acceptable minimum of 0.7 (Nunnally, 1978).

Objective knowledge (OK). The OK measure was comprised of 10 True/False questions constructed from a privacy quiz posted on the website of the Office of the Privacy Commissioner (OPC) of Canada. Eleven unique questions were extracted from the OPC quiz, two were deleted and a new question was created from the answer feedback offered on the OPC original quiz. Questions were subsequently modified into a consistent true/false/don't know answer format. The quiz was determined to be internally consistent as Chronbach's α ($\alpha = 0.789$) exceeded the acceptable minimum of 0.7 (Nunnally, 1978). Correct answers on the privacy quiz were summed in one test score variable to provide an OK measure ranging from 0-10.

Calibration. Calibration scores were not directly observed, but instead calculated as the difference between SK and OK. As different scales were employed for the base measures, conversion of OK and SK values were required to enable comparison. The lowest SK score possible, reflecting a perfect lack of subjective knowledge, was 1 whereas the lowest OK score was 0. The calibration measure was thus calculated by first recoding SK scores to a range from 0-6, OK scores were subsequently converted to a scale ranging from 0 to 6 ($\text{test score}/10*6$) and the converted OK was then subtracted from the converted SK.

Results

Subjective Knowledge

To answer RQ1, a review of SK descriptive statistics revealed that respondents perceived their knowledge about personal information privacy to be neutral ($M = 3.99$, $SD = 1.28$). Examination of frequency distributions revealed that the majority of respondents had either low SK (41% had SK scores between 1 and 3) or neutral SK (33% had SK scores = 4). Only 26% rated their knowledge at the higher end of the scale (scores of 5, 6 or 7). These results revealed that, for the sample, SK was not high.

Objective Knowledge

Descriptive statistics relative to RQ2 were also examined. The average score on the OK test was $M = 4.94$ ($SD = 2.35$). Reasoning that test grades of 50% or more are often considered a passing grade in academic environments, the same criterion was applied to respondents' OK scores. As such, a majority of respondents (62.2%) passed the OK test. Of the 37.8% of respondents who failed the quiz, 6.7% ($N=55$) achieved scores of 0, indicating a complete lack of accurate OK. Four percent of respondents ($N=33$) achieved a score of 1, 5% ($N=41$) scored 2, 9.1% ($N=75$) scored 3, and 13.1% ($N=108$) answered four of ten questions correctly. At the opposite end of the spectrum, only 0.6% ($N=5$) achieved a score of 10, indicating perfectly accurate privacy OK. A small percentage (3.3%, $N=28$) scored 9, 9.8% ($N=81$) scored 8, 14.3% scored 7 ($N=115$), and 16.2% ($N=134$) scored 6. The largest percentage of the sample (18.1%) answered exactly half of the questions correctly.

Upon inspection of individual quiz questions, it was revealed that there were certain items that many respondents were aware about, but others that demonstrated a very low level of objective knowledge among the collective sample. As shown in Table 1, most respondents knew what constituted a privacy breach (74.8%), were aware that one's Social Insurance Number cannot be collected by all organizations with which one interacts (71.9%) and recognised that law enforcement officials have the ability to access one's personal information held with organisations without consent (63.5%). Slightly more than half of respondents were aware that they may complain to the Office of the Privacy Commissioner when denied access to their personal information (57.5%) and were familiar with the disclosure procedure associated with recorded telephone calls (56.4%). However, the majority of respondents answered five questions incorrectly. Generally speaking, respondents were unfamiliar with the general areas of personal information coverage offered by PIPEDA (Q4), the protections associated with video surveillance (Q6) and photocopying personally identifiable documentation (Q3), and the particulars of informed consent (Q1 and Q2).

Other notable results from the OK quiz were the instances in which respondents selected ‘Don’t Know’ as an answer. Providing an option to admit not knowing an answer should have prevented the likelihood of respondent guessing. As such, correct answers should have more closely reflected genuine accuracy of OK while incorrect answers and admissions of ignorance combined should have reflected authentic lack of knowledge. From these results, a majority of respondents (57.2%) were observed to admit not knowing about video surveillance protections under PIPEDA (Q6). Other questions for which the largest proportions of the sample not knowing answers were observed included: Q4 (47.8%) pertaining to the scope of PIPEDA, Q3 (37.7%) pertaining to photocopying personally identifiable documentation, and Q8 (34.9%) which asked about the proper privacy complaint channel. Further, sizeable proportions of respondents demonstrated clear inaccuracy in responses to Q1 (47.7% incorrect), Q2 (41.2% incorrect), Q3 (27.6% incorrect) and Q10 (26.4% incorrect).

Table 1. Objective Knowledge Scores by Question

Correct Response (%N)	‘Don’t Know’ (%N)	Question (Correct Answer)
25.9%	26.4%	1. To get your permission to capture your personal information, an organization only needs to tell you the purposes for which the information will be used. (False)
33.8%	25.0%	2. Organizations can always refuse to supply a product or service if you won’t give permission to the collection, use or disclosure of your personal information. (False)
34.7%	37.7%	3. If an organization is required by law to record an identity document number, like a driver’s license number, the document should always be photocopied by the organization. (False)
43.6%	47.8%	4. Canada’s Personal Information Protection and Electronics Documents Act (PIPEDA) covers the collection, use or disclosure of personal information by organizations in the course of commercial activity. (True)
71.9%	16.4%	5. All Canadian organizations can collect your Social Insurance Number so they can identify you. (False)
32.0%	57.2%	6. An organization, which is subject to PIPEDA, uses overt video surveillance for justified security and crime prevention reasons but does not record any images. Since no images are recorded, compliance with PIPEDA is not an issue. (False)
74.8%	19.3%	7. A privacy breach has occurred when there is unauthorized access to, or collection, use, or disclosure of personal information. (True)
57.5%	34.9%	8. An individual can make a complaint to the Office of the Privacy Commissioner of Canada against an organization if an organization denies them access to their personal information. (True)
63.5%	24.2%	9. Under certain circumstances, an organization can disclose their customer’s personal information to law enforcement officials without their customer’s consent. (True)
56.4%	17.5%	10. When recording customer telephone calls, organizations must inform the individual that the call may be recorded but not the purposes for which the information will be used. (True)

Calibration

Calibration of privacy knowledge (RQ3a and RQ3b) was also assessed via examination of descriptive statistics. Recall that a Calibration above zero reflected one's overconfidence in privacy literacy and measures below zero reflected underconfidence in the same. Descriptive statistics showed Calibration ranged from a minimum of -4.2 to a maximum of 5.3, with 96% (N= 795) miscalibrating privacy knowledge, however the sample mean ($M = 0.024$, $SD = 1.73$) suggested that privacy literacy was essentially calibrated for the entire sample. Frequency distributions of Calibration revealed that an approximately equal proportion of respondents had calibration scores below zero (48.8%, $N = 403$) and above zero (47.5%, $N = 392$), while 3.6% ($N=30$) had perfectly calibrated privacy literacy. These results suggest that miscalibration of privacy knowledge clearly occurred, but was neither consistently optimistic nor pessimistic.

Differences Based upon Demographic Characteristics

To explore whether group differences in privacy literacy existed based upon demographic characteristics (RQ4), a two-way between subjects multivariate analysis of variance (MANOVA) was conducted on three dependent variables: objective privacy knowledge (OK), subjective privacy knowledge (SK) and calibration using SPSS Version 19. The independent variables were respondent age and gender.

No statistical assumption violations were noted in the present data. Because multivariate normality is difficult to assess, normality of the dependent variables was used to indicate multivariate normality (Field 2005; Hair et al 2010) and was confirmed via visual inspection of Normal Q-Q plots. Sufficient correlation between dependent variables was established via a significant Bartlett's test of sphericity (approximate chi-square = 11124.427, $p < 0.000$) and Pearson correlations which revealed a statistically significant negative correlation between OK and Calibration ($r(823) = -.685$, $p < .001$), and statistically significant positive correlations between SK and Calibration ($r(823) = .597$, $p < .001$) and OK and SK ($r(823) = .176$, $p < .001$). As the minimum cell size in the data was $n=23$, the data exceeded the minimum cell size threshold of 20 suggested by Hair et al (2010). A statistically nonsignificant Box's M test ($F(54, 138380) = 69.94$, $p = 0.09$) indicated equality of variance-covariance matrices of the dependent variables across levels of independent variables.

Given unequal group sizes, Pillai's Trace test statistic is notably more robust (Hair et al 2010; Field 2005; Tabachnick & Fidell 2007) and was therefore used to assess multivariate main effects in the present study. Privacy literacy was significantly affected by the main effects of gender (Pillai's trace = 0.023, $F(3, 813) = 6.327$, $p < .001$, partial $\eta^2 = 0.023$) and age (Pillai's trace = 0.05, $F(12, 2445) = 3.448$, $p < .001$, partial $\eta^2 = 0.017$). The multivariate interaction effect of Gender x Age was not statistically significant, $F < 1.0$.

Univariate ANOVAs, commonly recommended follow-up tests to MANOVA (Hair et al 2010; Meyers 2006), were conducted on each dependent measure separately to determine the origin of these main effects. Levene's test confirmed homogeneity of variance for both the subjective knowledge ($F(9,815) = 1.814$, $p < 0.062$) and calibration measures ($F(9,815) = 1.836$, $p < 0.058$), however, the result for the objective knowledge measure was significant ($F(9.815) = 1.938$, $p < 0.044$) indicating heterogeneity of variance. While this assumption violation for the OK measure

need be noted, Hair et al (2010) suggest that with sufficient sample sizes and an observed violation on only one dependent variable, as were both observed in this data, analysis can proceed. However, given that unequal group sizes coupled with violations of the homogeneity assumption can have serious consequences and the Welch statistic is capable of handling such cases while retaining power (Field 2005), the Welch statistic was analyzed for univariate ANOVAS. A Bonferroni correction of $\alpha = 0.016$ ($\alpha = 0.05/3$) was used to assess significance (Hair et al 2010; Meyers 2006). As no interaction effects were observed between independent variables in the multivariate main effects, univariate results are not reported for Gender x Age.

From Table 2, we can see that gender significantly affected SK ($F(1,511) = 22.668, p < 0.001, \eta^2 = 0.029$) and calibration ($F(1,507) = 13.817, p < 0.001, \eta^2 = 0.018$) but not objective knowledge ($F < 1.0$). An inspection of the gender group means showed that male respondents had a significantly higher subjective knowledge ($M = 4.29, SD = 1.37$) than female respondents ($M = 3.83, SE = 1.20$) and male respondents had a significantly more optimistic calibration than women ($M = 0.345, SE = 1.87$ vs. $M = -0.144, SE = 1.63$). Age significantly affected all privacy literacy measures – objective knowledge ($F(4,303) = 3.464, p = 0.009, \eta^2 = .014$), subjective knowledge ($F(4, 291) = 5.558, p < 0.000, \eta^2 = 0.026$) and calibration ($F(4, 297) = 10.229, p < 0.000, \eta^2 = 0.037$). These results should be interpreted with caution as η^2 explained only a small proportion of the variance in all instances (Ferguson 2009).

Table 2. Multivariate and Univariate Analyses of Variance for Privacy Literacy

	Multivariate		Univariate	
	F ^a	OK ^b	SK ^b	CALIBRATION ^b
Gender	6.327***	0.082	22.668***	13.817***
Age	3.448***	3.464*	5.558***	10.229***
Gender x Age	0.842			

Note: Multivariate F-ratios were generated from Pillai's trace criterion; Univariate F ratios are Welch statistics.

a. Multivariate df = 3, 813 (gender), 12, 2445 (age)

b. Univariate df = 1, 569 (gender OK), 1,511 (gender SK), 1, 507 (gender calibration) 4, 303 (age OK), 4, 291 (age SK), 4, 297 (age calibration)

** $p < 0.01$, *** $p < 0.001$

Given unequal group sizes in the sample, heterogeneity of variance noted in the OK measure and the desire to retain power in the analysis, the Games Howell statistic and the more conservative Tamhane's T2 are recommended post hoc tests (Field 2005; Meyers 2006). As such, both statistics were analyzed for age against the dependent variables (see Table 3). Post hoc tests suggested that the oldest respondents had significantly lower privacy SK scores ($M = 3.42, SD = 1.240$) than each of the youngest three age groups (18-24 years $M = 4.08, SD = 1.295$; 25 – 34 years $M = 4.07, SE = 1.290$; 35-44 years $M = 4.10, SE = 1.223$). Further, the oldest age group had significantly different privacy literacy calibration scores ($M = -0.838, SE = 1.335$) than the youngest three age groups (18-24 years $M = 0.260, SE = 1.836$; 25 – 34 years $M = 0.265, SE = 1.657$; 35-44 years $M = -0.027, SE = 1.595$) and the miscalibration for the oldest group was in the direction of under-confidence. No statistically significant differences were found for OK based upon age.

Discussion

This study examined online social network users' subjective and objective privacy knowledge, calibration of privacy knowledge and the differences observed in privacy literacy based upon age and gender groups within a sample of adult Canadian online social network users.

Table 3. Mean Scores and Standard Deviations for OK, SK and Calibration by Age

Age	N	OK		SK		CALIBRATION	
		Mean	SD	Mean	SD	Mean	SD
18-24	268	4.71 ^b	2.426	4.08 ^b	1.295	0.260 ^b	1.836
25-34	176	4.68 ^b	2.426	4.07 ^b	1.290	0.265 ^b	1.657
35-44	212	5.21	2.321	4.10 ^b	1.223	-0.027 ^b	1.595
45-54	96	5.10	2.404	3.75	1.251	-0.309	1.860
55-64	73	5.44 ^a	1.658	3.42 ^a	1.240	-0.838 ^a	1.335
TOTAL	825	4.94	2.349	3.99	1.280	0.024	1.729

Note: Means with different superscripted letters were significantly different at the 0.05 level by means of Games-Howell and Tamhane's T2 post hoc tests.

Descriptive statistics revealed that while SK for the sample was approximately neutral, most respondents were not confident in their privacy knowledge, although there was a reasonable proportion of the sample that considered their privacy knowledge to be better than average. Analysis of group differences for SK revealed that those 55-64 years of age thought they knew significantly less than each of the youngest three age groups. It is possible the age differences observed in SK could be a result of experience with OSNs and other electronic communication. Younger people, as early adopters of OSNs, have had more experience in these environments and potentially more exposure to the extant privacy policies and practices, thus may feel more confident in what they know about privacy. However, naivety with requests for sensitive information in other environments (i.e. medical or financial) or with risk assessments of information requests could conceivably be contributing to higher confidence in privacy knowledge among young adults. Conversely, it is possible that with age comes exposure to a greater number and variety of information requests in a range of contexts that could be reinforcing lower levels of perceived confidence among the oldest group of respondents. Thus, one avenue of future research includes an investigation into the effects of experience on privacy literacy.

This study also revealed that men thought they knew significantly more about privacy than women. As women were noted to be more likely to read privacy policies and implement privacy protections, intuitively, they should feel more confident in their privacy knowledge. However, *reading* privacy policies is not the same as *understanding* privacy policies. Exposure to lengthy, vague privacy policies may create confusion in the consumer's mind, thus reducing confidence in one's knowledge or reinforcing an already low SK. Similarly, utilizing privacy enhancing technologies is not necessarily the same as self-efficacy - the belief in one's ability to use them properly. It is possible to conceive that low privacy SK might even encourage preferences for privacy enhancing technologies because if one does not believe they know much about privacy they might be more apt to employ available means of protecting their personal information.

Analysis of OK showed that the majority of respondents had sufficient scores on the privacy quiz to have been considered to pass the test. However, this was based upon achievement of a score of 50% and that may be a low standard especially given that individual OK test questions revealed a number of instances where objective privacy knowledge was weak.

In Canada, all businesses that collect, use and disseminate personal information are governed by the *Personal Information Protection and Electronic Documents Act* (PIPEDA). PIPEDA should be familiar to Canadians as it has been in place since 2000, applies to all personal information exchange interactions with business organizations (not just OSNs), and there is some responsibility on the part of the consumer to recognize and report violations to the Office of the Privacy Commissioner of Canada (OPC). Although most businesses employ their own privacy policies, they are ultimately required to comply with PIPEDA. Presumably, then, an individual with a general knowledge of PIPEDA could be considered to be privacy literate. With this in mind, the finding that 37.8% of respondents failed the quiz of PIPEDA derived questions and another 18% knew 'just enough' (i.e. 50%) is cause for concern.

Specifically, respondents were unfamiliar with the general areas of personal information coverage offered by PIPEDA, the protections associated with video surveillance and photocopying personally identifiable documentation, and the particulars of informed consent. Poor awareness in these areas suggests the possibility that individuals could be unknowingly making themselves susceptible to privacy invasions and as a result, violations may be going unreported. To illustrate, consider that a business requests to make a photocopy of a consumer's driver's license but does not require all of the information that appears on the licence. As this request violates PIPEDA, the consumer does not need to provide the licence for copying. If the individual was among the 65% of respondents that did not know that the information was erroneously requested by the institution and/or among the 66% of respondents who erroneously believed that a business could always refuse service if requests for personal information were denied, the individual will provide the information. Further, as this individual would not be aware that a violation occurred, they would not know to report the incident to the Office of the Privacy Commissioner.

Inspection of Calibration results revealed that most people did not know what they thought they knew about privacy as evidenced by the high incidence of privacy knowledge miscalibration (96% of N=825). Interestingly, the miscalibration observed in this study appeared equally as underconfidence and overconfidence for the entire sample. Those 55-64 years of age were found to have significantly different knowledge calibration than each of the youngest three age groups. The oldest group was the most underconfident, the youngest two age segments (18-34 years inclusive) had the greatest overconfidence and while the 35 – 44 year age group was slightly underconfident, it was significantly less so than the oldest group. Again, these findings may be due to experience, thus future investigations should attempt to account for this effect. Similarly, the gender differences observed in Calibration mirror those reported for subjective knowledge and can be explained by subjective knowledge variations as no gender differences were observed with objective knowledge. Men were found to be overconfident, whereas women were found to be underconfident and the differences between the groups was significant.

The poor privacy literacy observed in this study coupled with potential negative consequences signifies a need for improved privacy knowledge. To ensure individuals are aware of their privacy rights, additional educational initiatives should be undertaken by government. However, as the poor OK test performance recorded in this study was not isolated to any one demographic seg-

ment, any educational initiatives undertaken by the OPC should be universally applied. Knowing that people generally do not possess high levels of privacy literacy with respect to omnibus privacy legislation (PIPEDA) might also signify an interest for businesses to examine the privacy literacy of proprietary privacy policies and consider their responsibilities in light of results.

Limitations

The findings of this study should be interpreted with caution due to important limitations. First, the non-probability sampling techniques employed prevent generalization of results to the population of OSN users and the snowball technique introduced further bias by collecting responses from individuals that were likely to share similar traits (Johnson and Sabin, 2010). However, the sample did appear to represent OSN users reasonably well, as these sites are dominated by women (Ipsos Reid 2009; Dewing, 2010) and OSN users tend to be younger, more affluent, and more highly educated than non-users (Heartland Monitor Poll, 2012). Second, the calculation employed to determine Calibration should be improved in future investigations. While the measure used herein permitted initial exploration of the gap between OK and SK, there is room for refinement. Third, although the data met the assumption of MANOVA requiring correlation of dependent variables, OK and SK were correlated only weakly ($r = .176$, $R^2 = .031$). While there existed a theoretical basis for the correlation of OK with SK and consumer knowledge literature indicated that correlations between the measures had ranged from very weak to strong (Carlson et al 2009), the weak correlation observed in the present study might have influenced the reliability of MANOVA results. Finally, the effect size of all MANOVA and ANOVA results were small, suggesting the need for further caution in interpreting results.

Conclusion

This study provided insight into the privacy knowledge of adult Canadian online social network users – an area of investigation previously not well examined. Results suggest that most people did not know what they thought they knew about privacy, and that both overconfidence and underconfidence were equally observed among all respondents. Demographic differences in privacy knowledge were also observed. Of particular note, men were more confident in their privacy knowledge compared with women and tended to think they knew more about privacy than objective assessments confirmed. Also, the oldest age group was significantly less confident than the youngest groups of respondents. While the oldest respondents knew more about privacy than they gave themselves credit for knowing, the youngest groups of OSN users exhibited overconfident knowledge assessments. These results suggest that experience might be contributing to the age differences observed, thus future research should assess the effects of experience on privacy literacy.

While the majority of respondents demonstrated adequate objective knowledge of privacy on a collective level, it was subsequently shown that objective privacy knowledge was actually not high. In many instances inaccurate answers and admissions of ignorance highlighted areas where consumers' lack of knowledge makes them potentially susceptible to privacy violations. Therefore, increased consumer awareness is required and attempts to improve objective knowledge among OSN users should be made. However, because objective knowledge results did not differ among age or gender groups, efforts to develop privacy knowledge need to be universally applied.

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University Culture and Risk Propensity

This paper discusses the turbulent Canadian university environment that seems to be oriented toward change, and juxtaposes this with university culture that is oriented toward the status quo. The risk propensity of universities is explored, theorizing that university organizational culture is not inclined to undertake risky adventures. If the external environment continues to call for a more business-like approach and greater risk-taking, efforts will be required to foster an organizational culture that rewards, or at least does not discourage, change. This paper may be seen as both a “wake-up call” for university management and as an outline for future research.

Introduction

The 2012 Atlantic Schools of Business Conference (*Business as Usual?*) calls for papers on doing business in turbulent times. This theme resonates strongly with the situation facing Canadian universities. However, as explained below, the discourse of turbulent change is hardly new. Notions of culture and change have been a practitioner concern of university management across Canada and a recurring topic in the academic literature. The population of higher education institutions in Canada consists of 95 public and private not-for-profit universities and degree granting colleges (AUCC 2011). University organizations have considerable scope and size. Canadian universities serve more than 1.3 million students in various education programs and directly employ over 272,000 people; nationally, universities are a \$30 billion enterprise – larger than the pulp and paper industry, the oil and gas extraction industry, or the utilities sector (AUCC 2011). Across Canada, university activities include academic and non-credit instruction, research, endowments, capital construction, numerous business enterprises such as bookstores and food outlets, libraries, medical facilities, recreational and cultural facilities. The diversity makes it difficult to propose a single culture for the industry, or even for individual universities. This is a constant threat to the external validity of research on university culture and change.

The 2009 conference theme of the Canadian Association of University Business Officers (CAUBO) was *Embracing Cultures*. The 2010 CAUBO conference theme expanded on the idea of culture and the turbulent environment. The conference plenary speaker stated, “The financial challenges we face are unprecedented in Canada” and delegates addressed the “great divide in university cultures” – referring to administration culture and academic culture (CAUBO 2010). This preoccupation with culture and change is also evident in the 2012 CAUBO conference entitled *Risky Business*, which characterized university operations as a tightrope walk that requires a safety net. The idea of university cultural change in Canada has recently included motivation to be more entrepreneurial and business-like. Providers of operating and capital funds have led this call for change. Government has placed conditions upon the substantial annual grants provided to universities and the provincial political agenda seems to have shifted to a skills-based, job-generating mentality. Also, governments facing their own structural financial

deficits have attempted to reduce their investments in post-secondary education. Even philanthropic donors, another major source of university funding, are demanding change – endowment funds increasingly consist of financial contributions with restrictions specified by the donor. Corporate donations now mostly come with quid pro quo considerations, and a requirement for demonstrating value to the donor. Other changes imposed by the external environment include significant opportunities and threats such as shaken consumer confidence exposing university affordability, and competitive pressures such as the increase in on-line academic program offerings (indeed, entire virtual universities) and the creation of private profit-oriented universities. All of these pressures from the external environment are forcing universities to become more business-like and accepting of risk. However, changing from what may be a risk-averse culture to increasingly a risk-taking culture requires substantial changes in the management of many Canadian universities, and the scope of such a transition would be unusual in the absence of a strong external force (Morrison and Milliken 2000).

The literature on university change exhibits much talk of political, economic, social and technological threats. The 1970's have been described as challenging times for academic institutions due to the effects of financial stress (Dill 1982). The 1980's were also described as extremely difficult for universities – “soaring fuel costs, rapid inflation, inadequate budgeting strategies, decreased federal support for research... policy decisions to cut federal support for student loan funds... thereby intensifying the competition between institutions” (Dill 1982, 304). In the 1990's a similar story of chaotic change is told, “Universities worldwide have come under increasing pressures to adapt... unprecedented growth, complexity and competitiveness” (Bartell 2003, 43) and others commented “The environments of colleges and universities are increasingly characterized by turbulence, competitiveness, lean resources, unpredictability, and periodic decline” (Cameron and Tschirhart 1992, 88). The decade following the year 2000 continued the same sort of assertion about the hyperactive university environment (e.g., Lumby and Foskett 2011). It is instructive that both the academic and practitioner literature has provided a steady stream of chaotic change commentary over the past 40 years. Each decade seems to claim the label ‘unprecedented’. What may be going on here is a sense of constant organizational pressure in the higher-education industry that has upon it multiple demands from disparate internal and external stakeholders. These pressures are sometimes formal (e.g., employee union groups) and sometimes informal (e.g., parents of students). Change is more or less continual in the university sector, biting or healing different parts of the organization over time. Marshak (2004, 8) refers to Peter Vaill's metaphor of continuous white water when calling for a new way to deal with “hyperactive environments” by adopting an ongoing philosophy of organizational alignment, rather than assuming the historical stabilization strategy of starting and stopping change.

Professionals working in the not-for-profit sector have a growing awareness of the need to effectively manage risk. Some executives focus more on a fiduciary duty to mitigate unfavourable contingencies, not recognizing that embracing some uncertainty is necessary to contribute to the goals of the organization (Tang, Lo, and MacPherson 2010). Defensive strategies seem to dominate the university sector, with administrative managers focusing on downside risk (preventing unfavourable outcomes) rather than exploring upside risk (innovating to promote favourable outcomes). There are certainly exceptions – such as aggressive policies of the University of Toronto, which generated a 30% loss on its investments due to large exposure to the equity markets, hedge fund investments and its currency hedging policy¹. Examples of risky

¹ <http://www.globecampus.ca/in-the-news/article/u-of-t-reports-13-billion-loss-on-investments/>

financial strategies also exist in smaller universities such as St. Francis Xavier University which invests 88% of its endowment fund in the Canadian stock market (CAUBO 2011).

Sporn (1996) claims that research about the management of university culture is quite limited. However, it should be recognized that some studies look at the symbolic aspects of organization without specifically calling it culture (e.g., Tancred-Sheriff 1987; Mintzberg and Rose 2003). This paper sets the stage for future studies of how the notions of culture and change interact within the Canadian university sector. This exploratory paper is intended to add to an understanding of the influence of organizational culture on the risk propensity of Canadian universities. These constructs are not developed from the point of view of claiming a causal link, instead laying a theoretical foundation with propositions based on academic and practitioner literature. In particular, these ideas are discussed in context by using Canadian university corporations as a platform to consider variables that may affect the relationship between risk propensity and financial performance.

Organizational Culture

Organizational culture is a complex and diverse concept (Weick 1987). As early as 60 years ago scholars had already identified 164 different definitions of the word 'culture' (Kroeber and Kluckhohn 1952). Extension of 'culture' to the construct 'organizational culture' has been a relatively recent phenomenon. According to Hofstede et al. (1990), the first mention in the academic literature appeared in a 1979 issue of *Administrative Science Quarterly* (Pettigrew 1979). In the early 1980's, discussion of corporate culture "burst onto the organizational studies scene" (Denison 1996, 619). Hofstede et al. (1990, 286) note the lack of consensus about the definition of organizational culture, but state, "most authors will probably agree on the following characteristics of the organizational or corporate culture construct: it is (1) holistic, (2) historically determined, (3) related to anthropological concepts, (4) socially constructed, (5) soft, and (6) difficult to change". Since these characteristics have been combined into the construct 'organizational culture', propositions may be difficult to study by quantitative research methods alone, and require knowledge of the actors and symbolic aspects of culture. The researcher should also be aware that quantitative evidence such as survey responses from corporate elites within the organization may not tell an accurate story, or perhaps be accurate but incomplete. There is debate in the academic literature as to whether or not it is even possible to quantitatively measure the culture construct. Hofstede et al. (1990) posed the question, can culture be measured on the basis of answers to surveys, or can it only be qualitatively described? In a dated but remarkable study of 79 groups of volunteers, the idea was explored that a respondent's behaviour and attitudes can be more adequately accounted for by information supplied by the respondent's group rather than the respondent (Meltzer 1963). It was found that individuals' attitudes could be better predicted from the group's mean scores on related questions. As can be seen from the above, organizational culture is not only complex but also hard to measure. There has also been discussion of the differences between culture and climate (Denison 1996). Denison explains that the differences between culture and climate stem from their theoretical foundations, with organizational climate research growing out of Kurt Lewin's field theory, and culture research growing out of the social construction framework. Denison (1996, 635) concludes that these two research traditions have many similarities and "provides a strong rationale for the continued integration of quantitative and qualitative methods in the study of organizational culture".

For purposes of this paper, organizational culture is understood in a holistic view, “a system of shared orientations that hold the unit together and give it a distinctive identity” (Hoy 1990, 157). Of course, this is an unproblematized presentation of the concept of culture, dealing with it as a thing rather than as socially-constructed and subject to change. In designing organizational studies, researchers should account for the idea that organizations are themselves culture-producing phenomena (Smircich 1983). Therefore, research projects on the subject of organizational culture would benefit from both qualitative and quantitative methodologies. How culture exhibits itself within an organization has been explored using symbols (objects that transmit shared meaning), heroes (persons who serve as role models), as well as rites and rituals such as ceremonies, celebrations and other symbolic actions (Deal and Kennedy 2000). These are observable aspects of organization. Enduring symbols on the academic campus are plentiful, such as school colours, mascots, official histories, graduation rings, dress codes, and the academic convocation. These are reinforced by promotion in the public media of branded academic accomplishments and varsity athletic triumphs. Deal and Kennedy (2000, 37) indicate that a “hero” is a central figure in a strong culture. They state, “If values are the soul of the culture, then heroes personify those values”. The university president, rector or principal is usually an omnipresent fixture at important management meetings, academic and administrative strategy development, as well as internal and external ceremonial proceedings. The presidential hero character is important in its clue-giving aspect. The university will look to its leadership to make sense of the environment and the formulation of organizational responses. The personal traits of the president are important. In some cases the president’s persona may approximate the common portrayal of the risk-averse scholar stereotype, a “sacred cow hero... pale, disheveled, and disorganized” (Deal and Kennedy 2000, 54). In other cases the president may be a transformational leader. Whatever the case, organizational culture may be affected by a leader’s strategic orientation, including risk propensity. However, in the university context and explained in the next section, it is not clear that the university president wields sufficient influence to turn the whole organization in a different direction.

University culture normally supports the contesting of ideas and maintains individual rights to control significant aspects of the organization, particularly in the realm of academic freedom and the formal governance domain of the Academic Senate as the body responsible for overseeing the academic integrity of the university. The idea of numerous actors contributing to perceptions of culture, change and risk is central to university organization. The university governance structure includes many participants who contribute to decision making. This shared power and influence is known as diffused authority (Reed 2001). Diffusion is an important concept in the university cultural context since it affects the rate at which change is possible. For example, universities typically employ a bicameral governance system: the Board of Directors (also known as Governors, Trustees, Regents, etc.) and the Academic Senate. Both bodies contribute to organizational governance and control, thus affecting the university culture. In a public company the CEO’s views are seldom challenged openly. However, failing to march to the university president’s drumbeat may not be seen as a sign of disrespect. Influential people in the organization can be seen to have a high commitment to the university without necessarily being committed to change. As posited in the organizational change literature, individuals may feel they are demonstrating support for the organization by resisting change, especially if they are not committed to the leader’s version of change (Herscovitch and Meyer 2002).

Gareth Morgan discusses corporate culture at length in a book chapter entitled, “Creating social reality – organizations as cultures” (Morgan 1986). He refers to the way mundane activities such

as accounting practises may contribute to a constructed reality of the organization. In explaining the derivation of the word culture, Morgan (1986) claims that ‘culture’ comes metaphorically from cultivate – tilling land. This development metaphor is apt for the university sector whether the context is administrative (providing infrastructure) or academic (sowing seeds of wisdom and the growth of ideas). The agriculture metaphor also communicates a central theme of university organization in terms of honouring traditional methods of work. Experimentation could lead to total crop failure! The overall sector environment also strongly affects corporate culture by colouring the organization’s assessment of what is needed for survival (Gordon 1991) and promoting a homogeneous set of assumptions as a basis for decision making (Weick 1987). In the university setting, there is often a heavy reliance on internal audit controls and budgetary reconciliation. Internal rules help to shape the way university employees see their potential contribution to exploring opportunities and threats. The business processes can be slow and require layers of administrative inspection and approvals, reducing the likelihood of swift innovative responses. Therefore, mundane administration processes such as financial accounting controls contribute to the shaping of university culture. Many other taken-for-granted aspects of organization are culture-bound. For example, the centralization or decentralization of decision-making, and the way faculty members collaborate or ignore one another. There is also an important tendency toward extremely large governing boards. For example, Queens University in Kingston, Ontario has three governing bodies² including the Board of Trustees (37 members and 9 committees) and the Senate (68 members and 17 committees). Furthermore, there is a combined governance entity, Queens University Council, which includes all the members of the Board and Senate, along with an equal number of elected graduates of the school. Steeped in its own historical background (established in 1874), one can appreciate the complexity of the construction of Queens University culture. However, it is not so easy to see how the governance structure supports fundamental change.

University structures include rules and rites (Trice and Beyer 1990), as well as other cultural items such as formal statements of mission and values articulated by the governing board. The organization uses these inputs to make sense of the societal activities of the organization. Trice and Beyer (1990) elaborate six organizational rites, claiming that these can be used to promote corporate change. Their review of the literature makes a compelling case that cultures are not easy to change: cultures are mysterious, change initiatives are sometimes impractical, culture is developed organically and seems to defy management, existing in plurality, and providing a comfort zone to mitigate personal risk. This last point is familiar in the culture of some universities. The value placed on continuity as a means of sustaining a sense of cultural security may make it natural for insiders to resist change. Of the six rites described by Trice and Beyer, two are fundamental to this discussion. Rites of conflict reduction attempt to reduce antagonism in the organization. In the university context, the all-important concept of collegiality is an exemplar of this rite. Heads of university academic departments are normally described as “*primus inter pares*” – first among equals. This downplays the notion of leader-follower. Since cultural change implies significant conflict, rites of conflict reduction attempt to minimize the number of disruptive events and re-establish stability. This relates to rites of renewal. As Trice and Beyer (1990, 387) state, “More than other rites, rites of renewal may interfere with cultural change efforts. Their intended purpose is to refurbish social structures and help them function effectively again”. The authors use the example of academic curriculum reviews to demonstrate that rites of renewal are essentially traditionalist rather than creative. Democracy and freedom are

² <http://www.queensu.ca/secretariat/council.html>

important in the university culture but act to stifle change. In order to reconcile many diverse academic views “new ideas tend to get diluted” (Trice and Beyer 1990, 389) with the result that privileged individuals and groups maintain their status. The concept of corporate values is seen as an important underpinning of all organizational social interaction. Organizations may have strong or weak cultures (Deal and Kennedy 2000). A strong culture is one that sets the tone and produces a commonality of behaviour within the organizational society. Powerful common values can be a tremendous strength but can also be problematic. If management ‘reads’ the external environment as imposing a significant change, an organization with a strong culture may be slow to react. The difficult-to-change aspect of the culture construct has been observed by many writers. For example, “Change management takes courage precisely because it can be a high-risk undertaking both for organizations and the careers of the decision-makers involved” (Ahn, Adamson, and Dornbusch 2004, 113). The management processes that lead to change have been regarded as politically complex (Lines 2004) giving organizational culture a sense of semi-permanence.

Universities exhibit elements of political complexity. Even when the financial benefits of change can be easily demonstrated, there is often a class of stakeholder which will be offended. The following two recent examples of change proposals at Canadian universities emphasize this point (today@academica.ca 2010). After extensive consultation, the University of Toronto planned to amalgamate the East Indian, German, Italian, Slavic, and Spanish/Portuguese departments into one School of Languages and Literature. This was approved in the arts and science faculty's academic plan. However, over 5,000 faculty members, students, and alumni signed a petition opposing the change, labelling the move ‘academic vandalism’. Similar structural inertia can be seen in an example from the administrative side of university affairs. Kwantlen Polytechnic University wanted to eliminate the use of credit cards for payment of student tuition fees. Expected savings of commissions paid to credit card companies would amount to a quarter of a million dollars annually, to be redirected toward scholarships and bursaries. The university has been informed by the student union that it intends to sue the university under the Charter of Rights and Freedoms and the British Columbia Human Rights Code. Slowness to change predominates the university landscape in Canada. Part of the organizational underpinning is a strong sense of tradition and constancy. Many Canadian institutes of higher education have been in existence for more than a century, having well-established cultural symbols, rites and other socially constructed untouchables. Researchers have observed inertia in mature industries. One study considered the negative consequences of systemic withholding of information and the effect of this on organizations' ability to change. The study predicted that the belief structure contributing to “organizational silence” will be more prevalent in mature and stable industries (Morrison and Milliken 2000, 707). Sitkin and Pablo (1992, 14) also note the predominance of “inertia and history of prior outcomes” in organizations that are laden with tradition. Hofstede et al. (1990) posited that organizational culture is partly predetermined by industry. The higher education industry exudes cultural determinism, with academic culture pervading the overall society of the university. This may be natural due to the teaching, research and service elements which are core to the corporate mission. However, the university culture can be insular, “obeying its own laws and deriving from its own history, intimately linked to current social realities at some points but bafflingly distant from them at others” (Damrosch 1995, 18). Damrosch notes uniformity within the university culture and a general resistance to change, and discusses the isolation of academic disciplines and specialized fields, resulting in scholars becoming intellectually separated from others. Hofstede et al. (1990, 311) found significant empirical evidence that “shared perceptions of daily practices” were central to the idea of corporate culture.

In this case, 'practices' may be used interchangeably with 'customs' and 'traditions'. To the extent that shared expectations of culture maintenance become the norm in a university, these expectations may become self-fulfilling (Ferraro, Pfeffer, and Sutton 2005).

The above discussion of organizational culture leads to the following theoretical ideas in the context of Canadian universities:

Proposition 1: The external environment affecting Canadian universities is characterized by continuous change and it is likely that this trend will continue.

Proposition 2: The internal environment of Canadian universities is politically complex with a variety of stakeholders socially co-constructing the university organizational culture.

University Risk Propensity

The above exploration of organizational culture and change underpins the following more focused discussion of university risk propensity. This section is based on the academic literature and supplemented with insights from the current author's 15 years of practitioner experience as an administrative vice-president of a Canadian university. Of interest in this paper is risk propensity at the unit level, i.e., the university as a whole. The need for examining university risk from the organizational rather than individual perspective has theoretical support in the literature. For example, Sitkin & Pablo (1992, 10) claim that prior research has taken an over-simplified approach, using models that "suffer from a fragmented, issue-oriented focus". Since research of risk propensity at an organization level of analysis is rare (Harwood, Ward, and Chapman 2009) this paper makes a useful contribution toward broadening the literature. It has been asserted that many arguments developed for individual contexts may be equally applicable to organizations (Sitkin and Pablo 1992). This may be true of university culture. However, another phenomenon may also be affecting the situation. Faculty members are often "socially and psychologically independent of the enterprise and the profession" (Dill 1982, 311). Dill states that a generation ago faculty members would define themselves in terms of their university affiliation but now identify themselves in relation to their field. For example, instead of being on the faculty at Saint Mary's University, one is a mathematician, currently at Saint Mary's. This increases the complexity of the university organization since the administration of the university depends upon administrators working collegially with faculty members. The university is very much an open system but its members also have characteristics that create a sense of individualism. The strength of this phenomenon will depend upon culture characteristics in the specific institution, for example, unifying rites and symbols, stories, myths, and role models.

Organizational risk propensity likely affects the decision-making behaviour of senior management including the influence of the university president as the chief executive officer. The opposite is likely true as well. Mintzberg (1980) states that political managers operate in a complex position requiring a reconciliation of a many diverse political forces acting on the organization. Sitkin and Pablo (1992, 12) expand on this idea by identifying "four organizational characteristics posited to directly affect individual risk behaviour: group composition, cultural risk values, leader risk orientation, and organizational control systems". Sitkin and Pablo (1992) state that the composition of the group is most cited as predictor of risk behaviour. In the university setting, the concept of collegiality is a central element of the culture of universities.

Sharing of power among colleagues and a strong inclination toward consensus-based management contribute to universities having conservative management with a tendency toward overestimating the negative aspects of business adventures, thus maintaining the status quo. A striking example of this group effect took place recently at the University of Virginia where the governing board was forced to reverse a major strategic decision (i.e., the Board voted unanimously to reinstate Teresa Sullivan as President, two weeks after the same board forced her resignation). The dismissal was a surprise to the broader university community and precipitated a backlash that resulted in the resignation of the board's Vice-Rector, a faculty vote of no confidence in the board, the resignation of a preeminent professor, and a warning from the Virginia State Governor (Gephardt and Nelson 2012). Moody's Investor Services (2012, 1) reported that this dispute "highlights the stabilizing effects of the counter-intuitive shared governance model still in place at leading US universities." Under this model, which Moody's describes as being unlike top-down corporate governance models and electorally-driven government models, the tenured faculty, alumni, students and major financial donors, all have a significant influence in university decision-making. Public universities like the University of Virginia maintain the shared governance model even though underlying economics affecting university operations has dramatically changed (Gephardt and Nelson 2012).

Brown (1970) studied risk propensity in decision-making and concluded that school administrators are more risk-averse than their profit-oriented counterparts. He theorized that market mechanisms and a drive to produce profit act to promote risk-taking in businesses. Brown (1970, 473) proposed the idea of the school administrator "as a cautious man [sic], averting risk in his decision-making while the businessman is characterized as a bold risk taker". It is possible that adventurous university presidents exist but their propensity to foist uncertain outcomes on the organization would not be unopposed. Perhaps cultural mismatches in risk propensity is one contributor to the high turnover rate among university presidents (Trachtenberg and Blumer 2008). In the university, emphasis is placed on organizational stability and a focus on internal dynamics. This seems to be the case even though the external environment places a burden requiring vigorous change initiatives. Universities have difficulty reconciling the urgency of risk-taking to their history and tradition described by Bartell (2003, 52) as "an inherently unique cultural paradox". Bartell enumerates the strategic characteristics of universities and several of these seem to set a strong tone for establishing university risk culture: (a) goals are difficult to measure, (b) numerous active stakeholders, (c) operations are labour-intensive yet the professionals that comprise the majority of the labour pool are diverse with silo organizational structure, (d) fundamentally different belief systems between professors and administrators, and (e) complex and demanding environment. Virtually all of these characteristics make it difficult for university management to undertake risky adventures.

Researchers have called for examination of a wide range of variables that may affect hazardous behaviour, including an organization's cultural orientation toward risk (Sitkin and Weingart 1995). Other authors (Harwood, Ward, and Chapman 2009, 569) have used Grounded Theory in order to operationalize the concept of "organisational risk propensity," elaborating the following set of 10 properties and dimensional ranges of risk propensity.

Risk approach	crisis ↔ planned
Risk horizon	short term ↔ long term
Management style	micro ↔ macro
Degree of regulation	regulated ↔ unregulated

Risk encouragement	cautious ↔ copious
Risk perspective	negative ↔ positive
Risk reviews	static ↔ dynamic
Risk rhetoric	indirect ↔ direct
Risk rewards	non-existent ↔ proportionate
Risk ownership	forced ↔ voluntary

Harwood et al. (2009) call for an application of the above framework to a broader range of situations. Indeed, it may be useful to apply the model to entities in the university sector. The literature supports the notion that university administrative culture fosters the left-hand side of the above range, i.e., exhibit organizational propensity toward risk-aversion. Many Canadian universities tend to have corporate values that respect history, reward conformity and utilize budgetary systems that aim toward a stable funding model (e.g., departmental allocations that approximate last year's budget plus or minus x%) as well as a host of external operational restrictions imposed by donors (e.g., endowments that must be held in perpetuity) and government (e.g., grants restricted for special purposes such as building projects). Also, it is not uncommon for universities to impose constraints upon their own operations in the form of levies, internal financial reserves, and other internally restricted covenants. In reviewing the literature, Harwood et al. (2009) point to a number of sources that suggest that organizations exhibit a range of appetite for risk, which is influenced by both organizational and individual factors. Accordingly, universities develop distinct institutional responses to bold undertakings. Cultural Theory (CT) promotes the idea that risk is jointly produced from social processes (Douglas and Wildavski 1982). The collective constructs proposed by CT would acknowledge that university actors may not perceive (or select) the same risks as other actors. However, mutual consent is arrived at by socialization and collegial acts. CT proposes that individuals choose which risks to fear and which to ignore in relation to the culture they belong to (Rippl 2002). Four problems of risk associated with CT are summarized by Rippl in a 2 x 2 matrix where knowledge is either certain or uncertain, and consent is either contested or complete. The most problematic situations occur where knowledge is uncertain and consent is contested. This characterizes the Canadian university environment previously described in this paper. However, university collegiality gravitates toward consent (slowly) so the problem becomes one of information inadequacy. Often the university solution is more research and a restarting of the socialization process for the assessment of risk. These processes take a great deal of time. The propositions posited above imply that a turbulent environment may inflict financial penalties on a university for being slow to act. Karl Weick referred to educational organizations as "loosely coupled systems" (Weick 1976, 4). His imaginary academic soccer match is enlightening:

Imagine that you're either the referee, coach, player or spectator at an unconventional soccer match: the field for the game is round; there are several goals scattered haphazardly around the circular field; people can enter and leave the game whenever they want to; they can throw balls in whenever they want; they can say "that's my goal" whenever they want to, as many times as they want to, and for as many goals as they want to; the entire game takes place on a sloped field; and the game is played as if it makes sense. If you now substitute in that example principals for referees, teachers for coaches, students for players, parents for spectators and schooling for soccer, you have an equally unconventional depiction of school organizations (Weick 1976, 1).

This depiction is apt for universities – organizations with diffused management which honour individual enterprise. Whether there is a strong sense of the university as a single entity may be dependent on the specific institution, geographic area, or other moderating influences. Assuming that the university ‘players’ feel they are on the same team may be misguided. For example, Sporn (1996, 51) studied one institution where “the concept of the university as a whole barely exists and has no meaning for the university members”. Different realities can be perceived by the various stakeholders. An important question, though, is whether university actors will be able to pull together to thrive in an environment of change. Perhaps pulling together is not a requirement for good university performance since various actors would have different views on the construct ‘good performance’.

The pace of change as it relates to organizational culture is a subject of debate in the recent literature. As Robert Marshak (2004, 8) states, “Incremental and ‘start-stop’ models and methods of change developed during the Industrial Age are insufficient to address the needs of contemporary organizations operating in hyperactive environments. The concept of continuous whole-system change or ‘morphing’ is introduced along with the basic ideas, principles and requirements for how to engage in it”. Whether the university sector now operates in a hyperactive environment is open to question, but there is little doubt that universities must absorb more risk in a quest to be more entrepreneurial. An important issue relating to university management is the degree to which the corporation engages in activities that radically depart from the comfort zone, and the effect of risk-taking on performance.

One would expect the organizational diversity of universities to affect the environment in which they operate. Gordon (1991) speaks of industry determinants of organizational culture and concludes that researchers can expect to find significant cultural variation within industries. Sporn (1996, 41) is more specific about university culture, “Universities are complex social organizations with distinctive cultures. On the one hand, academic freedom and autonomy are inviolable values and, on the other hand, changing environmental conditions exert strong influence on the primary functions of universities”. Sporn (1996) also highlights several elements that affect university culture: ambiguous decision-making processes, orientation toward human resource issues, problematic definitions of service delivery, tenured faculty with significant autonomy and academic freedom. The list is similar to that of Bartell (2003) discussed earlier. These items are juxtaposed with a discussion of the vulnerability of universities. Other authors agree with the idea that universities operate in precarious political, economic, social and technical conditions. Mintzberg (1982) recognized the uniqueness of universities and pointed to the role of internal experts (professors) affecting management within universities. He further developed the idea of adhocracy in organizational design as a rather flexible approach for ad hoc tasks (Mintzberg and McHugh 1985). Adhocracy includes several elements in the university context. The university operates in an environment that is both dynamic and complex at the same time, making innovation a prime strategic requirement; the university produces complex and unique products; professors act as internal experts providing teaching and research as well as administrative services. Other authors have addressed the idea of adhocracy noting that agile management structures are needed to act quickly to respond to changes in the environment (Quinn and St. Clair 1997).

If the above observations are correct that universities are averse to change, the relatively low response to dynamic environment conditions may affect outcomes such as financial performance. While the perspective of market-based argument assumes the university will be advantaged by

business-like behaviours, not all agree this would be beneficial. There may instead be a culture mismatch where the business techniques are at substantial variance with the core beliefs of academia (Dill 1982). Notwithstanding the two propositions in the previous section, the organizational culture of universities tends to be unsupportive of swift substantive cultural change, leading to the following theoretical ideas:

Proposition 3: University culture will tend to maintain its characteristics over long periods of time, even in the face of environmental change.

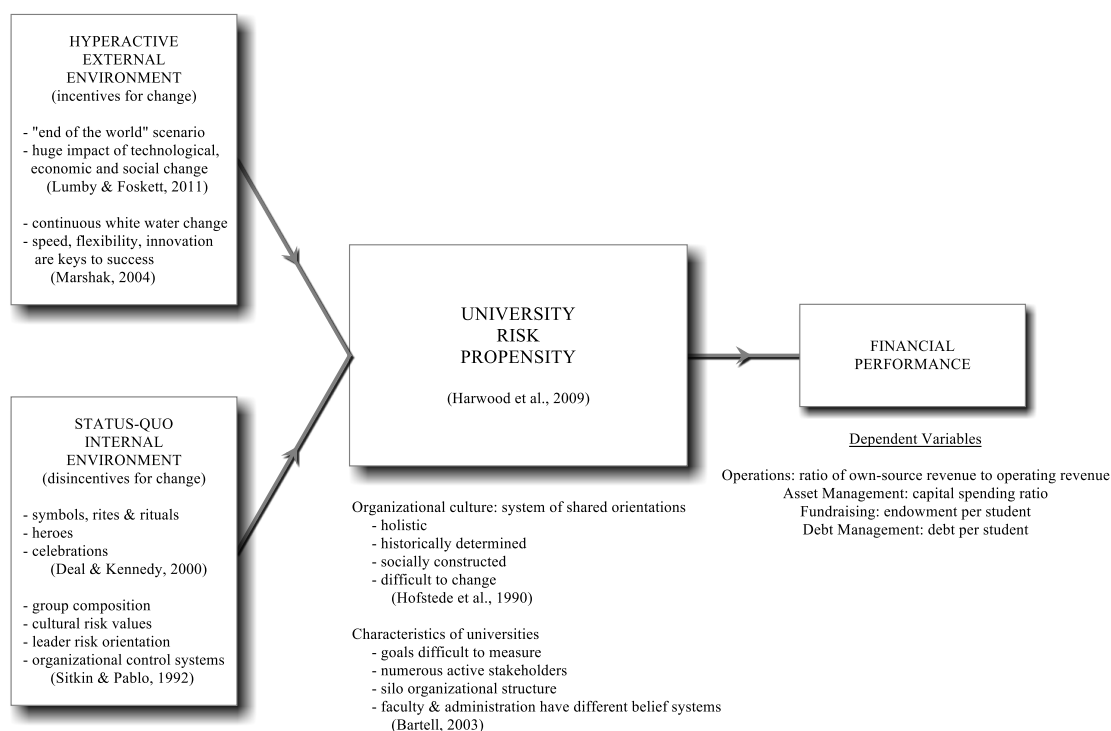
Proposition 4: Canadian universities tend to be risk averse.

Research Implications of Studying University Risk Propensity

This section draws upon the previous discussion in this paper to lay a framework for an empirical study of university culture and risk propensity. Risk-taking is a difficult phenomenon on which to focus research. Baird and Thomas (1985) hypothesized 41 variables that affect risk-taking with sources identified for each from the academic literature. Other authors have discussed the fragmented nature of culture and the existence of sub-cultures (e.g., Morgan 1986). Each university may have distinct (but pliable) cultures permeating teaching, research and community outreach and these sub-cultures potentially influence strategies and decisions. Various research foci are viable such as faculty culture, administration culture (the focus of this paper), or more functional concerns such as institutional health and safety. Nevertheless, organizations tend to have a continuity and “overall experience that feels coherent” (Helms Mills and Mills 2000, 58). Part of this feeling of coherence may be a reflection of the societal environment in which the university is situated and the formation of group norms. Figure 1 provides a model for a research design. The hyperactive external environment provides powerful incentives for change, and potential financial penalties for failure to adapt. On the other hand, the status-quo internal environment builds disincentives for change. The effect of these forces can only be truly understood by studying the socially-constructed cultural interpretations held by university actors.

Cook and Campbell (1979, 93) state that field studies should “always include qualitative research to describe and illuminate the context”, recognizing that the provision of contextual meaning is a hallmark of high quality research. Accordingly, the two boxes on the left side of Figure 1 should be explored with qualitative interviewing techniques. Such an ideographic approach will illuminate the social environment of university culture by allowing the researcher to immerse into the flow of influences to obtain first-hand knowledge of the subject under investigation.

Figure 1: University risk culture - competing external and internal environmental forces



University risk propensity can be quantitatively measured using the 10 dimensions of risk elaborated by Harwood, Ward and Chapman (2009). The authors left it to future researchers to develop a scale for the application of risk propensity. Most studies deal with risk propensity as an individual construct, or an aggregation of individual measurements. The proposed study of university risk propensity would be an ideal opportunity to apply the 10 risk dimensions of Harwood, Ward and Chapman (2009) to the organization level of analysis. The study should recognize the multi-level environment in which the research is to be conducted – for example, the previous sections of this paper make it clear that ‘second-order’ constructs exist in the university context. Accordingly, it will be important to ensure that individual-level data are capable of being assembled at various levels (e.g., faculty and administrative work units). However, simply aggregating perceptions at the unit level of analysis does not answer the call for research that crosses levels of analysis. The proposed research should explore the attitudes of various echelons (Enticott, Boyne, and Walker 2009) of university entities to see if there are cultural differences in risk preference. Administrators of university operations would be particularly applicable to echelon division due to the existence of layers of management and operating staff. In addressing the hierarchical nature of the data, the main feature of the research design should be the use of multi-level methodology such as Hierarchical Linear Modeling (HLM, e.g., Aitkin and Longford 1986; Kreft and De Leeuw 1998). The HLM modelling approach is an extension of multiple regression that allows investigation of the relationships between variables at more than one level of analysis. Multi-level data occurs when responses are grouped (nested) within one or more higher level units of responses. In the university risk propensity study, employees are nested into departments. The departments are also nested in either academic or administrative units, which

are nested in the university generally. This ‘Russian doll’ progression could extend on to larger groupings such as the province of residence. The important point is that individuals within each group should be expected to be more alike than individuals from different groups. If we analyse at the lowest level only we under-estimate variance and hence standard errors leading to inflated Type 1 errors – we find effects where they don’t exist and when variance is distorted in this way, statistical assumptions of independence are violated (Kelloway 2011). In the university risk propensity study, the researchers should predict level one responses from level two characteristics (i.e., does the intensity of risk-aversion predict financial performance?) In this way, the research would benefit from the basic idea underlying the application of HLM that there would be separate analyses of the units at the lowest level of the hierarchical structure (university employees), and the results of these analyses (regression coefficients) become the dependent variables being predicted from variables at the level of departments and universities (Aitkin & Longford, 1986).

The model in Figure 1 indicates that empirical work could study the effect on university financial performance as the dependent variable. Performance in this context could be defined differently than for profit-oriented businesses. Happily, there is an abundance of publically-available financial performance information readily available in the published financial statements of Canadian universities and from Statistics Canada. Theoretical underpinning for a large range of financial measures is well documented by bond-rating agencies such as Standard & Poor’s. There are four important areas of university management that are particularly relevant for the selection of dependent variables in the context of the study of university culture and risk. In the discussion that follows, one key financial performance indicator is recommended for each area of financial interest.

- 1) Operations: ratio of own-source revenue to operating revenue
(own source revenue ÷ total operating revenue)

Universities derive a significant portion of their budget from their provincial government. Given the fiscal challenges facing most of the provincial governments in Canada, the university is vulnerable to declines in grant funding. Revenue diversity adds financial strength by reducing overall risk, and also implies a healthy mix of ‘business’ segments, including academic programs and other sources of operating revenue. However, seeking own source revenue implies a heightened risk attitude for the university as it reaches to non-traditional revenue sources.

- 2) Asset Management: capital spending ratio
(capital expenditure ÷ current replacement value of capital assets)

An important aspect of asset management is the condition of the physical infrastructure. To provide an excellent level of service and to properly steward physical assets for future generations, there is an ongoing need for capital investment. University capital is very costly and requires a significant element of risk-taking.

- 3) Fundraising: endowment per student
(market value of endowed assets ÷ number of full time equivalent students)

A major goal of the university is proper financial stewardship and growth of the endowment. Endowment funds provide a base for student financial aid, and programs in

support of the academic plan. The university's endowment is expected to provide present and future generations with financial support. The size of a university's endowment is often viewed as a proxy for its financial strength and success.

- 4) Debt Management: debt per student
(total long term debt ÷ number of full time equivalent students)

Debt capacity in higher education institutions is not a static concept, but changes over time as fundamental credit factors evolve and in response to the university's external environment. Accordingly, the amount of outstanding debt owed by the university per student will provide an indicator of the university's tolerance for debt risk.

The proposed study of the relationship of university risk propensity to the dependent variable measures of financial performance will add to existing knowledge of how university culture affects the willingness of Canadian universities to enter into risky adventures, and how this risk propensity affects university financial performance.

Conclusion

The discussion in this paper illustrates that the Canadian university sector is subject to continuous demands toward change. This includes a call to be more business-like, requiring a fundamental adjustment to organizational culture, in particular propensity of the organization to accept risk. However, the traditional university organization exhibits a strong preference for the status quo. The proposed research recommended in this paper would have several limitations and opportunities for further study. First of all, the proposed area of study is a single sector (university environment). Although this is a limitation, it does provide a useful platform to elaborate theoretical ideas. The research would only consider risk culture, although there are many other aspects of university organizational culture that could be explored, providing fruitful opportunities for future research. As indicated in this paper, there is certainly room for both qualitative and quantitative approaches. As stated by Hoy, "The tension between research on climate using multivariate statistical analyses and studies of culture using the tools of the phenomenologist and ethnographer provides a healthy competition" (Hoy 1990, 149). However, the researcher will have to acknowledge a personal implication in the research project. This is somewhat ironic given that the search for socially-constructed cultural meaning is itself an interpretation by the researcher. The proposed study would be cross-sectional in nature (this is proposed as a prequel to a longitudinal study which would more appropriately account for temporal aspects of culture that develop over a long period of time) and this would limit the explanatory power of the findings from the analysis. A cross-sectional design does not allow for confident causal conclusions. This problem might be reduced by using different methods and different sources of data, but it will not be eliminated. Despite the weaknesses of cross-sectional surveys, this design can be useful in providing a picture of how people feel about a subject (Spector 1994) and is one of the major research methods used in organizational behaviour studies.

Future research could elaborate the effect of each variable and baskets of variables. For example, there may be differences in university culture of big and small institutions, urban and rural, research-intensive and predominantly undergraduate, or established and new higher-education entities. Exploratory findings could be empirically tested in various combinations to determine

how the theories work in practice at Canadian universities. The work could be generally extended to other parts of the not-for-profit sector.

In conclusion, this paper has discussed the nature of the Canadian university sector and the important influence of organizational culture in assisting or hindering adaptation and propensity to undertake risky adventures. The theoretical findings are useful because the paper identifies that the complex and distributed nature of university society makes it likely that substantive change will continuously attach to various parts of the organization. This is a contrary finding to some of the previous research, which claims chaos as a unique phenomenon set in particular temporal periods. The discussion in this paper would be particularly useful to university administrators interested in evidence-based management. If the external environment continues to call for a more business-like approach, greater efforts will be required by the university to foster an organizational culture that rewards, or at least does not discourage, change. This discussion of university culture and risk propensity can be seen as a “wake up call” for university administrators and as theoretical support and an outline for future research.

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Out With the In Crowd: Constructing the Individual in a Crowdsourcing Environment

Originally introduced as a strategy for lowering outsourcing costs and improving corporate efficiency, crowdsourcing has proven to be much more about dialogue within communities than the implementation of management technique. This paper suggests that the true potential in crowdsourcing and its derivatives, i.e. crowdfunding, is found in the way this phenomenon is able to engage individuals in the collective construction of identities. These collective identities emerge through dialogue (Bakhtin, 1981) among the participants in the on-line environment. Following Bakhtin's theory of dialogism, we explore the ways in which three examples of crowdsourcing have facilitated dialogue, in stark contrast to the monological method reflected in the scientific management approach of the original outsourcing model.

Introduction

Originally a contraction of crowd and outsourcing, the term "crowdsourcing" emerged in the late 1990s to describe a process of corporate outsourcing that allowed companies to draw on stakeholder groups (i.e. customers) for feedback, product ideas, etc. (Howe, 2006). The idea was to reduce the costs associated with outsourcing call-center type functions and focus groups by providing a channel for stakeholders to communicate with the company directly.

Schenk and Guittard (2009) have traced early examples of crowdsourcing back to 1998, when American multinational pharmaceutical company Eli Lilly pioneered InnoCentive, a crowdsourcing platform designed to allow consumers to provide feedback to the corporation. Although there has been relatively little research done on the crowdsourcing phenomenon from an academic perspective, the professional literature has extensive coverage of the growth of this approach over the past decade. And the online coverage of crowdsourcing initiatives is quite vast. Dozens of blogs are dedicated to the topic (e.g. <http://crowdsourcing.typepad.com>) (Schenk & Guittard, 2009, p. 3).

Although Crowdsourcing as a concept was introduced to the business community, essentially from a scientific management perspective, the real benefits in terms of organizational and social development may be found within another paradigm. The driving forces behind the growth in crowdsourcing have not necessarily been the scientific management tenets of productivity and

efficiency (although these factors do enable the process), but more so in the construction of collective identities among individuals who become communities. One hallmark of contemporary postmodern thought is an interest in contextualizing and exposing both the intersectionality and indexicality of identity construction processes. Consequently, we propose that a postmodern approach to understanding how community emerges within a crowdsourcing context will provide insight into the ways in which communities form within organizations and society. Such insights are potentially significant in terms of augmenting the scant theorizing around such organizing efforts, while simultaneously offering real caveats and suggestions in terms of crowdsourcing practices as well.

Crowdsourcing or Outsourcing?

From the perspective of the central firm or organization, crowdsourcing and outsourcing are conceptual bookends of a continuum of practices. Particularly important for our discussion is situating both practices in their (undeclared) foundational assumptions rooted in Tayloristic, indeed neo-Fordist beginnings. Schenk and Guittard (2009) provides a diagram of the process of crowdsourcing versus outsourcing as conceptualized from the scientific management perspective, and it is reproduced below as a stepping stone from which we may offer another perspective as a counterpoise.

As we conceptualize this process, the crowdsourcing would be more like akin to a process-based interconnection between individuals and communities. This is remarkably difficult to portray in a diagram, for there is no central locus from which to form a perspective. Unlike the firm-centric perspective pictured above, it is not about entities that provide to a central concern. Instead what we are concerned with is the process of mutual dialogue and intersecting needs and wants. This process-based view is situated within theories of dialogue and augmented by communicative media, with important ramifications for identity and notions of community.

[text missing?] or comment spaces. And even in platforms where feedback is possible (Twitter, Facebook, etc.) the lack of direct contact with individuals either in the form of dialogue or other interaction, means that much of what is posted can take the form of a monologue – a very limited form of engagement:

While individuals may reflect on their own individually defined social network, and using social networking sites may be supportive in sharing and experiencing one another's self-representations of experience in media, people remain individuated, atomized, with the pervasive sense conveyed being one of collective monologue. Participation is linearly routinized in a timescale of immediacy. While anyone can 'see' the productions of their own social network, in seeing they gain more of a sense of commodity circulation than shared experience, vision and understanding. Although ostensibly a medium for creative individual expression, users produce and consume media more as if in a hall of mirrors than in a jointly created carnival of collective expression of selves (Bakhtin, 1984). (Lewis et al., 2010: 357)

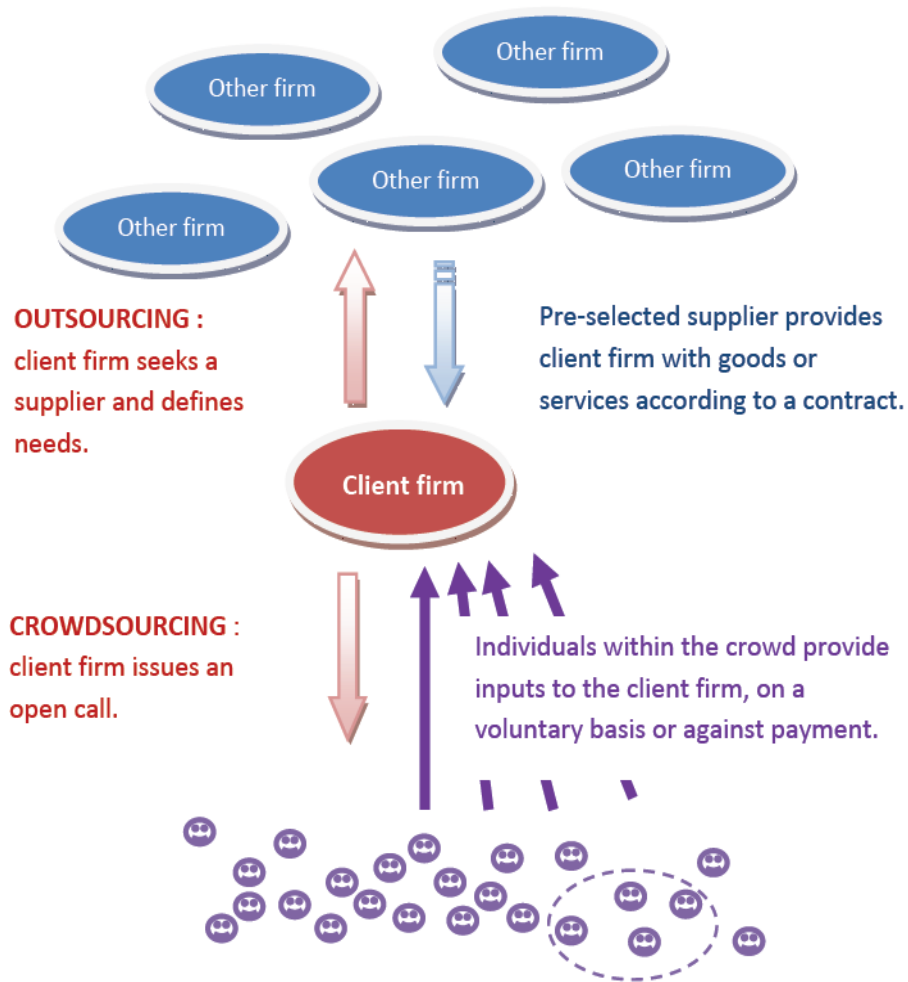


Figure 1: Crowdsourcing vs. Outsourcing

(Schenk & Guittard, 2009, p. 6)

Social benefit is not inherent in internet connectivity, as evidenced in the use of e-commerce or a corporate web presence. These forms of communication do not facilitate dialogue; they simply provide another channel for information dissemination to potential customers. Consequently, the medium is not the entire message.

Bakhtin (1984) tells us that this lack of collective expression is a barrier to the construction of meaning, and to meaningful communication. Dialogism reflects an understanding of meaning as emerging through a conversation, as a result of dialogue. As such, the meaning cannot be fully known to either the organization or the participants until the dialogue has occurred. Through this interaction, collective identities are built around shared meanings. This forms a subtle reworking of the often quoted Graham Wallas line “How can I know what I think till I see what I say”¹ into something like “how can we know who we are until we see what we say to each other”.

This focus on process and dialogue requires reiteration, for it forms the foundation of our contentions regarding a different paradigm for the understanding of crowdsourcing. When Sampson (1993) in (McNamee, 1996) writes of Bakhtin's position, "Neither meaning nor self is a precondition for social interaction; rather, these emerge from and are sustained by conversations occurring between people" (p. 98-9), he reminds us that we are talking about dialogue preceding meaning and identity.

Bakhtin's position, that meaning emerges in dialogue, is quite the opposite to the monologic view of meaning construction that is found in traditional organizational models of communication:

...monologism denies that there exists outside of it another consciousness, with the same rights, and capable of responding on an equal footing, another and equal I (thou)...Monologue makes do without the other; that is why to some extent it objectivizes all reality. Monologue pretends to be the last word. (Bakhtin, 1984:318)

This leads to what McNamee (1996) summarizes as the inevitable conclusion of monologue, “for the speaker to assume the position of objective observer, evaluator...”. Thus it is possible to see how the monologic view of the firm in figure 1 is embedded within a network of assumptions which privilege the firm and furthermore have implications for efficiency rationalizations to rise to prominence. These are the tenets of scientific management.

In the dialogism approach, the speaker is one participant sharing ideas with others, collectively building meaning. In the case of social media, especially because so many voices may be heard, it is quite possible that individuals will make sense of the same language in different ways. Although a speaker may put forward her position on a topic in a blog or on YouTube, it is quite possible that others who choose to join the discussion may find different meaning in the same text. This is consistent with how Bakhtin (1981) emphasises that discursive meaning is not created in isolation. It is an ongoing process involving dialogue between individuals enacting language in response to previously established meaning and in anticipation of future meanings.

If we accept then that crowdsourcing has emerged as a form of dialogue within social media, where meaning is collectively constructed, it follows that one reason this phenomenon has become so successful is because of its focus on the individual voice in a collective forum. As pointed out by Kent (n.d.), “Social media revolve around what is essentially a central tenet of dialogue: the value of the individual.” and there is likely great potential among highly interactive media such as blog and micro blogging sites, to offer opportunities for rich dialogue. One specific

¹ Wallas quoted in Weick (1995: 12)

area where there are some interesting examples of this potential is a specific type of crowdsourcing: crowdfunding.

Crowdfunding, one specific form of crowdsourcing, occurs to a great extent through blogs and micro blogs such as Twitter. It has developed out of a model of individual commitment leading through dialogue to collective action. Crowdfunding is a poignant example of meaning constructed through dialogue, as the participants in these conversations are essentially enacting emerging meaning and subsequent identity by providing funds in support of an initiative. This form of fundraising has proven to be successful in some situations, creating engaged communities participating in what is typically a socially-minded action.

Social Activism and Action

Crowdfunding is a growing phenomenon in North America and Europe, and an area of great interest to entrepreneurs and non-profit organizations. Essentially, it provides a social media channel to investment and development. In most cases, this investment has a social action component, to support local business, or help a community development initiative. And it has emerged to a great extent as a response to the limited investment capital available to small entrepreneurs after the stock market upheaval of the last decade.

Crowdfunding happens exclusively through social media networks, and in many ways mirrors examples of social activism that are taking place through those same channels. As (Kahn & Kellner, 2004) point out, there has been a surge of grassroots movements attempting to carry out “globalization from below” in opposition to “the capitalist strategy of globalization-from-above”. (p. 89). And the individuals and groups engaged in this type of activism are not necessarily the traditional activist organizations. “As the virtual community theorist Howard Rheingold notes (2002), advances in personal, mobile informational technology are providing rapidly the structural elements for the existence of fresh kinds of highly-informed, autonomous communities that coalesce around local lifestyle choices, global political demands, and everything in between.” (Keller, 2009: 89).

Crowdfunding is an interesting example to consider, given the focus upon finance within a dialogic framework. The provision of financial resources is typically centered upon a specific type of instrumental rationalization. Indeed this type of quantifiable realm for optimization is hallmark of modern finance-based decision making situated in a scientific management. If we are to consider the paradigmatic reframing of crowdsourcing, the specific area of crowdfunding is a poignant place to start.

Warehouse Expansion

One regional example of a very successful crowdfunding campaign comes from the Brooklyn Warehouse in Halifax. When traditional forms of financing a renovation and expansion were not accessible to the owners of this restaurant, they reached out through social media to launch a crowdfunding project. The owners made an arrangement with their landlord to share the costs of adding a porch front addition to the restaurant. Through crowdfunding, they set out to raise

\$30,000 in 60 days to cover their share of the costs. When the project closed in February 2012, they had engaged 116 backers and raised over \$23,000 to result in 77.3% funding of the project.

As described in print media coverage of the project:

crowd-funding project is an alternative to conventional financing and a feel-good way for customers to pool their resources, support the restaurant's expansion and reap the rewards through good food. Donors can pitch in anywhere from \$10 to \$2,500 and will receive in turn an equally valued meal, company clothing or permanent recognition on a wall of supporters to be constructed in the Halifax restaurant."

Restaurant co-owner Leo Christakos said, "We were literally bursting at the seams and it was time for us to do something with our business." So they decided to replace the restaurant's summer patio with a permanent, all-season atrium and nearly double the seating capacity. He added, "The interest that we'd pay back to a bank and the interest that we're currently paying to our landlord — who has helped us fund the construction — is high, so instead of borrowing that money to fund it, we'd rather pay that back to our customers in good food and good taste."

"It's meant to be a positive process and the feel-good aspect should be there.

"We're offering back good will and we're building a sense of community because the donor is becoming part of the process. They're making the decision to support what you're doing and they want to see you succeed." (Cosgrove, 2011)

The media report above highlights both the idea of joining an emerging community, but importantly also show how the optimization of financial resources is part of the dialogue that enables such a community to emerge. This is not a private loan process, but rather an open and transparent discussion about resources needed for organizational growth and becoming part of something through the creation of meaning. If "angel" investing is about people with money looking for investment opportunities, then this is about people having dialogue about the need for financing, making community, and then this translating into financial support.

We earlier linked crowdfunding, dialogue and certain types of social media usage. In the case of the Brooklyn Warehouse example we are investigating, we see evidence of such social media usage. Below is the blog post² that launched the crowdfunding project, engaging participants through social media:

² From the Brooklyn warehouse blog at <http://brooklynwarehouse.ca/wordpress/?p=1400>

Hey!
We're at it again.
Changing all the rules.

We are inviting you, the Fans of The Brooklyn Warehouse, to our crowdfunding blog with the hope that you can afford a small (or large) donation in an effort to fund the patio expansion currently underway and in return, receive a nice tasty reward for your support.

Not many people know about Crowdfunding so we've taken the time to explain how it works and what it's all about. One aspect about a successful crowdfunding campaign is that it must rely on you, not only to donate, but also to get the word out to others; it's basically word-of-mouth, which is how we built our business in the first place.

So, jump in and check out the campaign, see if any of the rewards fit your budget and appetite; and don't forget to donate! Follow the blog, make your comments or add a backer's post. Then, send the link as an invitation to people in your social network that you think would find this site, the rewards, or The Brooklyn Warehouse something worth looking at.

Check It Out! http://brooklynhfx.blogspot.com/p/about-this-project_17.html

Thanks for your support!
Leo, George & the Crew

In this case, the crowdfunding project offered community members a chance to embrace a non-traditional response to raising capital. The social benefits of the project were as important as the value exchanged in terms of food for investments. This community-minded action reflects a growing dialogue on a larger scale in terms of "Mainstreet versus Wallstreet".

Interestingly, the Brooklyn Warehouse has recently proposed some collective meals in response to requests from crowdfunding investors. In basic terms, individuals are interested in meeting and sharing a meal with others who participated in the project. This transference from social media, to a social gathering is an interesting development in the dialogue around this project.

In the case of the Brooklyn Warehouse, geographic community appears to be important. Many individuals posting on the blog indicated support for a local restaurant in their local community. However, engagement in a crowdfunding community does not necessarily require geographic proximity. In fact, one of the advantages of the medium involved is that distance doesn't matter.

Move to the Front of the Bus

In another recent example of crowdfunding, a bus monitor from New York State was given over \$700,000 after a three-day campaign to fund a vacation. The background in this case involves four grade seven boys bullying a 68-year-old bus monitor while another student captured the incident on video. The video went viral on YouTube and caught the attention of an individual

who was horrified by what happened. He started a crowdfunding campaign to raise some money to send to the victim of the bullying, raising approximately \$700,000 in just three days. The outpouring of generosity for Ms. Klein was accompanied by comments about how some of those who contributed had been bullied themselves, or knew of someone who had been bullied. The very personal message that individual contributors took from this case led to a very rapidly growing and committed community of support for the victim.

The outcome was well beyond what the organizer had envisioned. He set up the crowdfunding venture to raise \$5,000 to send Ms. Klein on a “nice vacation”. But the dialogue that followed produced such an overwhelming response that now Ms. Klein plans to retire. And a corporate donor, Southwest Airlines, has provided a vacation as well.³

This example offers another view of the crowdfunding phenomenon. Not only are the participants geographically dispersed, they are also not a pre existing community of any sort. The commonality in this case is that the construct of bullying is a temporally and geographically shared experience; a community of people across time and space who are only linked and then activated into action through interactive media offering a chance for unanticipated dialogue.

Becoming Awesome

The first examples of crowdfunding we offered include the funding of an expansion of business capacity and one which might be thought of as a charity effort. Our last example from Halifax is the “awesome phenomenon”. This example is important because it involves outsourcing of financing with an overarching goal not related to productivity or charity, areas which seem obvious matches for crowdfunding efforts. In the case of Awesome Halifax, it’s all about capturing a nebulous, subjective, aesthetic sense of “awesomeness”.

From the Awesome Halifax website⁴:

The Awesome Foundation isn't your average foundation. We're not a charity or a not-for-profit. We're a group of local citizens who simply believe that the world, and specifically our city, needs more awesome. And we're opening our own wallets to help Haligonians make that happen.

In total, there are 30 of us. Together, we are the Trustees of Awesome. Every month 10 Trustees get together and chip in \$100 to form a grant of \$1,000. Our groups of 10 rotate every month so that each of us gets to help make awesome happen four times a year.

³ <http://news.nationalpost.com/2012/06/22/fund-for-bullied-grandmother-karen-klein-surpasses-half-a-million-dollars/>

⁴ <http://awesomehalifax.com>

Defining Awesome

So what exactly constitutes awesome? Truthfully...we don't really know. That's partly what makes this Foundation so great. But there is some general criteria that we've come up with to help define it. For us, awesome ideas have all or some combination of the following qualities. They are:

- 1. Memorable*
- 2. Random/unexpected/out of the norm*
- 3. Positive or will yield positive outcomes*
- 4. Unique or take a unique twist on something common*
- 5. Smile-worthy (the idea makes many people smile)*
- 6. Awesome for more than just you*
- 7. Worthy of the statement "Yes! That's awesome!"*

The statement that the group does not know what “awesome” is but nevertheless wants to nurture it is important. It becomes clear that dialogue conflated with action is the only way through which meaning can be negotiated in this self-admitted vacuum of definition. This is an action of dialogue with instrumental outcomes that precludes atomization of individuals and indeed of community actions. This is a “we’ll know awesome when we do it” rather than “I know awesome when I see it” approach.

Conclusions

Social media provides a forum for community building in the form of crowdsourcing, and specifically within crowdfunding. Although this phenomenon initially began as an exercise in corporate efficiency – outsourcing to a crowd – the true value of crowdsourcing is now emerging in the potential for community building as individuals construct collective identities within networked communities through dialogue

Examples of recent crowdfunding success stories provide insight into the importance of authentic community building opportunities through crowdsourcing networks. In strong networks such as the bus monitor story, the geographical community was very dispersed, but the personalized message, the way in which individuals could authentically identify with the story, created a great deal of support and significant resulting funds. In the example of the Halifax Brooklyn Warehouse, the community was certainly more geographically based. But the personal connections – a sense of belonging to the restaurant, and to the community it serves, facilitated the commitment needed to successfully fund the renovations. And the fact that the contributors are now interested in meeting and eating together in the physical space they helped to create, speaks to the strength of that collective identity. In the example of Awesome Halifax, we see a particular case where the sense of community is strong but the desired instrumental outcomes are near impossible to articulate until the network actually embarks upon collective action.

As illustrated in Bakhtins’ theory of Dialogism, it is the conversation that creates the meaning. The community emerges as meaningful from the network. Not as an output in an efficient strategic process, but as a collective identity that is enacted in the form of shared ideas... visible as feedback, funding, or activism. Our examples, when viewed through dialogism, stand in stark contrast to Turkle’s lament for both individual identity and community when she highlights the

atomization and collective alienation of individuals through technology in her book *Alone Together: Why We Expect More from Technology and Less from Each Other* (2011). Community arises out of dialogue, forged in meaning. Transparent and informed use of certain media may be enabled out of a scientific management style of instrumental rationality, but certainly do not seem doomed to be constrained by it.

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Exploring a Conative Measure of Employee Behaviour

This research introduces a 15-item scale to measure love of the job in a professional context. The impetus for measuring job love was derived from extant psychology and sociology theory on the impact that the trilogy of mind has on behaviour. Although two of the dimensions of this trilogy (cognition and affect) are empirically measured in the organizational context, the third dimension of the trilogy (conation) appears to be overlooked. Interpersonal love theory supports the assumption that people who love an object are driven by a conative force, beyond cognition or emotion (affect) to preserve that object. We propose that jobs can be loved and valued objects and that this conative drive can be evaluated through a measure of love. The job love scale was tested on a sample of 310 professional accountants and consultants in Canada. Exploratory principal axis factoring indicated the presence of three key factors: passion, intimacy, and commitment. Results of structural equation modelling indicated discriminant validity between the job love scale and job satisfaction and job engagement. This new job love measure benefits organizational behaviour scholarship by tapping into the conative drive to explain employee behaviour.

Organizational agents and researchers alike are keenly interested in what motivates employees to behave in ways that benefit both the employer and the employee (Miner, 2003). Positively influencing employee behaviour can benefit both the organization through increased economic well-being and individual employees through increased psychological well-being. Despite its significance, employee behaviour remains somewhat of a mystery to organizational behaviour researchers with little agreement on the key drivers. To unearth a missing link that may explain more of the variance in employee behaviour, it seems prudent to examine extant theories in the sciences that underpin organizational behaviour such as psychology and sociology. Although theories of mind and behaviour can be traced back to Plato and Aristotle in ancient Greece, we chose to start our examination in the 18th century when German psychologists classified behaviour and mental activities into three dimensions: cognition, affection, and conation (Hilgard, 1980). Cognition represented the logical conclusions a person made about a situation based on his or her reasoning. Affection (or affect) pertained to the emotional state a person experienced about a situation based on his or her feelings. Conation pertained to the effort a person was willing to expend in a situation based on his or her intrinsic energy. Dai and Sternberg (2004) interpret the three classifications as follows: “To be interested in something is to have a subjective feeling for it (affect), to be drawn to it (conation), and to have some degree of knowledge about the object or activity in question (cognitive)” (p.13). The underlying assumption of this tripartite model of behaviour is that to understand what drives human behaviour, we need to examine all three dimensions.

This trilogy of mind model was eventually adopted and refined by psychologists in the United Kingdom (McDougall, 1908) and in America (Hilgard, 1980). For the first half of the 20th century, psychologists upheld cognition, affect, and conation as the three primary elements of mental functioning (Anderson, 1934; Boring, 1929; Burt, 1960; Hilgard 1980). In the later half of the 20th century, however, the construct of conation dropped into obscurity relative to its emotional and cognitive counterparts (Hilgard, 1980; Snow, 1980).

Coincidentally, organizational behaviour researchers focused almost exclusively on cognitive assessments, such as job satisfaction, to describe and predict employee behaviour during the last half the 20st century (Latham & Budworth, 2004). Despite its popularity, however, cognitive-based job satisfaction alone failed to explain a lion's share of the variance in organizationally valued outcomes (Brief, 1998; Fisher, 2000; Iaffaldano & Muchinski, 1985; Locke, 1976; Rempel & Burris, 2005; Weiss, 2001; Wright, Cropanzano, Denney, & Moline, 2002).

At the turn of the 21st century, organizational behaviour motivation research evolved beyond cognitive theories (Latham & Budworth, 2004) to embrace the second dimension of the trilogy of the mind: affect or emotion (Ashby & Isen, 1999; Breckler, 1984). Research on affect "is blossoming" as scholars recognize the "importance of affect and behaviour as well as the reciprocal interactions among cognition, affect, and behaviour" (Latham & Pinder, 2005: 506). Notably absent, however, is empirical research on the third aspect of the trilogy of mind: conation. Without an appreciation for the impact of conation on behaviour, "some dynamic features such as drives, incentive motivation, and curiosity have been more or less forgotten" (Hilgard, 1978: 110).

In other faculties of research, "The trilogy of mind recently has enjoyed a renaissance" (Mayer, 2001: 453). Social psychologists (Ashby & Isen, 1999; Gerdes & Stromwall, 2008) and marketing researchers (Anand & Sinha, 2009; Da Silva & Alwi, 2006) are including the construct of conation in their analyses of human behaviour. Perhaps organizational behaviour researchers will also discover new insights into what motivates employee behaviour through a return to the notion of the classical tripartite mind and a closer examination of the contribution of conation to the mental process. Perhaps "A theoretical account of intelligent behavior in the real world requires a synthesis of cognition, conation and affect. We have not really begun to envision this synthesis" (Snow, 200: 194). We are not proposing that conation is superior to or at odds with the other two dimensions of the trilogy of the mind. On the contrary, we propose that when all three dimensions are present and in alignment, motivation to act would be at its highest point. While each component is "interdependent and difficult to separate in nature, each contains distinctive contents that make them all indispensable for understanding human adaptation" (Lazarus, 1991: 352).

McDougall (1908) originally defined conation as a "drive, urge, or felt tendency toward an end" (p.34). More modern descriptions of conation include: "analogous to behaviour since it is the intent or action component" (Pike & Ryan, 2004: 334) and "the ability to focus intellectual energy on the task and apply persistent effort in order to achieve the best possible performance" (Reitan & Wolfson, 2004: 30). Conation is considered to be the intentional, proactive, striving component of motivation (Baumeister, Bratslavsky, Muraven & Tice, 1998) and is so interrelated with motivation that the two terms have been used interchangeably as follows: "The traditional trilogy of mind represents domains of cognition, emotion, and motivation (or conation)" (Dai & Sternberg, 2004: 144). This connection between conation and motivation increases the impetus to revisit the construct of conation to better understand what motivates employees.

The Link between Conation and Love

The next step in the argument is to establish a link between conation and love. Specifically, we propose that when true love is present, people are more likely to be conatively motivated to behave in ways that promote the interests of the loved object. In this article, we have adopted the following definition of love: “Love is a motivational state in which the goal is to preserve and promote the well-being of the valued object” (Rempel and Burris, 2005: 299). Based on this definition, love appears to be as closely related to motivation as is conation. The implication is that the desire to retain and show love is, in itself, motivation enough to compel action.

The relationship between love and the other two dimensions of the trilogy of mind is inconsequential. We cannot reason our way to love a person, activity, or object. We all should love our siblings, exercise, and leafy green vegetables, but many of us do not. The relationship between affection (emotion) and love is also inconsistent. We love our friends, partners, and children even when we feel non-endearing emotions such as anger or frustration toward them. Even when we are not emotionally motivated to act in a loving way, something else kicks in to drive positive behaviour such as a pat on the back, a smile, or even a hug for the teenager who has just destroyed the family car. Perhaps love stimulates a conative response within us and drives our behaviour, regardless of what we think or feel.

The link between conation and love spans nearly a century. Stapledon (1929) asserted, “Genuine love is the conation of tendencies of another person... if love occurs...the other is regarded not as a stimulus, but as a centre of tendencies demanding conation in their own right” (Stapledon, 1929: 278). More recently, and in other domains, theorists claim that conative inspired love “would motivate the beloved to strive to affect, as much as to be affected by, her lover. Although the cognitive nature of this striving may not be immediately conscious, when love is recognized, its affective, conative, and cognitive dimensions become undeniable” (Walton, 2011: 168). The basic premise is that love can inspire conation driven behaviour regardless of cognitive and affective responses.

Sternberg’s Theory of Interpersonal Love

To measure interpersonal love, Sternberg’s (1986, 1988) triangle of love model has been selected as the underlying framework for this research because it is widely documented and empirically popular in the human psychology literature (Acker and Davis, 1992; Aron and Westbay, 1996; Carlos, 2006; Lemieux and Hale, 1999; Whitley, 1993) with over two hundred citations listed on the EPSCO research database for the seminal article: “A triangular theory of love” printed in the *Psychological Review* (Sternberg, 1986).

Sternberg’s thesis is “that love can be understood in terms of three components that together can be viewed as forming the vertices of a triangle” and that these vertices are “separable, but interactive with each other” (Sternberg, 1997: 314 - 315). These components or dimensions are the levels of passion, intimacy, and commitment felt by each party. The dimension of passion refers to motivational drives that are fed by “self-esteem, succorance, nurturance, affiliation, dominance, submission and self-actualization” (Sternberg, 1997: 345). The commitment dimension captures the active choice to commit in a relationship whereby “one makes a short-term choice to love another and a long-term commitment to maintain that love” (Sternberg, 1986: 119). While the decision aspect can ultimately control all other aspects of the relationship, it is the commitment component that provides the motivation for “getting through hard times and returning to better ones” (Sternberg, 1986:123). The intimacy dimension captures

the non-sexual friendship of a relationship and includes the motivation to “promote closeness, bondedness, and connectedness” (Sternberg, 1986: 120).

Proposing that both balance of each dimension (shape of the triangle) and the relative strength of each dimension (size of the triangle) are pertinent, Sternberg (1986) developed and validated a scale to measure interpersonal love. Although all three dimensions need not always be present or in harmony, Sternberg asserts that people who experience healthy, consummate love possess large and roughly equal amounts of passion, intimacy and commitment for each other (Sternberg, 1986, 1997). Absence of any of these dimensions results in something other than ideal love. For example, Sternberg (1989) describes passion alone as “infatuation”; commitment alone as “empty love”; and intimacy alone as “liking”. The following diagrams in figure 1 [in Appendix] depict various types of love based on amounts and balance of each dimension.

Sternberg’s (1988) triangular love theory is conceptually consistent with results of recent qualitative research on workplace motivation (Gordon, 2005; Richie, Fassinger, Linn, Johnson, Prosser, and Robinson, 1997). Both Gordon (2005) and Ritchie et al. (1997) based their research on working women and found three universal themes that align with Sternberg’s (1986) three dimensions of love. Gordon’s (2005) process theme, which taps into how a worker is challenged by and engaged in her job’s activities, and Richie et al.’s (1997) passion for the work theme both align with Sternberg’s passion dimension. Gordon’s (2005) purpose theme, or the extent to which the employee feels compelled to fulfill herself through her work, and Richie et al.’s (1997) persistence theme both align with Sternberg’s commitment dimension. Finally, Gordon’s (2005) people theme, which captures how relationships on the job are personally fulfilling, and Richie et al.’s (1997) connectedness theme both align with Sternberg’s intimacy dimension.

A final impetus for using Sternberg’s (1988) triangular theory of love as a foundation for the construct of job love is that its three dimensions correspond with three well established areas of organizational research: Passion corresponds with motivation drive theory (Lawrence and Nohria, 2002) and workplace passion (Vallerand and Houliort, 2003); commitment corresponds with Meyer and Allen’s affective commitment (1997); and intimacy corresponds with compassionate relationships among coworkers measured by the Gallup Q12 survey (Bassi and McMurrer, 2005, Harter, Schmidt, and Keyes, 2002).

The Job as an Object of Love

The object of our love is not necessarily a person (Rempell and Burris, 2005). That is, beyond interpersonal love, we experience the love of activities such as golf, reading, or sailing and objects such as sunsets, classical music, or a Renoir painting. Marketing scholars have recently gained valuable insights into purchasing behaviour by successfully integrating the concept of the love of objects into consumer behaviour research. Although consumer satisfaction has served as the holy grail of measuring marketing success for decades, research focused on the love and affection that customers feel for the goods that they consume has helped researchers better understand consumer purchase behaviour by redefining the relationship between consumers and their purchases (Ahuvia, 2006; Carroll and Ahuvia, 2005).

Now, the question to be addressed is: “Can a job be the object of love?” Psychologists and organizational behaviour theorists have actively theorized about and researched the issue of centrality of work or the psychological investment that people place on their work. Relative work centrality taps into how work fits into one’s list of life’s priorities whereas absolute work centrality deals with the “degree of general importance that work has in the life of an individual at

any given point in time” (MOW International Research Team, 1987: 81). Viewed in this way, absolute centrality can be seen as the extent to which work or a job is a valued object.

While research suggests that relative significance of work can change from culture to culture (England and Harpaz, 1983; MOW International Research Team, 1987), there is empirical evidence supporting consistency of absolute centrality among many workers, particularly in developed and industrialized nations (England and Mitsumi, 1986; Nord and Brief, 1990). In several research studies, work has been more valued and central to individuals’ lives than leisure, community, and religion and was outranked only by family (Harpaz, 1999; MOW International Research Team, 1987).

The proposition that jobs can be valued objects can also be viewed from an instrumentality perspective. If we view paid employment as an instrumental human activity, then a job represents the opportunity or means of expression for an individual to produce valued outcomes (Kelloway, Barling, and Gallagher, 2004). These valued outcomes can either be extrinsic or intrinsic. A job can be a valued object because it is instrumental in providing manifest outcomes such as remuneration (Jahoda, 1982) or as a prized possession or esteemed property (Gordon and Lee, 1990; Kelloway, Barling, and Carroll, 1998). The job can also be a valued object because it provides latent, intrinsic outcomes such as structure, social contact, purpose, status, and personal identity (Jahoda, 1982; Kelloway, Barling, and Gallagher, 2004).

If love is a “motivational state in which the goal is to preserve and promote the well-being of the valued object” (Rempel and Burris, 2005: 299), we propose that employees can be motivated through a conative process to preserve and promote the well-being of their jobs if they value and love their jobs.

Job Love Literature

Over the past decade, the business community has embraced the subject of loving one’s job. There are hundreds of books listed on Amazon and Chapters websites espousing the value of loving one’s job (e.g., Bloch and Richmond, 1998; Gordon, 2005; Lees, 2007; Whiteley, 2001). Oprah Winfrey staged an entire show on the topic (“I Love My Job!” aired February 24, 2003). More recently, websites and blogs (such as <http://lyjnow.wordpress.com>) have emerged encouraging workers to love their jobs or seek work that they love. As a result of these evolutionary changes, the phrase “loving your job” has been entrenched into the business community’s common vernacular.

A lacuna of empirical research on love of the job indicates that organizational scholars are lagging behind the practitioner community on this topic. However, in the last few years, text book chapters about love of the job have emerged (Hadley, 2008; Kelloway et al., 2010). It is interesting to note that, although these authors have unique perspectives as to how the job love construct should be measured, both Hadley (2008) and Kelloway et al. (2010) cite Sternberg’s (1986, 1988, 1997) triangular interpersonal love theory as pivotal to the understanding of love of the job. Perhaps an examination of the conative drive inherent in love as described by Sternberg (1988) can provide valuable insight into employee motivation and help to bridge the gap between practitioners and academics regarding job love.

Overview of the Research

The macro-level research question we ask is: “Does conation explain more variance in employee behaviour than cognition or affect alone?” There are job satisfaction measures to gauge cognitive response, job engagement measures to gauge affective response, but there are no known

empirically validated workplace measures of love to gauge conative response. The proposition is that love of the job (or lack of it) will have a motivating impact on employee behaviour and may moderate cognitive and affective responses. We need to expand our knowledge of employee motivation and behaviour by investigating what, if any, additional value the conative assessment of job love adds to the explanation of job behaviour. The first step toward answering this research question is development of a measure of job love to gauge conative response. Therefore, the intention of this study was to develop an instrument to measure job love, and indirectly, conation.

Methodology

Sample

Four professional, national designation granting associations were approached to participate in this study: The three accounting designation-granting associations and the single certified management consulting organization in Canada. The Certified General Accountants and the Certified Management Consultants agreed to participate and pass the invitation and survey information along to their members in their spring newsletters. Within the newsletter that was emailed to nearly 10,000 CGA and 2,000 CMC subscribers, each association's communications director assured members of the voluntary, anonymous, and confidential nature of the survey and provided a URL to the on-line survey. By accessing the URL link, respondents indicated their understanding of the confidential and anonymous nature of the survey. Due to privacy protection and regulations imposed by both associations, no reminder emails could be sent. Professional groups such as the CGA and CMC are bombarded by requests for information sharing and survey research. Therefore, to protect their members, communications directors are loathe to send multiple emails about one survey. To inspire cooperation, however, the CGA association offered a prize, a plane trip/vacation for two up to a value of \$2,000. The contest was open to all respondents from both associations. The surveys were administered between May and August 2010.

Although the economic benefit associated with the elimination of postage, printing, and data entry costs in web-based surveys is significant, it comes at the cost of lower and more variable response rates (Cobanoglu, Warde, and Moreo, 2001; Kaplowitz, Hadlock, and Levine, 2004). Since web-based survey respondents are more likely to be computer savvy and have the economic benefit of access to a computer, this research is susceptible to sample selection bias. The variability is justifiable in this case, however, since the sample in this study consisted of working adults who typically rely on the computer and the internet as business tools.

With respect to response rates, recent meta-analyses suggest that response rates for e-mail and web-based surveys do not nearly reflect those of mail or face-to-face survey methods (Cook, Heath, and Thompson 2000) and may be as low as 11 percent (Sax, Gilmartin and Bryant, 2003). Information overload (Baruch and Holtom, 2008; Rogelberg and Stanton, 2007) and concerns over internet security and spam (Sills and Song 2002) are common culprits for such poor response rates. To determine the response rate, we needed to ascertain the number of recipients of the survey. This task may be straightforward for a traditional mail survey, but it is not necessarily so for a web-based survey. For this study, the survey link was included in the CGA Magazine spring newsletter that was mailed to approximately 10,000 members, and the CMC spring newsletter that was emailed to approximately 2,000 CMCs. According to the Nielsen Norman Group (2010), less than 20 percent of magazine or newsletter recipients actually read the document thoroughly (Nielsen Norman Group, 2010). Therefore, of the approximately 12,000 survey links that were sent, an estimated twenty percent, or 2,400 people were actually aware of

the survey. Of this audience, 310 usable responses were provided yielding a response rate of 13 percent. This response rate may seem low with respect to the 21 percent benchmark for email surveys (Kaplowitz, et al., 2004), but it is within the range of 11.2 to 20.5 percent response reported by Sax, Gilmartin and Bryant (2003) for web surveys with a response incentive. Research suggests that response rates for surveys in general, and electronic surveys in particular, have declined steadily over the past two decades (Bickart and Schmittlein, 1999) due to over-surveying (Baruch and Holtom, 2008; Rogelberg and Stanton, 2007).

Nonetheless, low response rates such as 13 percent could be a concern if the lack of response biased the estimate of the population (Bean and Roszkowski, 1995). Response rate is really only an issue if it impacts representativeness (Krosnick, 1999). Since “a sample of 1% of the population can be more representative, indeed much more representative, than a sample of 50% or 60% of the population” (Cook, Heath, Thompson, 2000: 821), the key is to ensure that responses of the sample represent the population. Despite the disappointing response rate in this study, response representativeness was indicated (Cook et al., 2000). In this study, the sample appeared to be representative of the general population of CGAs and CMCs with respect to age, gender, location and industry. For example, the CGA respondents in the survey worked in the following industries: 25 percent in consulting or public practice (compared to 27 percent for the CGA population); 21 percent in government and non-profit (compared to 20 percent for the CGA population); and 24 percent in service industries (compared to 24 percent for the CGA population). Over half of the respondents (55 percent) were affiliated with the Certified Management Consultants of Canada, 63 percent of which were professionally designated. Of the 138 respondents associated with the Certified General Accountants association, 51 percent were professionally designated while the remainder were interning. As indicated in Table 1 [at end of paper], the demographics of the sample are representative of the CGA and CMC populations. Therefore, it is not likely that the low response rate caused distortion of the true effect (Schalm and Kelloway, 2001), compromised representativeness, or threatened the generalizability of the results to these populations (Rogelberg and Stanton, 2007).

Survey Design and Research Instruments

The on-line survey was designed with Lime Survey software to be completed in twenty minutes using point-and-click responses and drop-down menus. It was housed on a secure page of the Saint Mary's University server and only the principal researcher had access to the data. Links to the survey were given to the survey population by the CGA and CMA associations.

The survey consisted of several validated scales as well as the newly developed job love scale. Job satisfaction was measured with the Warr, Cook & Wall (1979) 15-item scale. Odd items of this scale represented extrinsic job satisfaction, and even items represented intrinsic satisfaction. On a five-point Likert scale ranging from very dissatisfied to very satisfied, respondents were asked to rate extrinsic items such as “The physical work conditions” and intrinsic items such as “The recognition you get for good work”.

Job engagement was measured with the seventeen-item Utrecht Work Engagement Scale (UWES) developed by Schaufeli (1995) which has been empirically tested in diverse samples and geographical settings (Roberts and Davenport, 2002; Schaufeli et al., 2002). Respondents were asked to rate their agreement with statements on a seven-point Likert scale ranging from “never” to “everyday”. Items for the vigor scale included: “At my job I feel strong and vigorous” and “At work I feel bursting with energy”. The dedication subscale included items such as: “I find the

work that I do full of meaning and purpose”. The absorption subscale included items such as: “Time flies when I am working”.

To provide a means of assessing convergent validity, Hadley’s (2008) three-criterion job love measure was included in the survey. Hadley assesses job love from both a criterion and a continuous perspective with the following three questions: “Overall, what phrase best describes how you feel about your current job?”; “If we asked your significant other or close friend to describe how you feel about your current job, what would he or she say?”; and “Once again, indicate how you feel overall about your current job”. For the first two questions participants were given the following choices: “I hate it”; “I dislike it”; “I’m neutral about it”; “I like it”; and “I love it”. For the final question, participants had to indicate how they felt about their jobs on a 10-point scale where 0 represents “I hate it” and 10 represents “I love it”.

Demographical data were collected on: age, gender, professional status, workplace province, total working hours and billable hours. These data helped to assess the potential moderating affect of exogenous variables.

Finally, to develop a robust measure of job love, respondents were asked to rate their agreement with each item on a 7-level Likert-type scale ranging from 1 (very strongly or absolutely agree) to 7 (very strongly or absolutely disagree). The passion items consisted of statements such as “My work is more than just a job for me, it is a passion. The commitment dimension consisted of items such as: “I really feel as if this organization’s problems are my own”. The intimacy dimension contained items such as: “I love the people I work with”. The 15 items of this scale are described in more detail under “Procedure for Scale Development.

Data Analysis

Thirty cases (10 percent) were randomly selected to verify accuracy of data entry with positive results. The internal controls of the Lime Survey software undoubtedly helped in this regard. Data cleaning indicated a lack of presence of extreme outliers or missing data. Preliminary tests and plots suggested that the data were normally distributed.

Common Method Variance. The self-report surveys used in this study, whereby participants responded to all similarly scaled items at one point in time, can be susceptible to common method variance (CMV) (Lindell and Whitney, 2001; Podsakoff, MacKenzie, Paine, and Bachrach, 2003). CMV, or the “variance that is attributable to the measurement method rather than the constructs the measures represent” (Podsakoff et al., 2003: 879) may artificially inflate the observed correlations among variables (Lindell and Whitney, 2001).

To mitigate the potential impact of CMV, we followed the advice of Podsakoff et al. (2003) to control for and report variance that may be a result of using a common method. The marker variable technique was used whereby an estimate was made for the maximum amount of correlation or variation that could be due to common method. The amount of this variance was then extracted from the original correlations. Following the advice of Lindell and Whitney (2001) and Malhotra, Kim, and Patil (2006), the marker variable selected in this case was the second lowest correlation in the unadjusted matrix: the correlation between Productivity and Job Engagement Vigor ($r = .028$). Since the correlation is very small and not significant ($p > .05$), it is considered to be a proxy for the maximum amount of correlation that could be due to contamination by the common research method (Lindell and Whitney, 2001). Revised correlations were computed using the following formula recommended by Lindell and Whitney

(2001) and Malhotra, Kim, and Patil (2006) where r_A = the CMV adjusted correlation, r_U = the original/unadjusted correlation, and r_M = marker variable correlation: $r_A = \frac{r_U - r_M}{1 - r_M}$

Using Excel, the marker variable correlation value (.028) was “partialled out of the remaining correlations” (Lindell and Whitney, 2001: p.115) resulting in a revised correlation matrix. Next, associated t scores were computed¹ and converted to p values (* denotes $p < .05$; and ** denotes $p < .01$) based on t critical values of 1.645 and 2.326 respectively. The revised CMV-adjusted correlations indicated that any inflated correlation caused by common method was minimal (less than 8 percent) and only three correlations below .14 ceased to be significant after controlling for CMV.

Procedure for scale development

The target construct to be measured in this study is job love. Based on extant interpersonal love theory (Sternberg, 1988) and recent organizational behaviour theory (Hadley, 2008; Kelloway et al., 2010), job love is proposed to comprise three dimensions or subscales: passion, commitment, and intimacy. To examine this a priori model and to develop the job love scale, this study emulated the recommended three-step best practice of item generation, scale development, and scale evaluation (Hinkin, 1995, Schwab, 1980).

Item Generation. Each item/variable in the job love scale had to possess content validity and capture the domain of job love to be included in the measure (Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993). In their working paper, Barling and Innes (2007) identified 15 items to measure job love. The extent to which these 15 items reflect love of the job was assessed by interpreting how items of Sternberg’s (1990) triangular interpersonal relationship love scale and might apply in the organizational context. What follows is an analysis of each of each of the three love dimensions and their scale items.

Passion for the Job. Sternberg’s (1988) passion subscale includes the following items:

1. Just seeing _____ excites me.
2. I find myself thinking about _____ frequently during the day
3. My relationship with _____ is very romantic.
4. I find _____ to be very personally attractive
5. I idealize _____.
6. I cannot imagine another person making me as happy as _____ does.
7. I would rather be with _____ than with anyone else.
8. There is nothing more important to me than my relationship with _____.
9. I especially like physical contact with _____.
10. There is something almost “magical” about my relationship with _____.
11. I adore _____.
12. I cannot imagine life without _____.
13. My relationship with _____ is passionate.
14. When I see romantic movies or read romantic books I think of _____.
15. I fantasize about _____.

¹ The calculation used to compute t scores was: $t_{\alpha/2, n-3} = \frac{r_A}{\sqrt{1-r^2_A}/(n-3)}$

In the interest of parsimony, redundant or inappropriate items were deleted. For example, items 1, 3, 4, 5, 6, 9, 10, 14 and 15 are not applicable in the organizational/work context. They are unique to the romantic love context. Items 2, 11, 12, and 13, were applicable and were rephrased to suit the organizational context as follows:

My job keeps my interest engaged like no other task

My work is more than just a job to me, it is a passion

I adore what I do at work

I am so happy that I do the job that I do

Finally, to capture the perceived objective reality that respondents experience by comparing themselves to their peers, one final item was added as follows:

I wish my friends found their work as personally fulfilling as I find mine

Intimate Relationships in the Workplace. Sternberg's (1988) intimacy subscale of the relationship love scale includes the following items:

1. I am actively supportive of _____'s well-being.
2. I have a warm relationship with _____.
3. I am able to count on _____ in times of need.
4. _____ is able to count on me in times of need.
5. I am willing to share myself and my possessions with _____.
6. I receive considerable emotional support from _____.
7. I give considerable emotional support to _____.
8. I communicate well with _____.
9. I value _____ greatly in my life.
10. I feel close to _____.
11. I have a comfortable relationship with _____.
12. I feel that I really understand _____.
13. I feel that _____ really understands me.
14. I feel that I can really trust _____.
15. I share deeply personal information about myself with _____.

In the first stage of analysis, these 15 items were reduced to ten and reworded to suit the concept of intimacy in an organizational context. Items were included to tap into importance of supervisor and co-worker relationships with subordinates. Although not peer reviewed, the annual Gallup Q12 survey of thousands of employees consistently finds that people leave their jobs (either physically or by becoming disengaged and tuning out) because they perceive that they have lousy bosses. Further, they stay in organizations predominantly because they love their co-workers (Bhatnagar, 2007).

Five of these new items did not survive the preliminary assessment/vetting by six organizational behaviour PhD and MBA candidates because they were considered to be redundant. In the interest of parsimony, the following five items were retained.

We care deeply for each other at work

I love the people I work with

I feel very close to the people at work

We value each other in our work life

I would feel a deep sense of loss if I could no longer work with my coworkers

Commitment to the Organization. Sternberg's (1988) commitment/dedication subscale of the relationship love scale includes the following items:

1. I know that I care about _____.
2. I am committed to maintaining my relationship with _____.
3. Because of my commitment to _____, I would not let other people come between us.
4. I have confidence in the stability of my relationship with _____.
5. I could not let anything get in the way of my commitment to _____.
6. I expect my love for _____ to last for the rest of my life.
7. I will always have a strong responsibility for _____.
8. I view my commitment to _____ as a solid one.
9. I cannot imagine ending my relationship with _____.
10. I am certain of my love for _____.
11. I view my relationship with _____ as permanent.
12. I view my relationship with _____ as a good decision.
13. I feel a sense of responsibility toward _____.
14. I plan to continue in my relationship with _____.
15. Even when _____ is hard to deal with, I remain committed to our relationship.

For parsimony, these 15 items were reduced to five to capture how employees might perceive "loving" commitment to their organizations. These items were rephrased to suit the organizational context as follows:

I love the organization for which I work

I would be very happy to spend the rest of my career in this organization

I really feel as if this organization's problems are my own

This organization has a great deal of personal meaning for me

I would do almost anything to do what I currently do in this organization

Sternberg (1990) scored his interpersonal relationship love scale on a 9-point Likert scale from "Not at all," to "Moderately," to "Extremely." In this research, the scale was reduced to a 7-point scale ranging from "very strongly or absolutely agree" to "very strongly or absolutely disagree". This level of detail was considered to be sufficient to for data analysis while mitigating the potential for fatigue bias.

According to the American Psychological Association, the criteria for accessing the psychometric soundness of behavioural measures is demonstration of content validity, criterion-related validity, construct validity, and internal consistency (Hinkin, 1995).

Content validity was assessed by utilizing a domain sampling technique recommended by MacKenzie et al. (1991). Five management/organizational behaviour PhD candidates with previous work experience were asked to classify each item from the job love scale into one of three categories: Intimacy felt for the organization; intimacy felt for the coworkers, clients and supervisors of the organization, and passion for the organization or job. All items were assigned to the proper category more than 80 percent of the time so they were incorporated into the job love scale (MacKenzie, Podsakoff, & Fetter, 1991).

Once the scale items were generated, it was possible to identify the first hypothesis to be tested:

H1: Job love is measured as a three-factor construct comprising passion for the job, commitment to the job and organization, and intimate relationships with co-workers or clients.

Scale Development. In this stage, the psychometric properties of the job love scale were examined. Internal consistency was observed through inter-item correlation coefficients among the new scale items (Doll & Torkzadeh, 1988; Doyle & Becker, 1983). With the exception of the inter-factor correlations, which were as high as .82 for the first two passion items, values ranged between .25 and .70 between most of the items, which provides evidence of a reasonable level of internal consistency. Correlations between the factors themselves, ranged from .51 between intimacy and commitment to .68 between intimacy and passion providing evidence that the factors are modestly interrelated and somewhat distinct (Briggs & Cheek, 1986). The correlation matrices for the newly developed items that make up the three subscales of job love (passion, intimacy and commitment) are included in Table 2 [at end of paper].

SPSS version 15.0 software was used for exploratory analyses. Although, Principal Components Analysis (PCA) is considered by some researchers to be the “default method of extraction” (Costello and Osborne, 2005: 1), we opted for a Principal Axis Factoring (PAF) method that allowed us to test the significance of the factor loadings including the correlations and common variance among those factors (Farirgar, Wenener, MacCallum and Strahan, 1999). Further, PCA treats factors as linear combinations of the variables whereas PAF treats factors as latent variables. Only factors with eigenvalues greater than one and with coefficients greater than .50 were included in the analysis. Three factors explained 79 percent of the variance. Details are presented in Table 3 [at end of paper].

Construct validity was assessed through scree plot examination. The steep break in slope of the scree plot after the third factor indicated that most of the variance was explained by the first three factors (Cattell, 1996).

The appropriateness of the sample size for exploratory factor analysis was assessed in two ways. First, the sample size of 310 and the full 15-item job love scale represent a ratio of items to participants of 20:1 which is double the 10:1 ratio recommended by (Tabachnick & Fidell, 2001). Next, uniformly high communalities (between .60 and .80) provided evidence of strong data which can tolerate smaller sample sizes for factor analysis (Costello & Osborne, 2005). The significant Bartlett’s (1954) test of sphericity ($p < .001$) and a Kaiser-Meyer-Olkin index of .93 indicated that the factor structure was robust (Tabachnick & Fidell, 1996). The original factor structure derived through principal axis factoring and 5 iterations confirmed the predominance of three factors. Because it was assumed that the factors would be correlated, oblique promax rotation was used to maximize the loadings.

The rotated structure matrix indicated some cross loadings of the factors in the .50 to .60 range. However, each factor contained five items that had unique, strong loadings of greater than .73. The pattern matrix emphasized this solid factor structure, showing no cross loadings and similar strong loadings. Therefore, all 15 items were retained. The five items that were developed to measure passion for the job loaded highly ($< .80$) on the first factor, with an eigenvalue of 8.56 and explained variance of 57 percent. This factor was aptly named Passion. The five items that were developed to measure intimate relationships in the workplace also loaded highly ($> .80$) on a second factor, with an eigenvalue of 2.1 and explained variance of 14 percent. This factor was named Intimacy. The final three items that were developed to capture the commitment to the organization and job loaded moderately highly (.73-.93) on the final factor, with an eigenvalue of 1.23 and explained variance of 8 percent. This factor was named Commitment. Details of these eigenvalues and loadings for both structure and pattern matrices are provided in Table 4 [at end of paper].

Bernstein (1988) recommends a further test to assess whether factors arise for substantive reasons or merely due to similar statistical distributions. Therefore, means and standard deviations for each variable of each factor were compared. As is indicated in Table 5, there were no statistical differences in the item means or standard deviations among the three factors.

A final test of internal consistency was conducted by comparing the Cronbach's Alphas for the subscales and the entire job love scale. The intent was to determine which items "hung together" to adequately measure the construct of job love. The Cronbach alpha for the entire 15-item job love scale was .95. Each of the three factors or subscales contained five items each and had similar internal consistency ratings as follows: passion subscale $\alpha = .95$; intimacy subscale $\alpha = .93$; commitment subscale $\alpha = .91$. These Cronbach alphas are included in Table 5 [at end of paper] along with with item means.

Given the positive results of exploratory factor analysis, the job love scale appeared to represent the three a priori factors of passion, intimacy, and commitment. Further, evidence suggested that the scale possessed construct and content validity and internal consistency. Before we could support or reject H1, however, evidence of external (discriminant) and internal (convergent) validation was required.

Scale Evaluation. The objective of this final stage was to examine the discriminant and convergent reliability of the new job love scale. First, content validity for the new job love items was tested through a literature review to ensure that representative questions were included in the design. Following the advice of Hunt et al. (1982), the 15 reciprocity items were pre-tested by 10 Saint Mary's University MBA students. Feedback on the necessity of all 15 items confirmed the results of domain sampling and pre-testing. Therefore, no ambiguous or redundant items needed to be eliminated (Hunt, Sparkman, & Wilcox, 1982).

Discriminant validity, or the ability to empirically distinguish between job love and other job motivational constructs such as job engagement and job satisfaction is a necessary precondition for the job love model. Therefore, the following hypotheses were tested:

H2: Job love is a distinct construct from job satisfaction

H3: Job love is a distinct construct from job engagement

Since job love is highly correlated with job engagement ($r = .70$, $p < .01$) and job satisfaction ($r = .62$, $p < .01$), it is conceivable that the three constructs comprise a unidimensional construct of job attitudes. It is also equally conceivable that the three constructs are distinct and that they comprise a three-factor model of job motivation. AMOS Structural Equation Modelling (SEM) was used to build and contrast two theoretical models of job attitudes. The first model was unidimensional. All eight indicators (means from each of the subscales for job love, job satisfaction, and job engagement) were loaded on a single factor. The second model was multi-dimensional. The indicators (means of the subscales) were loaded on their appropriate factor, either job love, job engagement, or job satisfaction. Both models were tested with maximum likelihood estimation and with all analyses being based on the covariance matrix. Parameter estimates and inter-factor correlations are shown in Table 6 [at end of paper].

The proposed unidimensional model of job motivation provided a poor fit to the data with $\chi^2(20, N = 310) = 387.7$, $p < .001$; NFI = .79; CFI = .80; RMSEA = .24, $p < .001$. The three-factor model provided a better fit to the data with $\chi^2(17, N = 310) = 176.14$, $p < .001$; NFI = .90; CFI = .91; RMSEA = .17, $p < .001$. The $\chi^2_{difference}$ is $(3, N = 310) = 211.56$, $p < .01$. And, since the $\chi^2_{difference}$ is significant, the three-factor model appears to be more appropriate than the unidimensional factor model. These results provide sufficient evidence to support the proposed

hypotheses (H2 and H3) that job love is distinct from job satisfaction and job engagement. Although the disattenuated correlations are high, they do not approach one, suggesting that the constructs are related but non-redundant.

To assess convergent reliability, the bivariate correlations were examined between the newly developed job love subscale average scores and the Hadley (2008) three-criterion model. All correlations were significant and strong. The lowest correlation was between the intimacy subscale and Hadley's question: "If we asked your significant other to describe how you feel about your current job, what would he or she say?" with $r = .48$, $p < .001$. The highest correlation was between the job love commitment subscale and Hadley's third criterion which asks respondents to indicate how they feel about their jobs on a scale from 1 (I hate it) to 10 (I love it). One-way ANOVA tests indicated that there was no statistically significant difference between the scores for Hadley's (2008) criterion measure and the newly developed job love measure with $F(3, 41) = 1.866$, $p = .15$ and $F(3, 41) = 1.044$, $p = .38$. These tests provide evidence of convergent validity and provide further support for H1.

To assess reliability of the new scale relative to other job attitude measures, scale reliability analyses were analyzed. The Cronbach's alpha for the new 15-item job love scale at .95 ($F(14, 309) = 32.96$, $p < .0001$) is stronger and more significant than that of the job satisfaction scale at $\alpha = .89$ ($F(14, 309) = 40.17$, $p < .001$), the job engagement scale where $\alpha = .94$ ($F(16, 309) = 53.43$, $p < .001$). Since the Hadley's measures are not scaled the same, the Standardized Cronbach's alpha is reported as .92 ($F(2, 309) = 1906$). Given these results, the following hypotheses were supported:

H1: Job love is measured as a three-factor construct comprising passion for the job, commitment to the job and organization, and intimate relationships with co-workers or clients.

H2: Job love is a distinct construct from job satisfaction

H3: Job love is a distinct construct from job engagement

Discussion

The research objective was to develop the most appropriate way to measure job love as a conative element. Dimensionality of the job love construct and measure was demonstrated through exploratory factor analysis. Divergent validity was demonstrated through structural equation modeling. Convergent validity was demonstrated through bivariate correlation analyses and analysis of variance. The final job love model demonstrated three-dimensions with unidimensionality within each subscale, reliability and internal consistency, construct (nomological and trait) validity, discriminant validity and convergent validity.

This model aligns with Kelloway et al.'s (2010) conceptualization of a tridimensional job love model that "is superior in a predictive sense to any of its three components alone" (p. 120). Support for this hypothesis does not, however, add insight into how these three components interact or combine in the measure. Kelloway et al. (2010) proposed that job love might be measured in one of three ways: 1) as a common factor/additive approach in much the same way that positive psychological capital is measured as an aggregation of hope, optimism, resiliency, and self-efficacy (Luthans, Youssef and Avolio, 2006); 2) as an interaction amongst the three sub-scales in much the same way that Sternberg (1987) operationalized eight different types of relationship love; 3) or in a taxometric way (Ruscio and Ruscio, 2004, 1995) whereby

respondents fall into non-arbitrary categories such as loving or hating their jobs. Although the best measurement method is not evident, this study provides new empirical evidence that the job love subscales are highly correlated and that they are significantly associated with outright self-declared love of the job. Further, face validity supports the notion that the dimensions are interdependent or, at a minimum, interrelated. People are likely to be committed to organizations if they are passionate about their jobs and have intimate relationships with their co-workers. Intimate relationships in the workplace are nurtured through the passion that people feel for their jobs and the mutual commitment that the co-workers share for their organization. People can give themselves permission to unleash their passions on the job because they have already made a commitment to the organization and because they are surrounded by supportive people.

The second and third hypotheses dealt with the ability to discriminate job love from other constructs that are commonly used in organizational behaviour scholarship to predict or otherwise understand employee motivation and organizational outcomes (Cronbach and Meehl, 1955). Although job satisfaction, job engagement, and love of the job overlap and share some commonalities, confirmatory factor analysis indicated that job love is a distinct construct from both job satisfaction and job engagement. The three separate constructs appear to address the three dimensions of the trilogy of mind: cognition, affect, and conation. Job satisfaction with its reliance on evaluative assessments such as “rate” and “believe, appears to measure the cognitive component. Job engagement and its evaluation of enthusiasm and happiness appear to measure the affect component. Job love with its evaluation of passion and love appears to measure the conative dimension.

Job satisfaction and job love appear to have fundamental differences in their latent constructs: Job satisfaction appears to capture into more cognitive aspects than affect or conation whereas job love appears to capture the conative motivational dimension more so than the cognitive or affective dimensions. The job satisfaction scale asks respondents to “rate their satisfaction” with or evaluate their beliefs about certain extrinsic and intrinsic job conditions. Respondents are not asked about their emotions or their discretionary effort. By contrast, the job love scales tap into the conative component through motivation items such as “I adore what I do at work” and “I love the people I work with” and action-oriented items such as: “I would do almost anything to do what I currently do in this organization” and “I would feel a deep sense of loss if I could no longer work with my co-workers/clients”. Therefore, job satisfaction and job love are fundamentally different constructs in that the former measures predominantly cognitive aspects while job love measures conative drive.

Although job engagement and job love loaded cleanly on two separate factors in SEM, they do share some commonalities. Job engagement may tap into some of the conation dimension through items such as “bursting with energy” and “inspires me”.

The two scales differ, however, in the content of their dimensionalities. Although the UWES scale and model conceptualize job engagement as three distinct dimensions of vigor, absorption, and dedication, all three dimensions appear to relate more to the passion component with correlations ranging from .62 to .71. The vigor item (“I feel bursting with energy”), the absorption item (“I am immersed in my work”), and the dedication item (“To me my job is challenging”) all appear to converge on the job love passion dimension. Job engagement does not appear to tap into the job love commitment dimension (“This organization has a great deal of personal meaning for me”) or the intimacy dimension (“I love the people I work with”). In other words, job love appears to be more of a holistic measure that taps into the interdependent aspects of passion, commitment and need for intimate relationships.

Implications for Future Research

From a practical perspective, the value that job love adds to the measure of the conative component is particularly interesting for positive organizational behaviour researchers. If the goal is to instigate a paradigm shift from a pre-occupation with profit to “the study of that which is positive, flourishing, and life-giving in organizations” (Cameron and Caza, 2004: 731), research into meaningfulness and love of work (Pratt and Ashforth, 2003) is now more possible with an empirical measure such as the job love scale. At a minimum, the presence of the word “love” in a work related context gives space for the further exploration of other conative constructs. The tri-dimensionality perspective of behaviour as an outcome of cognitive, affect, and conation adds potential richness to organizational behaviour research. Disappointing correlations between cognitive-based measures and organizational outcomes can be supplemented with enhanced understanding of the conative component of individual and organizational behaviour.

The proposition implied in this research is that job love can add incremental explanation of variance in employee behaviour beyond job satisfaction or job engagement. Because of its alignment with conation, job love may add significant value when used with cognitive or affective assessments. Future research needs to be conducted to determine what impact the trilogy of mind or conation alone can add to employee motivation and behaviour. This job love scale may be used to better understand what drives love and or conation. The 15 item scales could be subjected to confirmatory analyses in other geographic, demographic, and psychographic samples. Longitudinal studies would be valuable to assess the job love scales’s predictive qualities on outcomes such as productivity, organizational citizenship behaviour, psychological well being, and turnover intention.

Limitations

The generalizability of the job love scale is limited due to the sample in this research. Professional accountants and consultants have considerable autonomy and discretion about their hours of work and the clients they work with. Results may differ significantly for employees who have less job autonomy, empowerment, responsibility or discretion. Research on service workers, contingent workers and executives would provide rich insights about how job love can impact employee behaviour in different populations.

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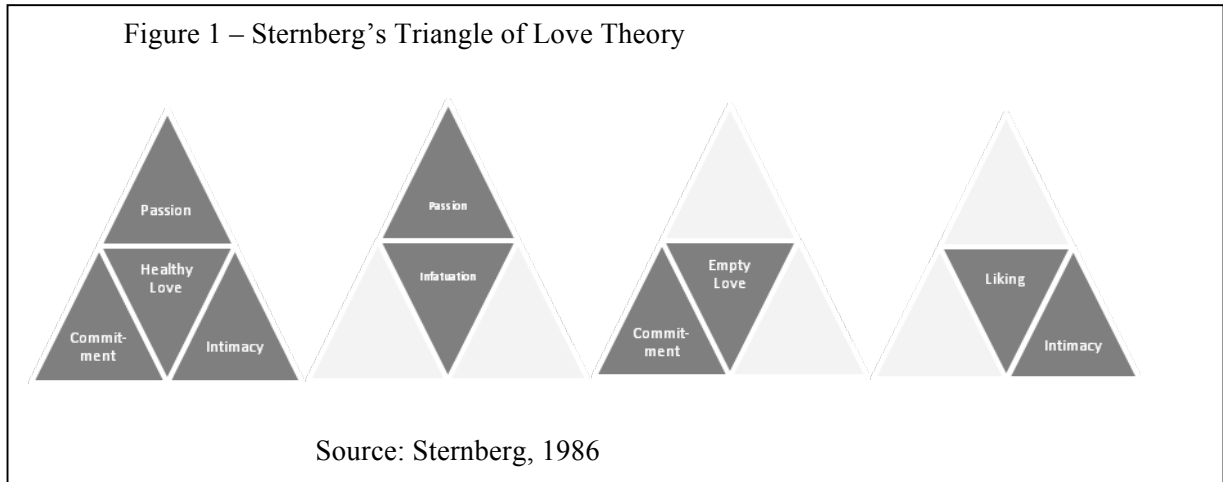
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Appendix A – Figure 1



Appendix B – Table 1

Table 1 – Comparison of Sample and Population Estimates

	CGA Population	CGA Sample	CMC Population	CMC Sample
Female gender	52%	54%	47%	48 %
Ontario residents	33%	35%	33%	35%
Professional average age	45	41	48	53
Intern average age	23	23	28	27
Consulting/public practice	27%	25%	NA	40%
Government & non-profit	20%	21%	NA	27%
Service industries	24%	24%	NA	24%

Source: CGA and CMC Associations Marketing and Communications directors

Appendix F – Table 5 Comparison of Item Means, Standard Deviations, and Factor Cronbach Alpha

Appendix C – Pearson Correlations for Job Love Items and Subscales

Item	Passion					Commitment					Intimacy							
	1	2	3	4	5	Ave	6	7	8	9	10	Ave	11	12	13	14	Ave	
1 Passion 1																		
2 Passion 2	0.82																	
3 Passion 3	0.77	0.84																
4 Passion 4	0.71	0.77	0.75															
5 Passion 5	0.72	0.81	0.72	0.80														
Passion Scale Average																		
6 Commit1	0.35	0.45	0.40	0.45	0.58													
7 Commit2	0.45	0.53	0.46	0.47	0.61		0.71											
8 Commit3	0.57	0.54	0.46	0.53	0.62		0.55	0.63										
9 Commit4	0.55	0.57	0.50	0.54	0.65		0.71	0.73	0.79									
10 Commit5	0.61	0.65	0.60	0.61	0.71		0.57	0.68	0.67	0.72								
Commitment Scale Average																		
							0.68											
11 Intimacy1	0.34	0.44	0.35	0.41	0.49		0.53	0.50	0.49	0.52	0.49							
12 Intimacy2	0.25	0.38	0.30	0.32	0.38		0.54	0.38	0.32	0.36	0.36		0.71					
13 Intimacy3	0.37	0.46	0.37	0.40	0.50		0.55	0.45	0.43	0.47	0.49		0.79	0.78				
14 Intimacy4	0.39	0.47	0.40	0.38	0.47		0.51	0.45	0.39	0.44	0.44		0.71	0.68	0.76			
15 Intimacy5	0.45	0.47	0.45	0.45	0.48		0.52	0.48	0.46	0.50	0.54		0.70	0.63	0.77	0.70		
Intimacy Scale Average																		
							0.51						0.59					

Note: All correlations are significant at the 0.001 level (2-tailed).

Appendix D – Total Variance Explained by Three-Factor Structure

Factor	Eigenvalue	% of Variance	
		Per factor	Cumulative %
1	8.56	57.09	57.09
2	2.10	13.99	71.08
3	1.23	8.22	79.30

Extraction Method: Principal Axis Factoring.

Appendix E – Table 4 – Comparison of Structure and Pattern Matrices

Table 4 – Comparison of Structure and Pattern Matrices

Paraphrased Item	Structure Matrix			Pattern Matrix		
	Factor 1 Passion	Factor 2 Intimacy	Factor 3 Commit	Factor 1 Passion	Factor 2 Intimacy	Factor 3 Commit
Job is a passion	0.89		0.58	0.91		
Adore what I do	0.94	0.50	0.61	0.95		
Keep interest engaged	0.90		0.55	0.97		
Wish friends as fulfilled as me	0.84		0.59	0.80		
So happy to do this job	0.86	0.53	0.73	0.67		
Love the organization I work for		0.60	0.78			0.73
Happy to spend rest of life	0.57	0.51	0.82			0.79
Feel org's problems are my own	0.58		0.79			0.74
Org has great deal of meaning	0.60	0.50	0.93			1.00
Do anything to do what I do here	0.71	0.51	0.78			0.55
We care deeply for each other here		0.85	0.57		0.81	
I love the people I work with		0.85			0.92	
I feel very close to the people here		0.92	0.55		0.92	
We value each other greatly here		0.83			0.83	
Would feel a deep sense of loss	0.52	0.80	0.57		0.70	

Extraction Method: Principal Axis Factoring.

Rotation converged in 6 iterations.

Rotation Method: Promax with Kaiser Normalization.

Appendix F – Table 6 – Standardized Parameter Estimates for Alternative Measures

<i>Item</i>	<i>1 Factor Model</i>	<i>3 Factor Model</i>		
		<i>LOJ</i>	<i>Job Sat</i>	<i>Job Eng</i>
LOJ Passion	.78	.84		
LOJ Commitment	.71	.65		
LOJ Intimacy	.60	.83		
Job Sat Extrinsic	.71		.70	
Job Sat Intrinsic	.51		.99	
Job Eng Absorption	.79			.81
Job Eng Dedication	.93			.96
Job Eng Vigor	.87			.88
<i>Inter-factor Correlations:</i>				
<i>LOJ</i>			.71	.84
<i>Job Satisfaction</i>				.67

ASB 2012
Organizational Behaviour Abstract

Corporate Social Responsibility: Beyond Donor Fatigue

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The increasingly frayed Canadian social safety-net is creating challenges for medium and small enterprise which reach beyond donor fatigue. Small to medium size businesses often face a diversity of challenges that are unique to their size and position within their given markets. The increasing social demands being placed on the private sector represent unique stakeholder challenges for some small community based businesses. This paper is founded in a case study of one small business and the challenges and solutions it has experienced.

ASB Conference 2012 Proceedings

Organizational Theory Stream

Dalhousie University

28-30 September 2012

Understanding Work-Life Balance Through Existentialism

This paper examines the dilemma of work-life balance and how we can make sense of the choices people make in the quest for a happy and meaningful life. The relationship between work and non-work activities is complex especially today as devoting oneself to work seems to have become the path to a meaningful life for many people. One way to make sense of how people navigate their lives is through Existential philosophy. Existential concepts including death, contingency, situatedness, choice, authenticity and bad faith can be used to understand the relationship between an individual's work and non-work life, and how the pieces of a life fit together.

Introduction

Reflecting on the meaning of life may be spurred by psychological crisis but it may also arise from an acute awareness that Henry David Thoreau was correct: most people do lead lives of quiet desperation. (Bellioiti, 2001: 10)

Work, be it a necessary evil due to the financial imperative or our first love, seems to be one of the most important determinants of whether a person considers his or her life to be meaningful. "Work is the most common experience of adult life... some love it, others hate it, but few of us are able to avoid it... because we spend two-thirds of our waking life on the job, work is the way we come to know the world and are known to the world... work becomes our identity, our signature on the world... to work is to be and not to work is not to be" (Gini, 2000: ix). However, ultimately the pieces that make up a life, especially one's work life, must fit coherently together in order for one to feel that life is meaningful. Albert Camus' legendary Myth of Sisyphus demonstrated what could arguably be the predicament of the human condition in relation to work, but also in life in general. Sisyphus is condemned by the Gods to push a stone up a hill only to have it roll back down, and this continues forever (Camus, 1967). Although some people love their work and their life, a Sisyphian picture of the futile life is undoubtedly the case for many others, whether they would choose to admit it or not. For a significant number of people, life and work can be mostly daily drudgery, a treadmill of existence they are compelled to run upon, and from which they gradually watch time and their life pass by.

There is a growing concern of the inadequate balance between one's work life and non-work life (Bunting, 2004; Clark, 2000; Ciulla, 2000; Judge et al., 2006; Nippert-Eng, 1996). In the recent past, work and home have been viewed as two separate spheres of life, but it is becoming increasingly apparent that what happens in one can significantly affect the other. As has been frequently pointed out, life is an unpredictable journey and we are not given a set of rules on how to make choices and live our lives. "Meaningful work isn't just about the meaning of the paid work we perform; it's about the way we live our lives... it's the alignment of purpose,

values, relationships, and activities that we pursue in life” (Chalofsky, 2003: 58). Since a life is made up of various parts, work is only one of potentially many “places” where meaning is created or found. To make sense of the puzzle of work-life balance we can use existential philosophy to provide a way to understand individual existence and how choices are made in the pursuit of the meaningful life.

In this paper we first discuss the meaningful life and the nature of work including the challenge of work-life balance. Then we outline how existentialism can be used to bridge these two areas and thus make sense of the work-life balance discussion.

The Meaningful Life

The question of what makes up a meaningful life has baffled philosophers and lay people alike for centuries, dating back to the days of Socrates and Plato (Baird, 1985; Baumeister, 1991; Belliotti, 2001). Is meaning discovered? Is meaning created? Is there any meaning at all? The question of meaning is of much greater concern now in Western society due to the more critical, questioning nature of people, the general effects of scientific discovery, longer life-spans, a better economic situation for many, and critical world events such as the 9/11 attacks (Baumeister, 1991; Cottingham, 2003; Eagleton, 2007; Gems, 2003; Hanfling, 1989; King & Nicol, 1999; Wrzesniewski, 2002). The question of meaning is particularly poignant due to the gap which has been left from a diminishing emphasis on religion for many people. “For most of human history no one had to search for the spiritual in their lives...at the core of every culture was a religion, with sacred times and places set aside for public rituals...for many these holy places are less and less familiar today” (Fairholm, 1996: 17). Additionally, the events of September 11, 2001 in the United States had a significant impact upon many individuals. Since 9/11 many are re-evaluating their lives and their work, as they search for a deeper meaning in life, more than just achieving career success (Garcia-Zamor, 2003; Howard, 2002; Wrzesniewski, 2002).

Historically, for most people meaning has been based on a religious belief, living a “good life,” and honoring a greater power, with the hope of a utopian afterlife. Others, such as Nietzsche and Schopenhauer, have held a nihilistic perspective, i.e., that there is no meaning to be found and that the question itself is absurd (Belliotti, 2001; Schopenhauer, 2000). “That human life must be some kind of mistake is sufficiently proved by the simple observation that man is a compound of needs which are hard to satisfy; that their satisfaction achieves nothing but a painless condition in which he is only given to boredom; and that boredom is direct proof that existence is in itself valueless, for boredom is nothing other than the sensation of the emptiness of existence” (Schopenhauer, 2000: 69). Still others argue that if meaning is to be found in life, it must be created by the individual (Metz, 2001). Some note that meaning is only temporary, and that people continually fluctuate between boredom and fleeting feelings of fulfillment (Schlick, 1989).

Most philosophers agree that a universal meaning of life does not exist, because meaning is only in the eyes of the beholder and can therefore vary greatly (Belliotti, 2001; Frankl, 1985). “There is no such thing as a universal meaning of life but only the unique meanings of the individual situations” (Frankl, 1985: 55). They would also agree that in order for a life to be meaningful, it is necessary that the individual feels that his or her life is meaningful (Baird, 1985). It does not matter how the life is judged by others, only how it is perceived by the

individual. Frankl (1985) argues that meaning can be found in any activity, even within the concentration camps of Nazi Germany in which he was a prisoner. Some philosophers contend that meaning must be discovered, like finding buried treasure, which implies that it is out there somewhere to be found by each individual. Creating meaning, on the other hand, implies that meaning is made, built, or crafted (Baird, 1985). For Baumeister (1991), a meaningful life is made up of purpose, value, efficacy and self-worth, and that when all four of these factors are met, life is meaningful. Wohlgennant (1989: 35) defines meaning “as a feeling that human beings generally have when they achieve a sufficient number of objectives that they have set themselves, or when they can bring about the realization of values they recognize.”

The search for meaning is clearly dependent on the conditions of a person’s life, as not everyone has the same choices about how he or she is to live. Some people are not in a position to pay much attention to the deeper issues of meaning as they are consumed with basic survival (Baumeister, 1991; Maslow, 1943). This is especially true of those living in the developing world but also applies to many in the developed world as well. “Desperate people do not ponder the meaning of life. When survival is at stake, when the events of each day or each hour carry a sense of urgency, life’s meaning is irrelevant... meaning of life is a problem for people who are not desperate, people who can count on survival, comfort, security, and some measure of pleasure” (Baumeister, 1991: 3). This fits with Maslow’s Hierarchy of Needs theory which can be viewed on a continuum with survival needs at one end and self-actualization or a meaningful life at the other end (Maslow, 1943). This continuum however should not imply that a life devoted to survival cannot still be meaningful. They are not mutually exclusive and in fact a focus on survival can make a life meaningful given such a clear and present purpose. However, it seems that the question of meaning is a greater concern today because many people have more time to dwell on it.

There appears to be a paradox currently taking place in Western society – an increasing trend toward superficiality (materialism, celebrity worship, internet obsession), and at the same time, there are indications that people are also hungering for a more meaningful existence. Despite great advances in medical care and technology, and a much higher average standard of living, general well-being and happiness levels have not changed in decades (Easterbrook, 2003; Myers, 2000; Seligman, 2002). Anxiety, depressions, use of medication, and suicide levels have, in fact, all dramatically increased, and meaning has become increasingly attached to security, comfort, consumption and material gain (Cottingham, 2003; Easterbrook, 2003; Fromm, 1955, 1976; Handy, 1994; Myers, 2000; Wattanasuwan, 2005; Whalen, 1999).

The belief that increased wealth and materialism along with the resulting greater security and comfort would be the path to fulfillment and happiness has not materialized. “The great self-confidence of the Western technological nations, and especially of the United States, was in large part because of the belief that materialism – the prolongation of a healthy life, the acquisition of wealth, the ownership of consumer goods – would be the royal road to a happy life” (Csikszentmihalyi, 1999: 822). However, the emphasis on materialism, physical comfort, and safety has resulted in what some are calling a “meaning deficit” within both the individual and society (Fox, 1994; Fromm, 1976; Maslow, 1971; Needleman, 1991). “Self-actualization tendencies must compete with many other tendencies as man proceeds to make his own nature...conceivably, man may evolve in such a way as to lose his self-actualization drive and diminish his potential” (Greening, 1971: 9). Fromm (1976: 5) notes, “we are a society of notoriously unhappy people: lonely, anxious, depressed, destructive, dependent – people who are

glad when we have killed the time we are trying to save.” We have become accustomed to a rather mundane existence, resulting in a loss of self but we still long for a different existence (Gaarder, 1994: 15). Frankl (1985) emphasizes that the problem is that people do not know how to live in this world and face what he refers to as an “existential vacuum.” “No instinct tells him what he has to do, and no tradition tells him what he ought to do; sometimes he does not even know what he wishes to do. Instead, he either wishes to do what other people do (conformism) or he does what other people wish him to do (totalitarianism)” (Frankl, 1985: 128). Therefore, despite unparalleled technological and material progress, finding meaning is difficult especially when it comes to work.

It is clear that there are no absolute answers when it comes to the meaningful life; that a meaningful life is determined by how the individual subjectively experiences and constructs his or her “puzzle of life,” and therefore makes sense of his or her life. This highlights the need to understand the relationship between work and non-work and how they fit together to form a life.

Work

Over the centuries work has changed substantially, and today, globalization, technology, and a shift to a service economy are rapidly altering the nature of work, with the consequence that the distinction between work lives and non-work lives has become blurred (Fox, 1994; Handy, 1984; Law et al., 2002; Moen, 1998; Ransome, 1996). For many people, their work community is the most important community that they belong to even replacing family, church and social groups (Fairholm, 1996). Despite the increased importance of leisure in recent years, it is “still secondary to work” (Mutlu & Asik, 2002: 19).

Work provides the economic means to live, however it can also be an avenue to fulfill social needs, shape self-identity, influence status and self-esteem, be an outlet for creative expression, a means of growth, and a major source of fulfillment in life or what Maslow termed “self-actualization” (Ciulla, 2000; Gini, 2000; Handy, 1984; Karp & Yoels, 1981; Law et al., 2002; Maslow, 1971; Moen, 1998; MOW International Research Team, 1987; Mutlu & Asik, 2002; Ransome, 1996; Rinehart, 2006; Seligman, 2002). Put differently: “People work for money – but they work even more for meaning in their lives” (Pfeffer, 1998: 112). The importance of work has grown significantly to the extent that some people now frame work within a religious context, and the organization that they work for acts as a secular religion (Ashforth & Vaidyanath, 2002; Bell & Taylor, 2004; Bowles, 1989; Herman, 2002). Ransome (1996: 53) argues that, “Work constitutes a crucial manifestation of the basic human need of expression through action.” Scholars are increasingly arguing that a person’s work is strongly connected to his or her life and that work “cannot be understood apart from the whole” (Hughes, 1997: 389). Mutlu and Asik (2002: 18) contend that, “self-actualization is the outcome of an unending process of development and could also be realized through work.” No matter how work is viewed, it is clear that for most people it is a major component of what defines them as human beings (Karp & Yoels, 1981; Law et al., 2002; Moen, 1998), and is an integral part of who we are, i.e., the “whole person” (Fairholm, 1996). In short, “We find our identities and our meanings only within communities, and for most of us that means at work, in a company or an institution” (Solomon, 2004: 1028). Many scholars have noted the increased connection between career and life (Law et al., 2002), and Fox (1994) has gone so far as to argue that work should be redefined

within the context of humanity's place in the world. Work, then, can either significantly contribute to or detract from the individual's quest for a meaningful existence.

Unfortunately, however, organizational mergers, downsizing, technology, acquisitions and strategic alliances have resulted in employees spending less time with one organization, many people having periods of unemployment, an increased trend toward contingent and part-time work, and people having multiple careers, all of which creates stress to individual workers (Nachbagauer & Riedl, 2002; Ransome, 1996; Rifkin, 1995; Turner, Barling, & Zacharatos, 2005; Zikic & Richardson, 2007). The 'job for life' concept of the past has now become obsolete for many people (Collin & Young, 2000; Hall, 1996). Additionally, many workplaces are being described as "toxic environments" with a variety of problems for employees: high levels of stress, depression, feelings of being treated unfairly, bullying, burnout, low productivity, high absenteeism, turnover, workaholism, and work-related health problems (Browne, 2002; Bunting, 2004; Gini, 2000; Goldthorpe, 1968; Jamal & Baba, 2000; Kelloway & Day, 2005; Kimura, 2003; Korman, 2001; Leiter & Maslach, 2001; Lerner, Levine, Malspeis & Agostino, 1994; Malakh-Pines & Aronson, 1988; Turner et al., 2005).

There are a multitude of ways to consider the role and meaning of work in a life, predictably resulting in a lack of agreement on the topic: "That work has been arbitrarily privileged over other forms of activity and discourse in contemporary Western societies has not led to any consensus about the meaning of work nor about the orientations that workers conventionally have about work" (Grint, 2005: 24). One intriguing method to determine the importance of work which has emerged in recent years, is the Job-Career-Calling model outlined in *Habits of the Heart: Individualism and Commitment in American Life* (Bellah et al., 1985). In this model, work can be viewed in three different ways with very different outcomes and potential influences on a meaningful life. A "Job" is work done just for the money. It is not necessarily something people enjoy and in fact may be something that they actively dislike. What is important is the income from the job that is needed to live. Individuals are not very invested in such work and it is not where they find happiness or meaning. Most of us have had to do this kind of work at sometime in our working lives. A "Career" is about much more than money. It is work where there is much greater investment of time, money, and emotion. People in careers want ongoing growth and development and envision a productive future in that work, whatever it is, whether their career is as a lawyer, teacher, or janitor. They want their work to be something that they enjoy and are much more attached to a career than a job. It is a significant part of self-identity, and research shows it significantly impacts on the ability to find meaning in life (Wrzesniewski, McCauley, & Rozin, 1997). Lastly, there is work that would be considered a calling. A "Calling" is work that people would do even if they had no need for money or that they would do for free. It is work that they feel incredibly drawn to and that they feel is their life purpose. It is the number one source of their sense of self and meaning in life. Callings do not have to be religious conversions, though that is primarily from where the term originates. A Calling, by definition, means that the work is of such importance to the individual that it no longer feels like "work." The Job-Career-Calling model helps us understand the importance of work in an individual's life but it has been subjected to limited research, and the research has been predominantly quantitative. The model helps in the examination of how people orient themselves to their work according to the three categories. It illuminates the varying degrees of investment a person has in their work and suggests a hierarchy of satisfaction, i.e., less for job, more for calling. It also suggests that it may be possible to reframe the understanding of one's work and therefore result in increased work satisfaction.

Adding a new voice to the dialogue concerning the meaning of work is the 'Spirituality and Work' movement. The topic of spirituality and work first appeared in the early-1990s and has grown quickly over the past fifteen years (Dalton, 2001; Elmes & Smith, 2001; Fox, 2003; Fox, 1994; Garcia-Zamor, 2003; Gibbons, 2000; Harrington et al., 2001; Howard, 2002; Lips-Wiersma, 2002, 2004; McCormick, 1994; Mitroff & Denton, 1999a; Ottaway, 2003; Tischler, 1999). This interest in spirituality and work has resulted in a plethora of research, a presence at academic business conferences, and consulting businesses. Spirituality and work is viewed from many perspectives and has been defined in a variety of ways. Some scholars regard it from a religious perspective, i.e., bringing God into work practices, while others view it from a secular perspective. This secular spirituality perspective is well described by Harrington et al.: "Spirituality at work is not about religious beliefs...it is about people who perceive themselves as spirited beings, whose spirit needs energizing at work. It is about experiencing real purpose and meaning in their work beyond paychecks and task performance" (Harrington et al., 2001: 155). Dalton (2001: 18) maintains that "it is possible to speak of spirituality as a universal human activity because life is filled with experiences that drive us to question and seek answers on the meaning and purpose of existence." Further, Mitroff and Denton (1999b: 83) define spirituality "as the basic feeling of being connected with one's complete self, others, and the entire universe." No matter how it is defined, it is clear that spirituality in the workplace is an attempt to bridge the gap between work and the overall pursuit of a meaningful life.

Of course, no discussion of one's work life and meaning would be complete without considering adult development and the problems of turning points or crisis times that we may encounter as we age. A person at age forty may view his or her life very differently than when he or she was thirty or twenty years of age, and therefore we need to include in our discussion the topic of adult development, and especially the adult lifecycle: "Most men undergo a mid-life change in style of work and living. Early adulthood produces qualities of strength, quickness, endurance, and output. Middle adulthood is a season when other qualities can ripen: wisdom, judiciousness, magnanimity, unsentimental compassion, breadth of perspective, the tragic sense" (Levinson, 1978: 25-26). As an individual changes, so too may his or her relationship to work. The research on adult development indicates that there are "turning points" in a life; the "mid-life" crisis and in more recent years, the "quarterlife" crisis (Robbins, 2008; Thorspecken, 2005). Crisis points in life have been described as key times in a person's life when he or she is struggling with major choices that affect their life, especially as it pertains to meaning. "Emerging adults experiencing the quarterlife crisis might be searching for relief from confusion as to which path in life to follow" (Butler, 2005: 65) and especially of interest to scholars has been the middle stage of adulthood, this being when many people seriously reflect upon their life: "As a person enters the Mid-life Transition, he or she is likely to review his/her progress and ask: 'What have I done? Where am I now? Of what value is my life to society, to other persons, and especially to myself?'...he must deal with the disparity between what he has dreamed of becoming" (Levinson, 1978: 30). Interestingly, the mid-life years are frequently also a time when people experience a career plateau (Nachbagauer & Riedl, 2002). It is then when people may change their expectations for their life prompting them to seek out mid-career renewal (Grierson, 2007; Hollis, 2008; Leider, 1976).

The interplay between a life lived and considered, the role of work in such a life and then the implications of providing for a sense of meaningfulness in that life are the concerns we bring to this paper concerning work life balance. To bridge between work and non-work aspects of this

discussion, and help us understand how individuals make sense of their lives we propose an informed use of Existential philosophy.

Existentialism

Existential philosophy provides compelling insights into the nature of the individual self, the circumstances and dilemmas of everyday life, and in particular, it gives us a way to view the creation of individual meaning, i.e., the *authentic life* in existential terms. Existentialism “attempts to understand how events in life fit into a larger context...involves the process of creating and discovering meaning, which is facilitated by a sense of coherence (order, reason for existence) and a sense of purpose (mission in life, direction)” (Reker & Chamberlain, 2000: 1). Existential philosophy can arguably be traced back to Socrates when he famously stated that a key problem of humanity was a lack of self-examination – “the unexamined life is not worth living.” However, the initiator of existentialism, as we know it today, is considered to be Soren Kierkegaard, as he was reportedly the first to reject the emphasis on universalism in favor of a focus on the individual - “my listeners, do you at present live in such a way that you are yourself clearly and eternally conscious of being an individual?” (Kierkegaard, 1956: 195) Since Kierkegaard, many others have contributed to our understanding of existential philosophy – Buber (1958, 1967), Husserl (1967, 1970), Camus (1967), Heidegger (1967), Sartre (1956, 1970), Tillich (1952) and Frankl (1985), each providing his or her own unique perspective (Collins, 1952; Reynolds, 2006; Wahl, 1969). Despite existentialism’s ancient history, it is more recently rooted in nineteenth century Europe and only really came into prominence in the twentieth century following the end of World War II (Allen, 1973). After the war, Europe went through a long period of recovery and the general population experienced profound feelings of confusion, questioning, and disillusionment with religion and other social institutions, and were therefore, looking for a philosophical direction (Breisach, 1962; Reynolds, 2006). Heidegger, Sartre, and other philosophers provided answers and direction for individual life through their existential philosophy.

Existentialism is based on the premise that “existence precedes essence” – that people are thrown into the world and simply exist, and their essence is created through the lives they choose to live. The emphasis of existentialism is on the individual’s experience with life and not on a preconceived human nature. As Sartre famously explained: “What do we mean by saying that existence precedes essence...we mean that man first of all exists, encounters himself, surges up in the world – and defines himself afterwards” (Sartre, 1970: 28). This puts the onus, and hence responsibility, on the individual and how he or she chooses to live life. This notion of the individual creating meaning is quite different from the belief that humanity has a pre-determined essence (see Locke, Hobbes, or Rousseau) or that it is for example the mode of production that creates man’s essence (Marx & Engels, 1963, 1968), although Sartre was willing to strongly consider the latter possibility in *Search for a Method* (1963). In existentialism, essence and therefore meaning is created by the individual on an on-going basis throughout his or her life.

Although there are many types of existentialism, there is general agreement that existentialism is focused on how the individual self creates meaning in a chaotic world (Breisach, 1962; Reinhardt, 1960; Reynolds, 2006; Sartre, 1956, 1970; Wahl, 1969). Existential thought highlights the enormous possibilities of human existence and what can “be” for individual life; the focus is on individual *Being* and the reflexive *Self* that is always being constituted. For the Existentialists,

“Wherever man has seen his life and his world as infinitely possible, as infinitely variable, as infinitely problematic, there existentialism exists as a region of the mind” (Karl & Hamalian, 1974: 13) and “philosophy is essentially the study of Being” (Wahl, 1969: 95), thereby broaching the question of what it means to exist. “Existence is reached most immediately and certainly in the existing self, although not even the existentialists can settle among themselves upon the exact nature of this self as revealed in a primary inspection” (Collins, 1952: 196).

Applying Existentialism to Work-Life Balance

People are border-crossers who make daily transitions between two worlds – the world of work and the world of family. People shape these worlds, mold the borders between them, and determine the border-crosser’s relationship to that world and its members. Though people shape their environments, they are, in turn, shaped by them. (Clark, 2000: 748)

In what at times seems a chaotic variety of concepts proposed by the existential philosophers, there are nonetheless six major existential concepts that are discernable and aid in understanding how work and non-work spheres of life intertwine. These concepts are death, contingency, situated, choice, authenticity and bad faith.

Death

Life is a limited experience, as all of us will die at some point. Death’s significance, for the existentialist, is that the recognition of death causes “anguish” as death ends all possibilities for the individual and rarely does a person know when their death will occur (Tillich, 1952). This has become increasingly important in Existential psychotherapy, a psychotherapeutic practice which “seeks to bring to the person’s living awareness consciousness of the non-being aspects of his potential” (Bugental, 1965: 15); that is, accepting the limits of one’s death gives meaning and finite boundaries to one’s life. This condition gives rise to the term used by German philosophers (such as Nietzsche and Heidegger) for the aware and temporally situated person, Dasein: “Dasein, Heidegger has told us, is always ahead of itself, always poised before possibilities as yet unrealized... but there is for Dasein a final possibility, a possibility to end all possibilities, namely death” (Inwood, 1997: 69). For Heidegger, therefore, there are three reasons for people to focus on death to help give meaning to life: (1) the knowledge of death helps to shape life; (2) the awareness of impending death gives freedom of action, and; (3) death forces us to focus on time as it puts an end to possibility (Harman, 2007; Inwood, 1997).

Death is the only certainty in life. All living organisms die; there is no exception. However, human beings alone are burdened with the cognitive capacity to be aware of their own inevitable mortality and to fear what may come afterwards. (Wong, 2008: 65)

Heidegger states, “it is only in full...awareness of our own mortality that life can take on any purposive meaning” (Stokes, 2002: 151), but the importance of death goes far beyond just inevitability, for “There is nothing timeless about man; on the contrary, he is time-riven” (Harper, 1972: 48). The awareness of time passing and inevitable death, reinforces the need for individuals to make choices and not to “put off” life as some may be inclined to do, not recognizing that time

is ticking away on their mortality each day. Solomon (1974: xiii) notes, “a threat of imminent death – or even a passing thought of our mortality – is sufficient to wrench us out of our current involvements – even if but for a moment – and force us to look at our lives.”

From an existential perspective, the individual’s awareness of death affects the urgency of his or her choices throughout life, and therefore affects how time is viewed. A recognition of one’s mortality should increase awareness that time is limited, and, that at the moment at least, they have freedom to live life as they see fit. “Death is potentially (as awareness and meditation) an incentive to dedicate oneself to what matters, to ignore the trivial and to start living an authentic life” (Tomer & Eliason, 2008: 11). One’s awareness of death will be a major influence on the degree of urgency with which one views life and therefore makes their choices. Some people treat death as an objective experience, i.e., everyone dies and so I can distance myself from that thought, whereas the existentialist challenge is to treat death as subjective, and focus on death as innermost experience, i.e., the end of your existence. This is profoundly difficult as we are busy living our lives and view death as an abstraction, a concern that is far in the future. However, people can face their impending death and use this as motivation toward a more meaningful existence. Given our focus upon work life balance, death is especially useful to put life in perspective when it comes to viewing work and non-work activities.

Of course, for most of us the timing of death is a mystery; it can come at any time. It can appear gradually in our old age or it can be thrust upon us suddenly and unexpectedly and “Purely rational thought, though it can explain the causes of death in scientific terms, can never account for the fact that we can die at any moment and are beings who, in any case, must die sooner or later. The length of our lives seems to be fixed in a purely arbitrary way which, being inexplicable, defeat the powers of reason” (Roubiczek, 1964: 113). Consequently, we cannot plan our lives with certainty and the person who delays doing what he or she would really like to do in life until retirement may find themselves out of luck. Many people are counting down the years until they retire so that they can then take part in activities that would be very rewarding to them. However this strategy is dependent on them maintaining good health, and may, in the end prove to be the wrong strategy depending on how their future unfolds. This leads to our discussion to the second pertinent theme of the existential philosophers, contingency.

Contingency

Human existence is contingent; little of life can be predicted with certainty, and therefore, the struggle to live a meaningful, authentic life is “contingent” on many factors. “Contingency flows away from us on every side as though our every act were a stone dropped in a pond. Our smallest acts, our most casual choices, have the potential of reaching to any point in their consequences. We can never imagine all the possible permutations and ramifications of our doing and not doing” (Bugental, 1965: 297). Since our existence is continually evolving and the self is changing, what may be meaningful at one point in time may have little or no meaning at a different point in time. Therefore, the effect of one’s work may be very different as we go through the aging process. Bugental (1965: 40) states, “Man lives in contingency...can and does take action that affects his awareness and experience...takes such action without ultimate guide posts of universal values or built-in instincts...in constant relation with his fellows while yet being separate from them.” Despite efforts to live authentically, it is difficult for most people as many events seem beyond their control. Therefore, slipping into “bad faith” is always a potential danger, and shadows every person’s existence. For example, an occupation may be meaningful

for many years for an individual but later in life hold little interest besides the salary; unfortunately, a typical situation for many people (Grierson, 2007; Hollis, 1993). Each day people are faced with a variety of choices and possibilities; many of which they are fearful of and which cause anxiety, since the results could be positive or negative.

Such dilemmas highlight the challenge for the individual as he or she lives, for it is not enough to choose what one's existence is at a particular point in time. Instead, the search for meaningful existence is never-ending as people move along the continuum of their life, continually 'interpreting' (or re-interpreting) the world around them, thus creating themselves, while at the same time needing to make sense of unforeseen events, e.g., the recent financial crisis. The challenge is to confront one's contingency and accept the uncertainty that is one's life; because, ultimately, we cannot anticipate these events and must accept the 'unknown' nature of the human existence.

Choice

Since we are conscious and free, we can choose our lives, and thus we bear ultimate responsibility for our lives (Breisach, 1962; Bugental, 1965; Reinhardt, 1960; Reynolds, 2006; Solomon, 1972). For the individual, then, life is a purely subjective experience and therefore, of primary importance is how choices and actions (and the subsequent results of those choices and actions) are interpreted, and affect the self. Sartre argues that, "Existentialism, in our sense of the word, is a doctrine that does render human life possible... which affirms that every truth and every action imply both an environment and human subjectivity" (Sartre, 1970: 24). Each individual places a value on the various aspects of his or her life, both work and non-work; these valuations ultimately create meaning, and constantly change.

Sartre notes somewhat pessimistically that we are "condemned to be free," i.e., freedom brings choice and subsequent responsibility for our actions (Sartre, 1956). Freedom of choice is a concept that many do not accept, preferring instead to believe that life is not up to them. Some may believe that it is easier to deal with life if we think that we are really not in control, and therefore cannot be totally responsible for our lives. However, if we are free, as existentialism strongly emphasizes, all actions (and non-actions) in life are choices, and in the end we define ourselves through our choices. Our freedom gives us these choices, choices that result in the path that we follow, and ultimately in the life that we live: "Life is nothing until it is lived; but it is yours to make sense of, and the value of it is nothing else but the sense that you choose" (Sartre, 1970: 54).

The belief that humans have total freedom of choice has been echoed by many scholars including the psychologist Viktor Frankl who argues that even when we cannot control actions, we can still choose how to react to any given situation. Frankl uses the example of his own experiences of being in the concentration camps of Nazi Germany to illustrate that even in terrible circumstances humans can choose how they view and react to life (Frankl, 1985). Sartre agrees with Frankl's contention that the individual is "free as a conscious being to choose the meaning that s/he will give the facts in his/her situation" (Lavine, 1984: 359). According to this philosophy, a person's life is made up of the sum of his or her decisions that are made each day. "Man is nothing else but what he purposes, he exists only in so far as he realizes himself, he is therefore nothing else but the sum of his actions, nothing else but what his life is" (Sartre, 1970: 41). Even though people for many reasons may pass up opportunities in life, Sartre (1956: 472)

also says, “We can even choose not to choose.” And, in not choosing, he is arguing, we have taken an action and made a choice. However, this ability to choose does not mean that we are not subject to our context as well.

Situatedness

Naturally, all people do not have the same degree of freedom in life and therefore their choices, because all lives are not situated the same, are held within what Sartre refers to as one’s ‘facticity’ (Sartre, 1956). Choices are made from the possibilities that the individual has in front of him or her at a particular point in time, and therefore, choice can be considered a relative concept. Frankl (1985: 143) contends that “Man constantly makes his choices concerning the mass of present potentialities; for which of these will be condemned to non-being and which will be actualized?” Therefore, all life is situated within a personal context, or world, and is created within that perceived world. “The existentialist meaning of the world is disclosed only when the question is subjectively formulated: “How do I exist in the world?”” (Schrag, 1977: 27)? In effect, we then create the world in which we live.

Additionally, we are not completely isolated and unaffected by others. People are situated within the world and, therefore must deal with daily living which Heidegger calls “average everydayness” (Heidegger, 1976). And we share this world with others, and are, arguably, dependent on other people to give meaning to our lives as meaning tends to come through our relationship to other people. “By declaring that man is responsible for and must actualize the potential meaning of his life, I wish to stress that the true meaning of life is to be discovered in the world rather than within man or his own psyche, as though it were a closed system” (Frankl, 1985: 133). If meaning is discovered as we exist in the world and perhaps greatly based on the values of the majority, then this may account for the importance placed on work and why people may choose the work that they do. Work is of such importance today because success and status in life tends to be measured in relation to other people – salary and position. For example, medical and law professions are, in Western society, highly sought after occupations as these professions provide both a high status and a significant salary. This attitude undoubtedly has the potential to lead to an overemphasis upon one’s work in one’s life.

Authenticity

Existentially, the overwhelming existential challenge for the individual is the creation of “authentic” or meaningful life, and this is unique to each individual. “Meaning in life is obtained through an authentic existence. The conditions for achieving this kind of existence are commitment to actualize one’s possibilities to choose and decide about the possibilities and to act on them” (Orbach, 2008: 284). The starting point for authentic action is the recognition that meaning must be determined by the individual self (Lavine, 1984). Such an individual must accept responsibility for his or her life and make living an authentic life a continual and never-ending goal: “Man moves physically, morally, and intellectually in view of an end, in order to attain a greater richness of his own being and existence as well as in order to enrich and enhance the being he finds in the surrounding world” (Reinhardt, 1960: 198). Authenticity is subjective to the individual and only manifests itself in the life that is ultimately lived, a life in which he or she is conscious and free. The imagined life is not authentic, but the actualized life based upon the freedom to manifest from awareness of choice is.

So the authentic life is contingent on how the individual views the world and his or her beliefs about meaning, and “each individual has to come to her own conclusions about authenticity” (Golomb, 1995: 200). Therefore, authenticity cannot be judged by another person, but can only be assessed by the individual herself. I may believe that my friend is living the “wrong” life however the authenticity of another person’s life is not for me to decide. It is subjective and so this judgment of life can only be made by the individual. Bugental (1965: 33) states, “authenticity is a term used to characterize a way of being in the world in which one’s being is in harmony with the being of the world itself...we are inauthentic to the extent that we are in conflict with the givenness of being.” The authentic person recognizes that human existence is a mystery, and he or she ventures forward creating meaning as he or she journeys through life (Breisach, 1962). In effect, the individual “chooses” who to be and then leads his or her life in accordance with the choice.

However, since the self is reflexive and ever changing, the effect of our work and non-work experiences may change. On an abstract level we know that we are a “different” person in our fifties than we were in our forties or our thirties. But it is important to recognize that this difference is not an abstraction; it is the condition of the human self as we exist over time. If we realize that our self is always changing, then it is easier to understand when our lives no longer fulfill our desires and when it is time to make new choices. Inevitably there will be ebbs and flows in a life and other aspects of life will emerge which will affect how we view ourselves. As people change throughout their lives they will tend to view their life through a new lens, perhaps with new possibilities. This has consequential effects upon how individuals then view their work. For example, upon graduation from university many students will tend to be seeking a job or career that pays them the highest salary. They may choose work based on financial need if they have large financial debt accumulated throughout their university years, and therefore pass up work that they would prefer in favor of work that pays the highest salary. However, as people age, their life circumstances will undoubtedly change, as well as their personal views on what is important to them. This means that they may look to other possibilities when it comes to work or to expand components of their life or to add new avenues of life.

Bad Faith

Instead of making authentic choices, people may instead tend to act in “bad faith,” meaning that the individual acts in accord with assigned definitions of self, taking neither full credit or blame for his or her actions. It is “an attempt to escape from . . . [individual] freedom by pretending that human affairs are unavoidable or necessary, as is the causal order of things” (Lavine, 1984: 361). This is echoed by Barnes (1959: 48) who comments, “...man cannot bear the realization that all the values he lives by, his purposes, his projects are sustained by his own free choice; he finds it too great a strain to accept sole responsibility for his life. Therefore he takes refuge in the belief that somehow the external world is so structured that it guarantees the worth of its objects, it provides specific tasks which have to be done, it demands of each person a definite way of living which is the right one.” Free will and free choice are difficult concepts, and many people do not even think about how they live their lives.

The challenge is to live the authentic life which each person must define for themselves, and most importantly, to try to avoid the inauthentic life or living in bad faith. However, authenticity is a dynamic state of existence and meaning for the individual will change over time. Much of life will be unexpected and our situation of life will continually change. There is a

changing context of life and we are influenced by many factors: family, beliefs about meaning, values, friends, and social norms, e.g., contribution. Heidegger says that we “fall” (fallenness) into inauthenticity and become what is expected of us in the “public arena” and behave according to the norms and rules of society. We escape from our true selves into a public life that is untrue or false. “A self worth wanting – a ‘complete’, ‘emotional’, ‘moral’ sort of thing, to which adjective such as ‘true’, or ‘authentic’ tend to be attached – is something with a character; where emotions, decisions, actions and reactions spring from a reasonably coherent cluster of beliefs and values” (Wilkes, 1999: 29). We choose our self through the choices we make in our work and non-work areas of our life based on our own internal evaluative process of perceived possibilities. “Man must make himself man through the mundane labor of decision-making... He will choose the alternative which best fits with the referent criterion if he has an explicit awareness of all the significant factors involved in the decision. Thus explicit awareness is necessary for effective decision-making.” (Johnson, 1971: 11). We cannot choose our life in good faith without questioning our own being which highlights the need for self-reflection if we are to make appropriate choices about our lives, including our work lives. This resonates with Socrates’ famous statement, “the unexamined life is not worth living,” and this has been interpreted as “the unexamined life is a wasted life,” because it means that someone is sleepwalking (unconsciously) through life (Morris, 1999). Socrates argued that we must question who we are and what is important in our life, and that it is only through self-awareness that we then choose our lives and live a meaningful life. The opposite is to live in “bad faith” or “inauthentically”, a sort of unconscious living with a non-acceptance of one’s freedom. For example, a person may stay in a marriage or job in which they are not happy but never even know or acknowledge that it is the source of their unhappiness. Living in “bad faith” is based on self-deception and falsehood, with the opposite being self-awareness and recognition of both our circumstances and our freedom to choose: “We say indifferently of a person that he shows signs of bad faith or that he lies to himself... [we] shall willingly grant that bad faith is a lie to oneself, on condition that we distinguish the lie to oneself from lying in general” (Sartre, 1956: 48).

As noted previously, many people have believed that the path to a meaningful life was through economic success which means that work must be a priority. However, this has not led to happiness and fulfillment (Frankl, 1978). People are searching for more than economic success in the workplace, and again, this may help to explain both the rise of the spirituality and work movement and the existentialist’s prescient grasp of the nature of human alienation and therefore of our need for authenticity. Even though Fromm is not considered to be an existentialist, this view seems somewhat similar to his (Fromm, 1976) concept of a “having” orientation to life versus a “being” orientation to life. Fromm argued that the majority of people in Western society are focused on a *having* orientation where the goal of life is to accumulate and own; a *being* orientation, on the other hand, is about experiencing life. “I refer to two fundamental modes of existence, to two different kinds of orientation toward self and the world, to two different kinds of character structure the respective predominance of which determines the totality of a person’s thinking, feeling, and acting” (Fromm, 1976: 24). So, according to Fromm, a having orientation, i.e., having a spouse, having a car, home ownership, requires very different values and attitudes toward life, than someone who is oriented towards being, and who experiences joy and fulfillment within daily existence.

Additionally, a person may at times be living an unconscious life and/or be living in bad faith, and not know this. The mid-life period seems to be for some at least, a time of increased awareness and possibly an awakening to the signs of “bad faith.” Many people come to midlife

pondering the question “what am I doing with my life”? The mid-life questioning, according to an existential framework, can be viewed as a gap or incongruence between “real” life and “authentic” life. “How many of us, arriving at mid-life or later, having done all the “right” things, having served the expectations of our family and our tribe, feel so little at home in our lives” (Hollis, 2008: 55)? If the individual feels his or her life is no longer or perhaps never was authentic (i.e., living in bad faith), then it is not surprising for him or her to experience anxiety and depression (Grierson, 2007; Hollis, 1993). Some people at this stage of life can make changes to their overall life however others may find this difficult depending on their situation of life.

Conclusion

Through an examination of some specific views concerning perspective on the role of work in an individual’s life, we have found our way to discussing an existentialist perspective on the same. We have highlighted and summarized some key tenets of an existentialist perspective as being pertinent to the discussion of the role of work in one’s life. This examination has created the potential for an interesting perspective upon the notion of work life balance. As illustrated, so many of the foci of existentialism point towards ideas of aware navigation of choice and change, but with the inevitable backdrop of a finite existence. This simple observation means that considerations of work life balance that are not fluid, choice driven and processural, ultimately constitute acting in bad faith. Put simply, the journey of making authentic choices trumps any objective definition of a balanced life and the pursuit of a balanced life to the exclusion of situated choice is inauthentic.

Ultimately, it does not matter how we view work or non-work; all that matters is that we choose our self by choosing our life freely. The meaningful life may indeed be the “balanced” life or however else a person chooses to live but this must be judged by the individual, not society. According to Sartre, we must never allow our humanity to be defined by others, only by ourselves (Sartre, 1956). Additionally, no matter how well society may view a type of work, e.g., medical doctor or teacher, or even the notion of the “balanced” life, it may be the wrong choice for that particular individual. Put another way: “I may be connected to value, contribute to a wide network of relationships, and be deeply appreciated by my society, but if I lack the feelings, attitudes, intentions, and beliefs appropriate to my situation, my sense of meaninglessness will be acute” (Bellioiti, 2001: 80). And so it is up to the individual to ascertain whether the need for balance is authentic or externally imposed. Make no mistake about it; there are multiple areas of existential danger at play here. The potential danger in the appeal of the concept of work life balance is that it is held in a series of intersecting discourses that concern belongingness, meaningfulness, and even a sort of labour temperance. In a perfect storm of discontent, ambiguity and loss of meaning, we find similar conditions to those that led to the post-WWII explorations of existentialisms. Perhaps this time, there is a real opportunity to undertake the difficult challenges that concern the very act of being aware of the role of choice in authentic living. With the specific contemporary dialogue concerning work life balance, the danger is not in how we choose to live, but rather in how we make the choices that therefore lead to a meaningful life.

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CEO Prestige and Acquisition Likelihood

From a six-year sample of S&P500 companies, we find evidence that the personal prestige of the acquiring firm's CEO affects the likelihood of making an acquisition. We note distinct effects of prestige due to informal power and to status. Status tempers the ambition due to informal power.

Introduction

Mergers and acquisitions (M&A) at best have an insignificant short-term effect on value creation for the acquiring firm, and over longer-term, a negative impact (Jensen and Ruback 1983; Fuller, Netter et al. 2002; King, Dalton et al. 2004; Tuch and O'Sullivan 2007; Aybar and Ficici 2009). So the continued use of M&As in spite of this evidence therefore raises the question of motivation as an important topic of research. Research clusters around two main arguments about why acquisitions are done. First, firms believe that they will create value (Seth, Song et al. 2002) or synergy (Chatterjee 1986) by acquiring another firms because it enables them to diversify into new markets, seek economies of scale or scope (Walter and Barney 1990), or accelerate product development (Capron 1999). However, other studies suggest the driver behind acquisitions instead lies with the executive responsible for the acquisition. This "managerialist" view argues that acquisitions are made primarily to personally benefit the decision-making executive, whether by obtaining extra financial rewards (Wright, Kroll et al. 2002), reducing future employment risk (Amihud and Lev 1981), preserving family control (Miller, LeBreton-Miller et al. 2010), or succumbing to personal hubris (Roll 1986; Hayward and Hambrick 1997).

However, another source of possible benefit to CEOs that has received little attention is their personal prestige. Prestige is undoubtedly important for the CEO, providing advantages such as higher compensation (Wade, Porac et al. 2006), and making it easier to foster resources and lower costs (Malmendier and Tate 2005; Chen, Hambrick et al. 2008; Bothner, Kim et al. 2009). Its value is also apparent for the firm through higher IPO valuations (Pollock, Chen et al. 2010), better firm growth (Kor and Sundaramurthy 2009), and improved investor perceptions (Certo and Hodge 2007). CEO prestige has been described both a significant source of informal power due to social networks extending beyond the company (Shaw, Brown et al. 1998), and as a form of "status capital" (D'Aveni 1990). Yet earlier research suggests these two purported sources of prestige exert contrasting influences on M&A activity, with higher power linked to more acquisition activity (Chikh and Filbien 2011), while higher status makes M&As less likely (Palmer and Barber 2001). We therefore lack an understanding of how CEO prestige affects acquisitions. This question is important since M&As are among the riskiest strategic moves, and involve long-term, substantial and complex resource allocations (Bower and Gilbert 2005) with

the highest stakes and the most substantial resource irreversibility (Chen and MacMillan 1992; Nutt 2001).

This paper asks to what extent does CEO prestige affect the likelihood of making an acquisition. Based on earlier characterizations of CEO prestige, we describe it using the distinct perspectives of informal power and status. We argue that CEOs “take” prestige from lower-power actors, and “receive” prestige due to the deference of lower-status actors. While deference occurs in both, “deference to those with the power to hurt or help you” is distinct from “from deference to those you honor and respect” (Pearce 2011:7). Our results suggest that high-status executives are more hesitant about engaging in M&A activity, while those with more informal power are more likely to acquire other firms. We also present evidence suggesting that high status tempers the M&A ambitions of high power CEOs.

Literature Review

The Role of CEO Attributes in Acquisition Likelihood

CEO attributes have been recognized as an explanation for acquisition risk-taking beyond traditional firm- and industry-level antecedents. Experienced executives may be more willing to acquire other firms because they have learned lessons from prior acquisitions (Haleblian, Kim et al. 2006). However, executives approaching the end of their career become more risk averse and less likely to acquire as they realize that they may not necessarily be able to benefit from the acquisition’s longer-term returns (Matta and Beamish 2008).

Compensation schemes alter an executive’s risk propensity, where stock options encourage acquisition activity by providing an upside pay option (Sanders 2001). On the other hand, equity ownership results in a U-shaped relationship with acquisition activity, where increasing equity initially emphasizes potential loss and suggest less likelihood (Sanders 2001), but eventually full ownership encourages acquisition, since owners are considered more credible than agent CEOs by the market and cannot be fired (Eisenmann 2002).

Some research has attempted to probe psychological effects on acquisitions. Executive hubris, the unassailable belief that one is acting in the best interests of the shareholder based on overconfidence in their ability to affect outcomes, can result in increased likelihood to acquire (Roll 1986; Hayward and Hambrick 1997; Malmendier and Tate 2008). Coupling this overconfidence with a heightened craving for attention also leads to increased acquisition likelihood (Chatterjee and Hambrick 2007).

Hypothesis Development

The dual nature of CEO prestige has been identified by several studies. Finkelstein (1992) suggested dual informational and symbolic roles. Certo (2003) argued that personal prestige consisted of a combination of human capital, the public’s belief in one’s “smartness” (Piketty 1998:115) and social capital, the “good ol’ boys” network that promotes loyalty and the ability to co-opt (Finkelstein 1992) through direct and indirect links to other individuals and institutions (Adler and Kwon 2002).

Prestige is also one of the four unique sources of executive power (Finkelstein 1992), each acting independently with strategic outcomes (Chaganti, Dananpour et al. 2001). While prestige is the sole form of informal power among these sources, formal power is derived from the other three sources: organizational structure and hierarchical authority (structural power), the ability to act on the shareholders' behalf or reduce board influence (ownership power), and the experience needed to deal with environmental contingencies (expert power) (Finkelstein 1992). Formal power results in more acquisition activity (Finkelstein 1992) because one can ignore dissenting views (Chikh and Filbien 2011). However since informal power has origins outside the firm, while formal power derives from structures and relationships within the firm, we do not expect to be able to infer similar relationships with strategic action. For instance, while formal power tends to increase with tenure, prestige power does not (Buchholtz and Ribbens 1994). Likewise, formal power can help in recovery from bankruptcy, while prestige power does not (Brockmann, Hoffman et al. 2004). Informal power therefore has distinct effects on strategic outcomes from formal power.

We therefore have little understanding of the role of informal power that underlies prestige on acquisition likelihood, nor do we understand how informal power and status interact. We next build upon the informal power and status perspectives of CEO prestige to derive a set of testable hypotheses.

“Receiving” Prestige: The Status Perspective. CEO prestige is “the property of having status...due to membership in elite social circles” (D’Aveni 1990:121). Individuals in a group collectively define a shared set of performance expectations based on taken-for-granted beliefs, according to Expectation States Theory, a principal model of status (Fisek, Berger et al. 1991; Berger, Ridgeway et al. 1998). The social group defines a legitimated prestige structure based on the performance expectations of the group members (Balkwell 1995; Berger, Ridgeway et al. 1998), where lower-status members defer to the higher-status members based on status characteristics such as age, experience, rank, education, social network or other socially significant characteristic. This deferential behavior legitimates the structure in that it explains and supports its continued existence (Berger and Luckmann 1967). Deference has been noted in studies of individuals (Berger, Ridgeway et al. 1998), in financial firms (Podolny 1993), and in semiconductor companies (Podolny, Stuart et al. 1996). In essence, executives “receive” prestige through the respect and admiration of lower-status organizational members (Magee and Galinsky 2008).

CEO Status and Acquisition Likelihood. In return for deference, high-status executives at the apex of the legitimated prestige structure are expected to act consistently with legitimated behavior norms. Otherwise, those who deviate from the accepted socially behavior norms lose status (Younggreen and Moore 2003) through two mechanisms: major changes in the executive’s performance, or activation of a new status characteristic (Berger, Ridgeway et al. 1998). If the executive acts in a risky way, performance outcomes become more extreme, with a higher likelihood of total or partial loss (Sanders and Hambrick 2007). As performance fails to meet expectations, lower-status members within the prestige structure conclude that status is no longer due to the status characteristic upon which the structure is based. Sanctions are imposed (Giordano 1983), which may include the search for an alternative status characteristic to judge relative status (Webster Jr. and Rashotte 2010). If the executive lacks this characteristic, while a lower-status actor possesses it, status is transferred from the executive to the other actor. In this

way, status “leaks” from higher-status actors to lower-status actors (Podolny 2005). To avoid leaking status, high-status actors are reluctant to engage in relationships with lower-status actors (Podolny 2005). Because executives treasure their status as an intrinsically valued resource (Huberman, Loch et al. 2004), they are naturally highly reluctant to surrender the benefits it bestows (Fredrickson, Hambrick et al. 1988; Cannella and Shen 2001; Khurana 2001). We should therefore observe a negative relationship between CEO prestige and the likelihood of engaging in acquisitions.

Hypothesis 1: CEOs with higher status are less likely to acquire firms than CEOs with lower status.

“Taking” Prestige: The Power Perspective. Alternatively, consistent with resource dependency theory (Pfeffer and Salancik 1978), personal prestige is formed through the ability of high-prestige actors to dominate lower-prestige actors because of their superior ability to control resources (Magee and Galinsky 2008). Executives consider prestige as a form of informal power (Fredrickson, Hambrick et al. 1988; Finkelstein 1992) based on associations with powerful and elite contacts as well as tacit knowledge and skills (Finkelstein 1992), where executives control access to other social networks and the resources those networks control (Brockmann, Hoffman et al. 2004). In essence, executives “take” prestige from others, taking advantage of lower-prestige actors who are more dependent on others for key resources such as information (Bunderson and Reagans 2011).

CEO Informal Power and Acquisition Likelihood. The advantage in resource access and control encourages extreme behavior (Bunderson and Reagans 2011) because as high-power members, they have easier access to information, lower transaction costs (D'Aveni 1990), and they can more easily recover from any loss if the bet proves wrong. Therefore, in the case of inappropriate strategic action, high prestige CEOs can acquire new resources at lower cost than their less prestigious counterparts (Chen, Hambrick et al. 2008). With a greater ability to undo the effects of a regretted choice, executives have a lower aversion to risk (Josephs, Larrick et al. 1992). High-prestige actors therefore have little to lose by risky action. This extra resilience can also be stored for future use (D'Aveni 1990) and persuades executives to take on more risk. In one study, CEOs with more extensive elite connections were more likely to complete acquisition deals in spite of a negative market reaction to acquisition announcements (Chikh and Filbien 2011). We therefore expect a positive relationship between a CEO's power and the likelihood of engaging in acquisitions.

Hypothesis 2: CEOs with higher power are more likely to acquire firms than CEOs with lower power.

CEO Informal Power and CEO Status Interaction. Finally, there remains the interaction case where CEOs possess both high power and high status. Studies point to two contrasting arguments on the relationship with acquisition likelihood. On one hand, their superior power can compensate for any risk of status leakage. A study of Formula 1 teams supports the idea that high power can effectively overcome the status leakage arising from interacting with lower-status actors (Castellucci and Ertug 2010). Likewise, status combined with informal power derived from centrality in prominent social networks provides both the incentive to increase status and the power necessary to implement change that results in increased acquisition likelihood (Palmer and Barber 2001).

Alternatively, extremely high status executives, “CEO celebrities,” become distracted from their duties towards the firm (Bothner, Kim et al. 2008; Malmendier and Tate 2009) because their superior power affords them the discretion necessary to pursue personal pet projects, while their superior status affords them the ability to foster resources in spite of early failures in these pet projects. For instance, the former co-CEO of Research In Motion, Jim Balsillie, eventually spent more time on trying to acquire a National Hockey League franchise and to establish a new international relations think-tank than on managing the firm. Although he lacked the power to force the NHL to grant him a franchise, his status provided him the visibility and the access to key social networks necessary to pursue his ambition. In diverting their attention to matters beyond the firm’s strategy, high power executives with high status become less prone to address their firm’s strategic issues and therefore they are less likely to acquire others. We therefore offer two contrasting hypotheses on the relationship between CEO prestige and the likelihood of engaging in acquisitions.

Hypothesis 3a: CEOs with higher status and high power are more likely to acquire firms than CEOs with lower prestige (low power and low status).

Hypothesis 3b: CEOs with higher status and high power are less likely to acquire firms than CEOs with lower prestige (low power and low status).

In summary, the moderated relationships result in four possible combinations of informal power and status. Table 1 summarizes the hypotheses, with acquisition likelihood described relative to the case in the lower left quadrant where CEOs have both low informal power and low status.

Table 1: Theorized Effects of CEO Prestige on Acquisition Likelihood

		Status	
		Low	High
Informal Power	High	Higher likelihood (resource control) H2	Higher likelihood (power compensates for status leakage) H3a Lower likelihood (distraction) H3b
	Low	-	Lower likelihood (status leakage) H1

Method

Sample

In our search for high sample variance, we developed an initial panel of 704 CEOs of S&P500 firms between 2005 and 2010, resulting in 2828 unique cases. Within the panel, there were 407

acquisitions that include a publicly disclosed purchase price according to the Thomson SDC M&A database. With missing data and removing outliers, the final panel consisted of 643 CEOs of S&P500 firms with a total of 2584 cases between 2005 and 2010. T-tests detected no significant differences in CEO age or CEO tenure between sampled and non-sampled cases. However, sampled firms were significantly larger than non-sampled firms. A subsequent t-test pointed to firms that acquired other firms being larger than those that did not. The sample spanned 62 2-dig SIC industries, with no single industry representing more than 7% of the sample and thereby suggesting that no single industry dominates.

Variables

Dependent variables. We employ two measures of acquisition risk-taking: a dummy variable identifying whether or not an acquisition was made in a given year (*M&AInYear*), and the number of completed acquisitions per year (*NumberM&As*). We use a direct measure of risk-taking based on resource size rather than a ratio measure since it allowed for better control of firm size through a separate control variable and avoided possible spurious results due to correlations among the denominators on both sides of the regression equation (Devers, McNamara et al. 2008; Wiseman 2009). Data was drawn from COMPUSTAT, BusinessWeek Executive Profiles, SEC 10K and DEF14A filings, and company websites.

Independent variables. CEO prestige is measured in terms of personal status and personal informal power. Since all cases consider the CEO, the top-ranking executive of the acquiring company, rank is not a status characteristic considered in this study. The status measure is instead based on the CEO's education background. We use two measures of status, gauging the extent to which the CEO's education can be considered elite. First, we note the *highest level of education* (0=no high school, 7=doctorate), followed by the *prestige of the academic institution* on a 0-3 scale (Finkelstein 1992). Data was obtained from 10-K and DEF14A reports available from the SEC EDGAR database, and BusinessWeek Executive Profiles.

CEO power appears in two forms, informal and formal (Finkelstein 1992; Daily and Johnson 1997; Brockmann, Hoffman et al. 2004), both of which are considered in this study. Prestige power, derived through associations with others who are powerful and elite, is informal. We measure this informal power by the number of the CEO's board directorships (*number of corporate boards*), where more directorships imply higher informal power. The *number of corporate and non-profit boards* is also measured. We also consider the relative prestige of the firm on whose board the CEO sits, since being a director of Google would be considered more prestigious than sitting on a board of a small, local company. We therefore note the stock rating at the end of each calendar year of each company using the rating of the firm's general financial condition provided by Standard & Poor's Stock Quality Index (Finkelstein 1992). The scale extends from a 0 for a non-rated firm, to 10 for a firm rated A+ by S&P. To determine the *S&P board rating*, we sum the scores of the firms on whose board the CEO sits. However, executives also possess a formal power, drawn from their role and position within the firm.

Principal component analysis revealed a two separate CEO prestige factors: one for *CEO education status*, the other for *CEO informal power* (eigenvalues =2.08 and 1.45), together explaining 70% of the total variance. Sampling adequacy (KMO=0.60) exceeded the generally acceptable minimum of 0.5 (Hair, Anderson et al. 1998). Reliability was acceptable (Cronbach α

=0.64) (Eisenhardt and Bourgeois 1988; Finkelstein 1992). All independent variables were centered to reduce the effects of multicollinearity (Jaccard and Turrisi 2003).

Control variables. To compare the effects of formal power with those of informal power, we measure the *CEO structural power* through the CEO total compensation relative to the mean compensation of the other members of the top management team (Daily and Johnson 1997). Compensation data was obtained from EXECUCOMP and from SEC DEF14A proxy statements. Alternatively, since chairman duality can be a source of formal power, we note whether the CEO also has the chairman title in the dichotomous variable *CEO chairman*.

To control for alternative explanations for acquisition risk-taking, we include CEO-level and firm-level controls. At the CEO-level, we include controls for *CEO age*, *CEO tenure*, and *firm tenure*, all factors associated with affecting risk-taking preferences. At the firm level, we consider prior performance, slack and size. First, *firm performance* in the year prior to the investment accounts for the prospect theory-driven perception of potential gain or loss in risk attitudes of the executive (Wiseman and Gomez-Meija 1998). *Firm performance* was measured as the firm Return on Assets (ROA) relative to the average of all S&P500 firms in the same 2-dig SIC industry for a given year. A common gauge of firm profitability, ROA captures the degree to which management has effectively deployed firm assets, thus it is useful in assessing the performance implications of business strategies (Geletkanycz and Hambrick 1997). Secondly, firm slack affects risk attitudes because of the availability of extra resources in case of surprise opportunities or to react to crises (Bourgeois 1981). Risk-taking is more likely for firms with the resources to fund them (Holmes Jr., Bromiley et al. 2011). *Potential slack* captures the ability of a firm to secure resources with debt financing. Since some firms have zero debt, I used the debt-to-equity ratio to measure the inverse of *potential slack*. There are two contrasting views about the relationship between slack and risk-taking. On one hand, as Geiger and Cashen (2002) argue, potential slack incurs future expenses in the form of interest payments, triggering potential changes in analyst opinions, affecting future debt costs and the stock price, and accentuating bold action, such as innovation. Alternatively, the ‘hunger-driven view’ of potential slack (Hambrick and D’Aveni 1988) suggests when slack levels fall, executives will act more boldly in an attempt to restore them (Palmer and Wiseman 1999), while high-slack firms become complacent.

Moderating variable. With data from COMPUSTAT, we defined industry *demand uncertainty* as demand turbulence or the standard error of the overall industry net change in net sales over a five-year time period prior to the investment announcement (Dess and Beard 1984).

Models

We are interested in the extent to which CEOs acquire firms in a given year, so our unit of measure is the CEO-year. We considered whether a fixed effects model or a random effect model would be most appropriate for testing the hypothesis. Although they have similar features, the principal difference is in their assumptions of error correlation (Rabe-Hesketh and Skrondal 2005; Bollen and Brand 2008). A random effects model assumes that our data is a random sample of a larger population of CEOs, so that the time-invariant variables are not correlated with the time-varying variables. Since the error coefficients are generally smaller than those of a fixed effects model, smaller effects can be detected. However, if the assumptions are not true, then the model produces biased coefficients. A fixed effects model assumes that the time-invariant differences between the individual CEOs do correlate. If the random effects assumptions are true, both

models should converge to the same coefficient values and that the fixed effects model needlessly permits the latent time-invariant variables to correlate with time-varying ones. The null hypothesis in the Hausman test states that the random effects model is true, while the alternative hypothesis is that at least one coefficient differs and so the fixed effects model is more realistic. We compared our random-effects models with fixed-effects models using the Hausman test, and random-effects models were always preferred. Postestimate testing confirmed the presence of within-group autocorrelation of the time-varying variables since some CEO attributes such as compensation depended to a large extent on the prior year's value.

We therefore test the hypotheses using a random-effects model of the pooled six-year data spanning 2005-2010 with added corrections to account for within-group autocorrelation and heteroscedasticity. We also use two separate models to provide a more robust test of the hypotheses. The panel logistic model tests the likelihood of making an acquisition in a given year, while the panel Poisson model tests the number of yearly acquisitions. Logistic models are considered inferior to Poisson models because they ignore information about multiple acquisitions in the same year, but logistic models are superior to Poisson ones because they are less sensitive to impact of acquisitive outliers (Palmer and Barber 2001). So we consider support strong when both types of model provide confirmatory results, and to be tentative when only one type of model provides confirmatory evidence.

Results

The variable statistics and the bivariate correlations are shown in Table 2. The distinction between informal and formal power appears warranted since a reliability test of *CEO informal power*, *CEO structural power* and *Chairman duality* revealed a Cronbach alpha of only 0.44, below the generally accepted threshold in management literature of 0.6 (Eisenhardt and Bourgeois 1988; Geletkanycz and Hambrick 1997). There is also a strong correlation between *CEO informal power* and the quadrant factor variable. Since these variables are not used together in any model, this is not a concern.

We first test the effects of *CEO informal power* and *CEO status* using the logistic and Poisson regression models shown in Table 3. The autoregressive correlation with a one-year lag to correct for autocorrelation requires groups of at least 2 observations, which reduced the sample by 88 CEOs. Unequal spacing within groups eliminated another 12 CEOs, leaving a sample of 543 CEO with 2454 cases. Base models containing only control variables are listed as Model 1 for a likelihood model and Model 3 for a Poisson model. Comparing these models to Models 2 and 4 that include CEO informal power and status effects suggest significant effects.

Table 2: Variable Statistics and Correlations

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9
1 M&A in year	0.14	0.35	1								
2 Number of M&As	0.17	0.47	0.90 ***								
3 M&A investment (ln)	0.97	2.47	0.96 ***	0.89 ***							
4 Y2005	0.16	0.36	0.03 +	0.04 +	0.03 +	1					
5 Y2006	0.16	0.37	0.04 *	0.04 +	0.04 *	-0.19 ***	1				
6 Y2007	0.17	0.37	0.08 ***	0.07 ***	0.07 ***	-0.18 ***	-0.20 ***	1			
7 Y2008	0.17	0.38	-0.04 *	-0.04 +	0.05 *	-0.20 ***	-0.20 ***	-0.20 ***	1		
8 Y2009	0.17	0.38	-0.05 **	-0.04 *	-0.05 *	-0.20 ***	-0.20 ***	-0.20 ***	-0.21 ***	1	
9 CEO Age	0	6.24	0.03	0.04 *	0.04 *	-0.05 **	-0.03 +	-0.02	0.00	0.03 +	1
10 CEO tenure (ln)	0.02	0.83	0.02	0.03	0.03	-0.03 +	-0.02	-0.01	-0.00	0.01	0.35 ***
11 Firm size	0.00	1.26	0.13 ***	0.15 ***	0.15 ***	-0.02	-0.00	0.00	0.01	0.00	0.11 ***
12 Firm debt/equity	0.00	0.55	-0.04 +	-0.00	-0.03	-0.02	-0.04 +	0.00	0.04 *	0.02	0.07 ***
13 Firm performance	0.00	0.07	0.02	0.02	0.02	0.06 **	0.07 ***	0.05 *	-0.08 ***	-0.11 ***	0.02
14 CEO cash compensation (ln)	0.00	1.08	0.04 +	0.05 *	0.04 *	0.20 ***	-0.01	-0.05 **	-0.06 ***	-0.04 *	0.08 ***
15 CEO Structural Power	0.00	0.51	-0.05 *	-0.02	-0.05 *	-0.03 +	-0.01	-0.03 +	0.04 +	0.00	0.09 ***
16 Chairman duality	0.63	0.48	0.01	0.01	0.01	0.02	0.01	0.01	-0.00	-0.02	0.30 ***
17 CEO Status	0.00	1.50	-0.18 ***	-0.18 ***	-0.17 ***	-0.01	-0.00	0.01	0.01	-0.00	0.06 *
18 CEO Informal Power	-0.31	0.80	0.17 ***	0.14 ***	0.17 ***	0.01	0.01	0.00	-0.00	-0.01	0.15 ***
19 Quadrant	0.00	1.26	0.15 ***	0.12 ***	0.15 ***	0.00	0.01	0.00	.- 0.01	-0.01	0.16 ***
20 Uncertainty			0.05 **	0.03 +	0.06 *	-0.08 ***	-0.01	0.06 **	0.09 ***	0.01	0.07 **

Variable	10	11	12	13	14	15	16	17	18	19	20
9 CEO Age											
10 CEO tenure (ln)	1										
11 Firm size	-0.06 **	1									
12 Firm debt/equity	-0.02	0.08 ***	1								
13 Firm performance	0.05 **	-0.03	-0.15 ***	1							
14 CEO cash compensation (ln)	-0.07 ***	0.15 ***	0.03 +	0.00	1						
15 CEO Structural Power	0.15 ***	0.00	-0.01	-0.00	0.18 ***	1					
16 Chairman duality	0.37 ***	0.10 ***	0.05 **	0.01	0.08 ***	0.13 ***	1				
17 CEO Status	-0.02	-0.10 ***	0.04 *	-0.00	-0.01	0.02	0.02	1			
18 CEO Informal Power	0.16 ***	0.12 ***	0.01	0.01	0.02	0.03 +	0.19 ***	-0.31 ***	1		
19 Quadrant	0.12 ***	0.12 ***	0.02	-0.03	0.01	0.03	0.15 ***	0.01	0.68 ***		
20 Uncertainty	-0.00	0.22 ***	-0.02	-0.00	0.07 ***	-0.00	0.05 *	0.05 **	-0.06 **	0.06	1

Table 3: CEO Prestige Multilevel Panel Regressions (DV: M&A Likelihood)

Variable	Logistic Regression		Poisson Regression		Hyp.
	Base Model	CEO Prestige	Base Model	CEO Prestige	
	Model 1	Model 2	Model 3	Model 4	
Intercept	-2.29 (0.17) ***	-2.29 (0.16) ***	-2.26 (0.17) ***	- 2.22 (0.17) ***	
Year 2005	0.46 (0.18) *	0.51 (0.17) **	0.85 (0.19) ***	0.79 (0.19) ***	
Year 2006	0.51 (0.18) **	0.46 (0.17) **	0.80 (0.18) ***	0.76 (0.18) ***	
Year 2007	0.68 (0.17) ***	0.69 (0.16) ***	0.95 (0.18) ***	0.91 (0.18) ***	
Year 2008	0.18 (0.19)	0.19 (0.18)	0.35 (0.19) +	0.33 (0.19) +	
Year 2009	0.13 (0.18)	0.18 (0.17)	0.24 (0.18)	0.22 (0.18)	
CEO Age	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	
CEO Tenure	0.16 (0.06) *	0.11 (0.06) +	0.18 (0.07) *	0.11 (0.07)	
Firm Size	0.21 (0.04) ***	0.20 (0.04) ***	0.27 (0.04) ***	0.23 (0.04) ***	
Firm Debt/Equity	-0.34 (0.13) **	-0.28 (0.11) *	-0.13 (0.11)	-0.08 (0.11)	
Firm Performance	-0.06 (0.74)	0.27 (0.72)	0.02 (0.77)	0.12 (0.78)	
CEO Cash Compensation	0.11 (0.05) *	0.07 (0.04) +	0.05 (0.05)	0.04 (0.05)	
CEO Structural Power	-0.37 (0.09) ***	-0.35 (0.09) ***	-0.16 (0.10)	-0.14 (0.10)	
CEO Chairman	-0.03 (0.11)	-0.05 (0.10)	-0.16 (0.12)	-0.19 (0.12)	
CEO Status		-0.16 (0.04) ***		-0.21 (0.05) ***	H1 (-)
CEO Informal Power		0.25 (0.05) ***		0.33 (0.07) ***	H2 (+)
CEO Status X Informal Power		0.05 (0.04)		0.18 (0.06) **	
N	2454	2454	2454	2454	
No. of CEOs	543	543	543	543	
Wald χ^2	94.40 ***	154.01 ***	92.83 ***	150.82 ***	

There is a significant direct effect ($p < 0.001$) between *M&A likelihood* and *CEO status*, in Models 2 and 4, suggesting that CEOs with higher education status are significantly less likely to make an acquisition. This supports Hypothesis 1, which argued that CEOs with higher status were less likely to acquire other firms. There is also a significant ($p < 0.001$) relationship between *CEO informal power* and *M&A likelihood* in Models 2 and 4, suggesting that CEOs with more informal power through directorships are more likely to make an acquisition. This provides evidence supporting Hypothesis 2, which argued that CEOs with more informal power were more likely to acquire others.

Several relationships with the control variables are noteworthy. First, when the effects of CEO prestige are added to Model 1, the significant coefficient with *CEO tenure* becomes non-significant. This suggests that informal power and status may overwhelm the effects of CEO lifecycle, where they take more risks as they develop their power network and learn from past experiences, consistent with institutionalization of power (Ocasio 1994). Secondly, potential slack has a partially significant effect with M&A likelihood, since there is a significant coefficient in the logistic models (Models 1 and 2) but no significant coefficient in the Poisson models (Models 3 and 4). Since the debt-to-equity measure is the inverse of *potential slack*, the significant result is consistent with the idea that extra slack allows executives to engage in riskier strategic behavior such as M&As. Thirdly, cash compensation in the form of salary and bonus encourages M&A activity, however its effect becomes non-significant when prestige is considered. Fourthly, CEOs with more structural power have a lower likelihood of acquiring firms. Finally, as expected, larger firms are more likely to engage in an M&A. We conclude that there is significant evidence of longer tenured CEOs and CEOs of larger firms more likely to acquire firms because of significant coefficients in both the logistic and Poisson models, but only partial support for the other control relationships, since they have non-significant results in the Poisson model.

Testing Hypotheses 3a and 3b assumes an interaction effect between *CEO informal power* and *CEO status*, but the results in Table 3 are mixed. While there is no significant relationship in the logistic Model 2 for *CEO Informal Power*, the Poisson model (Model 4) does have a significant interaction effect ($p < 0.01$). Together, we conclude that there is partially support for an interaction effect between CEO informal power and CEO status. To more explicitly examine how the interaction of CEOs with both high informal power and high status affects the likelihood of engaging in acquisitions, we create a factor variable *Quadrant* that splits the sample into 4 quadrants according to *CEO informal power* and *CEO status* values above (“High”) and below (“Low”) their median values. The resulting model coefficients are listed in Table 4.

Compared to executives with low power and low status, those with low power and high status are less likely to acquire other firms, supporting Hypothesis 1. CEOs with high power and low status are more likely to acquire, supporting Hypothesis 2, while those with high power and high status are also more likely to acquire, supporting Hypothesis 3a, albeit with a slightly smaller coefficient. Hypothesis 3b finds no support.

Table 4: Logistic and Poisson GEE Panel Regressions of M&A Likelihood (DV: M&A Likelihood)

Variable	Logistic Model 5	Poisson Model 6	Hypothesis
Intercept	-2.47 (0.18) ***	-2.28 (0.20) ***	
Year 2005	0.45 (0.15) **	0.85 (0.19) ***	
Year 2006	0.39 (0.15) **	0.79 (0.18) ***	
Year 2007	0.62 (0.14) ***	0.93 (0.18) ***	
Year 2008	0.08 (0.17)	0.33 (0.19) +	
Year 2009	0.12 (0.15)	0.22 (0.18)	
CEO Age	0.01 (0.01)	0.01 (0.01)	
CEO Tenure	0.13 (0.05) *	0.15 (0.07) *	
Firm Size	0.20 (0.03) ***	0.23 (0.04) ***	
Firm Debt/Equity	-0.29 (0.11) **	-0.07 (0.12)	
Firm Performance	0.44 (0.70)	0.18 (0.78)	
CEO Cash Compensation	0.06 (0.03) +	0.04 (0.05)	
CEO Structural Power	-0.36 (0.08) ***	-0.15 (0.10)	
CEO Chairman	-0.01 (0.10)	-0.22 (0.12) +	
Quadrant (informal power, status)			
1 (low, low)	1	1	
2 (low, high)	-1.22 (0.41) **	-1.23 (0.25) ***	H1 (-)
3 (high, low)	0.61 (0.13) ***	0.46 (0.15) **	H2 (+)
4 (high, high)	0.46 (0.15) **	0.30 (0.17) +	H3a (+) H3b (-)
N	2454	2454	
No. of CEOs	543	543	
Wald χ^2	160.63 ***	143.87 ***	

Discussion

The results generally support the idea that high-status CEOs are less likely to engage in M&A activity and that high-informal power CEOs are more likely. Most interestingly, when both status and power are available to a CEO, their superior power overrides their reluctance to act arising from their high status, and they are again more likely to acquire firms. However, the smaller coefficient for high status and high power CEOs compared with those with high power and low status suggests that status tempers the ambition of informal power.

Of course this study examines only one type of strategic investment – acquisitions, leaving the question of other strategic moves such as alliances, joint ventures, and R&D unanswered. We only note the likelihood of investment, not the magnitude or timing of the investment. The sample also primarily considers large, well capitalized U.S.-based firms that list on the S&P 500. We therefore cannot necessarily extend our conclusions to smaller firms, non-U.S. based firms and privately held firms.

Conclusions

We find evidence among a six-year sample of S&P500 firms of CEO prestige influencing the likelihood of making an acquisition. We also evidence suggesting that the ambitions of high informal power CEOs are effectively tempered by high status.

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Managerially-Held Meanings of Strategy-Structure Fit¹

This paper addresses the question of how managers understand the concept of 'strategy-structure fit'. In a case-research design, 16 middle and top managers from four organizations were asked to identify, recount, and assess concrete and important organizational decisions. Analysis of the transcripts from a symbolic interactionist perspective exposed 'facilitator of performance' and 'constraint on performance' as alternative managerial conceptualizations of fit. The symbolic paths respondents took to arrive at the meanings are exposed. Implications of the findings for research and practice are discussed.

Introduction

The purpose of this paper is to discuss a study on how managers understand the concept of 'strategy-structure fit'. Strategy-structure fit is defined in this paper as the extent to which the characteristics of organizational strategy and organizational structure are consistent by virtue of their common connection to a theme (Donaldson, 1987; Miller, 1996; Porter, 1996). Organizational strategy refers to the pattern that integrates the organization's decisions and actions into a cohesive whole (Miles & Snow, 1978; Mintzberg, 1987; Porter, 1980; Quinn, 1980), and organizational structure to the organization's administrative arrangements, including hierarchical reporting relationships, operating procedures, and information and control systems (Burns & Stalker, 1961; Mintzberg, 1984).

The paper is structured as follows. First, a review of the literature is undertaken that identifies the research gap and problem addressed in the paper. Second, the research design and methods for addressing the problem are described. Third, the research findings are elaborated. Finally, the paper concludes with a discussion of findings including their implications for research and practice.

The Literature and Research Problem

Early research strategy-structure fit focused on the impact of fit between diversification strategies and divisionalized structures, on the one hand, and organizational performance, on the other. In a longitudinal archival study, Chandler (1962) showed that the regional diversification activities of four large U.S. enterprises led to performance improvements only after the companies decentralized operations. Apparently, the decentralized structures were better able to accommodate differences in regional needs than the previously centralized structures. Chandler's work was replicated and supported by Channon (1973), Thanhisier (1972), and Pooley-Dias

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(1972) in the U.K., Germany, and France, respectively. Fouraker and Stopford (1968) extended the research to companies that diversified internationally and found similar results. Rumelt's (1974) quantitative study of 239 *Fortune 500* firms also supported the hypothesized fit to performance link.

Subsequent studies (e.g. Dess & Beard, 1984; Hambrick, 1983; Miles & Snow, 1978; Miller & Friesen, 1984; Mintzberg, 1979; Porter 1979, 1980) exposed other dimensions of strategy and structure and several dimensions of task environment that appeared relevant to the fit-leads-to-performance hypothesis. Based on these works, Miller (1986) used 16 dimensions of strategy, structure, and environment to construct five strategy-structure archetypes (i.e. 'niche marketers,' 'innovators', 'marketers', 'cost leaders,' and 'conglomerates') that he proposed would outperform other organizations due to internal consistency. A stream of research on 'configuration' and performance followed as partially documented by Ketchen, Thomas, and Snow (1993) and Ketchen et al. (1997). A meta-analytical study of this literature by Ketchen et al. (1997: p. 233) "remove[d] any equivocality surrounding configurations' ability to predict performance."

Recent studies expanded the breadth and depth of the fit concept. To broaden the research, studies tested the premise that fit leads to performance in departmental (rather than organizational) contexts. A study by Olson, Slater, and Hult (2005) found that marketing performance is influenced by the fit in organization-level strategy, marketing unit structure, and marketing emphasis. Research by Xu, Cavusgil, and White (2006) concluded that fit between global marketing strategy and structure is a determinant of international marketing performance. A manufacturing study led Parthasarthy and Sethi (1993) to the conclusion that flexible automation technology performs best when accompanied by quality or flexibility based organization-level strategy, and skills diversity and teamwork within the manufacturing structure. In a longitudinal study of 6,000 franchise and company owned pizza chain stores, Yin and Zajac (2004) concluded that the fit between organization strategy and governance structure influences store performance. Finally, Meznar and Johnson (1995) found that the fit between organizational strategy and structure in business government relations affects that activity's performance.

To deepen understanding of the concept of fit, recent studies have elaborated on the mechanisms through which fit is achieved. By example, Porter (1996) through a sample of organizations portrayed fit as a network of multiple, internally consistent, strategic and structural activities. Based on the performance of several organizations, Leinwand and Mainardi (2010) conceptualized fit as the realization of a distinctive system of interlocking capabilities with value in the marketplace. Finally, Blenko, Mankins, and Rogers (2010) concluded from their study that decisions mediate the relationship between the firm's intended strategy and its macro organizational structure.

Research Problem

A gap in the fit literature is its almost exclusive focus on the organization level of analysis. Knowing that organization-level fit matters to performance is important. However, common knowledge suggests that fit is an outcome of a process that originates at the individual level and takes shape through interplay among organization members. The absence of knowledge on how configuration builds from individuals and groups into organizational realities limits the managerial utility of current findings.

This paper addresses the gap by concentrating on the question of how individual managers understand strategy-structure fit. Managers are singled out because they are more likely than other employees to engage in developing organization level strategy and structure.

Design and Methods

Because the research question has not been examined previously, the study was designed to be exploratory. Therefore, a case research design was employed in which the unit of analysis was the individual manager. Case research may be defined as the in-depth investigation of a small sample of units within which the phenomenon of research interest resides (Dyer & Wilkins, 1991; Eisenhardt, 1989; Flyvbjerg, 2004; Patton, 2002; Yin, 1989). It is appropriate in exploratory studies where the goal is to generalize findings to theory rather than to the population from which the research samples are drawn (Stake, 2005; Yin, 1989).

Data were obtained through relatively unstructured ‘conversational interviews’ with managers. In this method, the interviewer pursues predetermined themes, but is free to probe for additional meaning (Lee, 1998; Patton, 2002). The method is consistent with the goal of obtaining rich, salient data around the questions of interest, rather than data that is comparable across subjects (Brewerton & Millward, 2001).

Sensitizing Concepts

‘Sensitizing concepts’ (Blumer, 1969) were employed in the study. These concepts are broad mental categories or loosely operationalized ideas that the researcher brings explicitly into the research to provide general direction (Denzin, 1978; Miles & Huberman, 1984; Patton, 2002; Schwandt, 2001; Van den Hoonaard, 1997). According to Silverman (2000), such concepts help keep exploratory research from becoming mere excuses for sloppy work.

Three sensitizing concepts were employed. First, organization-level fit is a variable that ranges from being relatively broad to relatively narrow. This idea is consistent with Miller’s (1996) operationalization of fit as the number and range of strategy and structure elements that the organization attempts to make internally consistent. Second, managerial decisions and actions are influenced by their preferences about how broadly internal consistency should be imposed across all possible elements of strategy and structure. Preference for broad or narrow fit is a translation of the organization-level fit concept into a variable that appears to make sense at the individual level. Third, managerial fit preferences emanate from the meanings individual managers ascribe to fit based on past experience and reflection.

The second and third concepts above are consistent with the premise of ‘symbolic interactionism’ (Blumer, 1969) that human acts are based on meanings and that meanings are constructed on the basis of interactions with others and with ‘the self’ (Blumer, 1969 and 2004; Manis & Meltzer, 1967; Prasad, 2005). Thus, meanings are not inherent to objects but are constructed (Shibutani, 1961). Although meaning encompasses the literal definition of the object, it also encompasses the significance of the object for the individual (Meltzer, 1967). Significance is the outcome of a cascading process of interpretation in which the person considers the object as a sign or symbol for another object that in turn might symbolize a third object (Hewitt 2003). Action towards an object is taken on the basis of its symbolic rather than literal meaning (Prasad, 2005).

Study Participants

Sixteen managers, equally divided among four Canadian organizations, participated in the study. Maximum variation purposive sampling (Flyvbjerg, 2004; Gobo, 2004; Patton, 2002) was employed. The approach is appropriate when the researcher wishes to investigate both shared patterns across cases, and the unique contextual factors that might be important to the phenomenon of interest (Patton, 2002).

The organizations, designated as Alpha, Beta, Delta, and Gamma, were picked to represent different combinations of what Duncan (1972) has designated as environmental complexity and dynamism (Figure 1). The author made the classifications on the basis of preliminary research on the organizations' industry environments. Alpha was a telecommunications company. Beta was an international conglomerate in the defence, aviation, enterprise, and regional airlines businesses. Delta was a group insurance organization. Gamma administered worker's compensation in a Canadian province.

Figure 1
Environmental Complexity and Dynamism of Study Organisations

	Simple	Complex
Stable	DELTA	GAMMA
Unstable	ALPHA	BETA

The study participants included two senior managers, four Directors, four Vice-Presidents, four Senior Vice-Presidents, one President, and one CEO. Their functional roles included law, information technology, marketing, operations, accounting, communications, human resources and general management. Of the 16 respondents, two were female and three were members of visible minority groups. In the balance of the paper, participants are referred to by their organizational affiliation. For example, Alpha respondents are designated Alpha1, Alpha2, Alpha3, and Alpha4.

Interview Procedures

The interviews were designed to reveal respondent preferences about fit through a discussion of concrete organizational events with strategy-structure fit implications. Prior to the interview, respondents were asked to consider two organizationally important decisions taken in the previous five years, one of which they considered to have been a good decision and another they thought was poor. During the interview, the respondents were probed to clarify facts and opinions considered relevant to the study questions. The interviews sought to elicit respondent views about fit within concrete contexts.

The majority of the interviews took place over 75 to 90 minutes. Due to time constraints on the part of the respondents, two interviews were concluded in slightly less than one hour. One

interview took two hours. With the permission of the respondents, all the interviews were recorded and later transcribed.

The decisions discussed encompassed multiple elements of strategy and structure. They included, among others, decisions to enter new, or exit from existing, product-market spaces, to reposition the organization from an international to a regional concern, implement a branding initiative, centralize or decentralize key operations, and implement new controls such as a balanced scorecard.

Analysis Procedures

An issue with interview-based research is the potential for the selective extraction of data that support researcher notions to the exclusion of data that refute the notions (Silverman, 2000). This complaint raises questions about the validity and reliability of the study. To address the concerns, Silverman's (2000) three recommendations were followed. First, data were constantly inspected, compared and contrasted within and between analytical stages. Second, particular attention was paid to ensuring that deviant cases were accounted for throughout the analysis. Finally, a detailed paper and computer trail was left at every stage of the analytical process that allowed the author and others to ensure the integrity of the findings.

Interview data were analyzed in two stages: analysis of individual transcripts to reveal dominant and secondary individual respondent views regarding fit, and analysis of data across transcripts to reveal patterns of interpretation of fit across respondents. The steps taken were intended to move the analysis from the particular to the general in a systematic manner as suggested by Locke (2002), McCracken (1988), Patton (2002), and Strauss and Corbin (1998) for the inductive development of theory.

The software program NUD*IST was used as a coding aid to analyze individual transcripts. The program allows one to code passages into 'nodes', group nodes into node categories, and create hierarchies of node categories called 'trees'. The process entailed labeling 'utterances' and then grouping them into broader categories. The process required making constant comparisons of passage contents and utterance labels within and between transcripts, and entailed the renaming of utterances, utterance reclassifications, and several revisions of the coding scheme in a way that would accommodate the respondents' dialogues completely. NUD*IST was used both as an aid to classification and as a device for recalling and comparing particular utterances, subcategories, and categories. Table 1 contains a sample passages from a study interview, and indicates the corresponding utterance, category, and subcategory node labels. Every transcript contained 1,500-2,500 category, subcategory, and utterance nodes.

Table 1
Sample Passages, Utterance Labels, and Category / Subcategory

Passage	Utterance Node Label	Passage Category / Subcategory Label
<ol style="list-style-type: none"> 1. Wireless is self-contained but the rest of the company is kind of functionally organised so we have marketing for the rest of the business, 2. so I have the marketing folks, sales people, customer service... 3. It's because wireless is...since inception it's been...Because it's so important for growth, we've kept it in a self-contained unit to make sure they're fully accountable, fully able to execute and maximise the potential of that business. 4. And so because we value that growth so much, to make sure they weren't distracted by a bunch of problems that were going on. 5. As the rest of the businesses tries to contract and reduce its size and focus on productivity to improve margins, to deal with reduced revenue. 6. The wireless business, it's not just about margin management, it's not just making sure you maximise your growth and improve margins along the way but to lay on all this productivity stuff in a company that's trying to make sure they're growing share... 7. So it's kind of isolated a bit. 	<ol style="list-style-type: none"> 1. Alpha carries hybrid structure 2. Composition of planning council 3. Why wireless is self-contained 4. Growth strategy needs self-contained structure 5. Non wireless businesses focus on margins 6. Wireless business about maximising growth 7. Wireless is isolated 8. 	<p>Organisation practices / Structure</p> <p>Individual views / Strategy- structure fit</p> <p>Individual views / Strategy-structure fit / Fit as connection</p>

Findings

As previously discussed, fit refers to the extent of alignment between organization strategy and structure. According to the literature, organizations whose strategies and structures are internally consistent will tend to outperform organizations with internally inconsistent strategies and structures. A view of this discussion through symbolic interactionism would suggest that fit does not mean mere internal consistency between strategy and structure. Rather, the meaning of fit encompasses the idea that it facilitates superior organizational performance. As discussed below, the idea of fit as ‘facilitator of performance’ is well represented among the study respondents. However, the analysis also revealed nearly half the respondents viewed fit as a ‘constraint on performance’.

Fit as Facilitator of Performance

This meaning of fit was reflected in transcripts in which the respondents appeared to prefer either a broad alignment between multiple elements of strategy and structure, or a narrow alignment focussed on a few key strategy-structure elements. In this meaning, fit symbolizes mechanisms for encouraging and/or removing obstructions to performance achievement. As discussed below, these mechanisms divided into three distinct symbols as gleaned from the respondent accounts.

Fit as connection. Several accounts symbolized fit as a connection between strategy and structure whose strength determines organizational performance. In this meaning, strategy and structure elements are connected directly and reciprocally in mutually supportive arrangements.

This meaning is illustrated by Alpha1 who was Director of HR at the time of the interview. Due to drastic performance declines, Alpha had recently changed its strategy from growing products and markets internationally to maintaining established products regionally. Reasoning that the new approach required different competencies compared to the old, Alpha1 led a significant human resources project intended to identify, develop, and reward leadership competencies that were consistent with the new strategy. The initiative demonstrates a presumption that a strong connection between strategy and structure enhances organizational performance. Specifically, Alpha1 appears to view structure as means for implementing strategy. In his words:

The leadership competencies we came up with [are] customer focus, ethics and values, integrity and trust, drive for results, priority setting, personal leadership skills, timely decision-making, motivating others, building effective teams, business acumen. ... In this new world, today, I would say execution is paramount. Innovation is less tolerated. We have seen a lot of the innovative people leave ... and we're probably at a loss for some of them. We're going to need those types back in the future. But right now, how you get ahead is by being brutally focussed executing very well the things you're supposed to.

Beta2, Senior VP for HR and Law, shared Alpha1's preference for a strong strategy-structure connection, but with a twist. While Alpha1 appeared to view structure as a vehicle for implementing strategy, Beta2 seemed to see it as a means for controlling strategy. During the interview, he stressed the need for the company to develop "systematic, process-oriented, analytical" capabilities needed to support strategy-making activities. A multimillion dollar error the company had made in the past in producing a custom airplane was, in his opinion, due simply to "lack of emphasis on process [because] if a proper process had been there, there would be protocol . . . departments to make sure you get the inputs from all the staff and functions you need." He thought the firm's presence in several small "boundary operations" was poorly connected to Beta's main lines of business. He questioned Beta's recent action to commit 25% of its operations to the airline industry, a "volatile, capital-intensive, high-risk, no-real-upside business" that was "far afield the limits of [the company's] expertise". In his opinion, failures in the firm's structures to control strategy were inhibiting the firm's performance. He recalled telling Beta's founder and current CEO:

“You know you’ve been very successful, [but] you’re not going to be here forever. Let’s take you and put you into a policy manual. It seems we don’t like that kind of stuff but it’s important. . . . When you get big, how is the guy in [a far flung country] going to relate to you? You’re going to have to have some clear rules, or you’re going to lose control of this thing. We get to a certain size and we fragment.” So there’s a need to do that, for sure, in the company.

Fit as shared focus. A second symbol of fit from the respondent accounts is that of a performance enhancing focus that strategy and structure converges upon. In this meaning, strategy and structure elements are also reciprocally arranged but the connections are made in reference to a consciously held common theme.

This meaning is illustrated by Delta3, VP of Marketing, in his discourse around a recent branding initiative at the company. A core idea in the brand was “customer service . . . being easy to do business with.” This was an idea that Delta3 thought should permeate “everything [we] do The output of our work [should] validate the brand. Anything else is discordant.” He was therefore pleased that the customer service theme was reflected in the firm’s high level strategy and structure. Unlike many Group insurance providers, Delta sought direct contact with, and customized products for, clients via multi-functional regional teams that were responsible for client segments. However, Delta3 also felt that the organization had thus far failed to infuse lower level processes and activities with the brand.

I think if you were able to do a survey, look inside people’s heads you will find there is a lot of confusion around. . . . If you looked at our letters I bet you would say that they are pretty much the same as anybody else’s letters. They’re complicated, they use quasi legal language, they are cold.... If you had at the core of your understanding that the brand [is] being easy to do business [with] and so on, you would not have created a letter that is complicated, hard to understand, uses jargon, because all it will do is to confuse people. All it will do is make them go, "What?" All it will do is get them angry, right?

A similar meaning of fit is provided by Gamma4’s discussion of the changes he supported at the organization since becoming CEO ten years earlier. He recalled that “everyday, everyday [I talked] about why we are here. . . . Your job is customer service . . . and we had to reinforce it and reinforce it.” Customer service was the focal point for strategy and structure changes he supported for Gamma’s injured-worker and employer clients. For injured workers, the organization expanded the scope of service to encompass injury prevention and rehabilitation. Additionally, operations were restructured around industry segments to accommodate unique injury patterns, and redesigned to minimize the duration of claims processing. For employer clients, the strategy was to make it more convenient for them to submit premium payments, and this was accomplished through a partnership with Revenue Canada for premium collections. Although the partnership achieved Gamma’s goal of greater convenience for the employers, it was a “huge change” in the way the organization did business. But he supported it because it conformed to the organization’s customer service theme. Gamma4 recalled:

[We] used to get the check every month and instead of just registering everybody and collecting the money once a year, now you have to do it 12 times and in some cases weekly, for large employers, because they pay weekly. . . . I

[wanted] to keep it at this amount of money and we could not do it. We had to put more staff to help out with [operations] and some of the problems that had developed.

Fit as transparency. A third symbol of fit drawn from respondent accounts is that of transparency of expectations and accountabilities within the system. The logic of this meaning is that not knowing what is expected and who is responsible for the expectations in various parts of the organization make it difficult to obtain consistent performance across the organization. There should be no surprises in what is expected and in how successful one has been in accomplishing them.

This interpretation of fit was exemplified by Alpha2, a Senior Manager for Strategy Development, who expressed two frustrations during the interview. First, he was frustrated with how performance standards varied so widely between organizational units and why under-performing units were often not called to task for poor performance. Second, he was frustrated with the lack of transparency in the firm's system for promoting middle managers and up. So he considered it a positive development that the firm was now aligning strategy and structure by placing greater emphasis on "how" results were being achieved, as opposed to "what" was being achieved. For him, the envisioned fit between strategy and expected behaviours represented the greater transparency he considered lacking.

I think in an ideal organization ... I think the political agendas are ... the opportunities for advancement would be more transparent than they are in this organization. ... If someone's moved to a new job but you never knew there was a new job to move to, right? We have a very transparent job posting for the [lower] managers ... but that doesn't exist for positions in middle management and above. ... It [people perspective] wasn't part of the reward system, right? So where you were rewarded was did you meet your results, did you get that project done, what you got done versus how. And now, very much, people are being held accountable for the how. And so part of every manager's goals is feedback on how their people feel they were managed, coaching and development, their assessment values, whether or not they demonstrate the values. People in leadership roles are evaluated on their leadership competencies, how they demonstrate those. And then a very big focus on development, documented development plans. So you know, all these changes have been for the better, it's going to create a stronger organization.

Gamma2, Vice-President Corporate Services, had a similar view in connection with the organization's balanced scorecard system. When he had first arrived at Gamma, there had been "really no formal . . . corporate performance measures" other than aggregate financial reports. He had found this disturbing, particularly because as a public sector organization, Gamma was accountable to its many stakeholders and there was "a higher standard of ethics and transparency." At the urging of the CEO, Gamma2 ultimately took a leadership role in collaborating with the organization's other Vice Presidents to drive corporate strategy measures "right down to the front line."

And so in fact on my desktop I can click and find out how every single individual case worker in Gamma did last month on issuing those checks. What

percentage of the people that they issued checks to got it within 15 days. So it's very direct, it's at an individual staff member's level [who can tell] how [their] customers last month liked the service. ... We roll it up to people working in teams, we roll it up to geographic units... and then we can measure it for the whole organization

Fit as Constraint on Performance

Equally dominant in the transcripts as the idea that fit facilitates performance is the notion that fit constrains performance. This notion does not support the theoretical meaning of fit. In this meaning, fit is seen as imposing, rather than removing, obstacles to organizational performance. The transcripts specifically revealed that for some respondents, fit symbolized organizational rigidity and loss of autonomy.

Fit as rigidity. Underlying this conceptualization of fit is the idea that rigidity weakens the ability of the organization to adapt to complex and changing circumstances effectively.

Delta2, Vice-President for Group Disability Claims, seemed to see fit in this way. She liked the fact that the firm's "customer relationship focussed" strategy was matched by a team structure "centered around [particular] client groups". But she especially thought it "wonderful" that the firm had a policy around being a "thinking organization". Like many insurance organizations, numerous rules and policies were in place for dealing with the volume of routine transactions being encountered. The "thinking organization" policy allowed regions, teams, and individual employees the discretion to depart from normal company practice if it would benefit both the client and the company. She states:

Saying that "If it's good for your customer and it makes sense, do it" [makes] people empowered at every level to say "hey, this makes sense for my customer. I'm going to do it, I won't wait until my boss is here. This makes good sense. It's not going to hurt our bottom line. I can bend the rules a little bit. In the end, I'll have a delighted customer."

Delta2 appreciated this policy because insurance was "a dynamic environment and ever changing". Therefore, "operations must inform policies and procedures and not the other way around." This meant that people in the field should not be "ham strung by bureaucracy." Instead, front line employees should be encouraged to think of ways to "change to match that customer, change so that that customer will want to be with us for the long term."

A similar line of thinking was expressed by Beta1, Vice-President for the Beta's Medical lines of business. Although the business lines were all health-related, every one was unique. Doing "business in Beta Surgical with doctors is not at all like doing business [in Beta Dental] with dentists." The Division sold high-volume commodity items and also high-end specialty equipment which required "a different sell altogether". Beta Mobility, which sold wheelchairs and other aids to people with physical disabilities, required "high customer touch". Competition in every business area was "fierce [on] price [and] customer service". To further complicate matters, "health care is on the agenda of every politician and that seems to change with the government."

In this environment, Beta1 suggested that imposing “one size fits all” strategies and structures on his unit managers would create rigidities that would be inimical to performance. Therefore, beyond holding people accountable for achieving targets and objectives, he was “not going to tie their hands”. Because from his perspective on the medical business, “you really [have] to be...on your toes, be responsive, you have to understand what’s happening to the marketplace. You have to be close to the marketplace,” and have “a wide repertoire” of abilities to draw on where and when required.

Fit as loss of autonomy. The second interpretation underlying the idea of fit as constraint is that it symbolizes loss of personal autonomy. The logic of this interpretation is that constraining autonomy would lead to the failure to attract, and propensity to lose, valuable employees who relish it; consequently, organizational performance would suffer.

The view is exemplified by Alpha3’s discourse. Having recently joined Alpha as Senior Vice-President of Corporate and Legal Services, Alpha3 appeared impressed with the company’s efforts to broaden strategy-structure fit through a balanced scorecard: “I think there are more than 100 measures, cascading down from the corporate card . . . and it’s very impressive, the extent to which people do it here.”

That said, Alpha3 made a distinction between what he felt was good for the company and what he personally preferred. And what he appeared to see in Alpha’s scorecard effort was the possibility of having his autonomy stifled. As suggested by the passage below, he had come to the company with “habits and mindsets” developed over 25 years of legal practice that he intimates may ultimately conflict with the intent of the company’s scoring effort.

I was on my own for 25 years. I was in a firm but the way law practice is, professional practices go, you are on your own, you are literally on your own. . . . I decided how I was going to organize and run my life professionally [and] deal with my clients. I had latitude as to when to bill within reason . . . how to relate to [clients], how to carry on professional development. . . . I had control over meetings [times] and the extent to which I was going to participate in them, a whole range of things . . . As long as I was doing or perceived to be doing a reasonable job with my clients, everything else was really up to me. . . . That is not true in an organization like this in the sense that there are expectations for, there are prescribed times for meetings and for moving things along and moving things through the process and getting approvals and sign offs and that sort of thing.

Alpha4, Senior Manager of Systems Support, held a similar view though from an information technology perspective. In his opinion, the “new world of IT” required a management approach that stipulated the goals to be accomplished, but not the means.

The team that I am dealing with . . . know exactly what's on the plate, I give it to them and then I leave. Maybe I check in with them in a month. The understanding is if they have problems and obstacles they come and look for me to take away those obstacles. The same thing applies to [my superiors]. I personally like them not to call me for trivial things. I want to have one-to-one conversations at the very beginning [and be told] “These are my requirements,

this is the way I like you to run my shop. ... These are [the] important issues to me. And I want to have a meeting with you every week [on] Wednesday.” So that kind of freedom, I think I’m entitled to that unless I prove [to] you otherwise, unless I prove you wrong and I need to be baby-sat. Otherwise leave me alone.

Alpha4 recognized this was a difficult approach for the “old school” control-oriented managers to accommodate, and thought that although “some people are going to survive it,” others “would not like it as much and walk out” or have employees walk out on them.

Discussion

According to Yin (1989), the value of case study research does not lie in the ability to generalise to a population, but to theory. The presentation of findings in the previous section is a step in that direction. It adds ‘thick interpretation’ (Denzin, 1989) to theory by elaborating on concepts, contexts, and data that connect individual transcripts to themes found across transcripts.

To recap the findings, this study revealed positive and negative managerial interpretations of fit. Positive interpretations considered fit as facilitating organizational performance by providing a connection among organizational elements, a shared focus for the elements, and transparency of the connections and purpose for all to see. Negative interpretations considered fit as constraining performance through rigidity that is inimical to environmental adaptation, and loss of individual autonomy that managers may feel important to discharging their roles.

The positive interpretations of fit are consistent with the literature. First, the idea that fit provides a connection among elements is supported by Miller’s (1986) and Porter’s (1996) portrayal of good fit as a network of internally consistent organizational activities. Second, the concept that fit provides a shared focus is supported Leinwand and Mainardi (2010) and Blenko, Mankins, and Rogers (2010), who submit capabilities and decision rights, respectively, as the appropriate fit-focussing mechanism. Finally, the idea that fit when transparent enhances organizational performance is implicit in the literature.

While the prevailing literature supports the positive managerial interpretations of fit revealed by this study, it has not tended to address the negative in the way managers in the study did. In the literature, the assumption is made that the greater the fit the better organizational performance would be. Fit is ‘bad’ only in the presence of ‘too little fit’—that is, internal inconsistencies in important strategy-structure elements. In contrast, the negative managerial interpretation of fit found in the study emanates from the idea that there can be ‘too much fit’ at least in the minds of managers. This condition would stifle the individual autonomy needed to support organizational adaptation, and organizational performance would suffer.

This finding supports the conclusions reached in a subfield of the fit literature introduced by Miller (1996). While prevailing research was addressing the question of which strategy-structure characteristics match or do not match, he opened a line of research that focussed instead on the question of how much fit there should be. Through this research (Miller, 1993; Miller & Chen, 1996; Miller, Lant, Miliken, & Korn 1996) Miller and his colleagues found a range within which the level of fit correlated with good performance, and outside of which performance fell. This line of research has largely been abandoned.

Contributions

As discussed earlier, the literature on strategy-structure fit has established that the alignment between strategy and structure dimensions significantly influences organizational performance. The research has broadened to include studies at the departmental organization level with similar findings. The present study contributes to this literature by broadening fit's theoretical reach further down into the organization, to the level of individual managers.

The study departs from the portrayal of fit as an outcome of activities by a monolithic organizational entity with singular intentions. Instead, the image of organization portrayed is that of a potentially fragmented entity comprising persons with unique interpretations of, and consequent actions toward, organization-level variables.

A second contribution by this study is made to a fork in the fit literature by Miller and his colleagues on the relationship between degree of fit and organizational performance. Like that literature, the finding in the present study that there can be too much fit suggests a need for balance between fit and flexibility in the quest to align organizational strategies and structures. The finding further suggests reopening the 'degree of fit' line of research that has largely been abandoned.

Limitations

There is one real and one potential limitation to the study. As discussed previously, a real limitation of small-sample research is the inability to generalize findings to a population of managers. However, as has already been noted based on Patton (2002), Yin (1989) and others, the study's findings may be generalized to theory.

The potential limitation pertains to the validity and reliability of study findings. Based on Hammersley (1990, 1992), validity is the extent to which a qualitative account accurately represents the phenomenon it purports to represent, and reliability is the extent to which the qualitative account is assigned to the same category by different investigators or by one investigator on different occasions. These concerns were addressed by following Silverman's (2000) recommendations discussed earlier.

Practice and Research Implications

The implications of this study for practicing managers start with the finding that though managers live in a world of observable decisions and actions, there is a hidden world of meanings driving the observables that could, and perhaps should, be the focus of managerial work. In attempting to obtain buy-in for a major initiative, the manager is encouraged by this study to be aware of and address the range of meanings that such initiatives can have for individuals. Based on this study, strategy-structure fit may be conceived as an organization performance facilitator, but it may also be viewed as a constraining influence on organizational agility and individual autonomy. Therefore, any configuration-related initiative should address how the initiative will improve internal consistency among key elements of strategy and structure, and at the same time allow the organization and the individuals within it to have the flexibility needed to make adjustments to the realities encountered in the field.

The research may be taken into one of two directions. First, the study may be replicated quantitatively in a way that would validate, invalidate, or expand the range of meanings found in the study. A valid and reliable scale for the measurement of fit's meaning to individuals would be useful in research settings in which the impact of individually-held meanings on group 'fit-making' processes or on organization-level fit content is being investigated. Second, the study findings may be used as sensitizing variables in a qualitative study of how strategy-structure arrangements are decided upon at the interpersonal or group level. This research would take the literature closer to bridging the gap in our knowledge about the individual and group processes that must influence fit at the organization level.

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**ASB 2012
Strategy Abstracts**

**Overview of Home Care in Nova Scotia:
A Model to Reduce Waiting Time**

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This article provides a brief review of senior care system in Nova Scotia. The attention is given to the Home Care model that is in development. We believe Home Care may represent a realistic solution to address significant challenges resulting from aging population. A variety of issues surrounding Home Care are examined. We propose solutions to current challenges. Finally, a conceptual model is discussed with the objective to reduce waiting time and improve care outcome.

**When the Tortoise Becomes the Hare: The Role of Hubris, Humility,
and Path-Dependence in the Fall of GM and Toyota from the No. 1 Spot**

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GM and Toyota competed in the global automobile industry for many decades. While GM hung onto the No. 1 position longer than any other automaker, in 2008 it lost the position to its formidable rival, Toyota. It took Toyota 71 years to beat GM, but GM bounced back to its perch in 2011. We argue that the rise and fall of GM and Toyota can be attributed to the institutionalization of agents' interests, as facilitated by a strong path dependence, and to the institutionalization of stewards' interests, as facilitated by a marked departure from an established path-dependence—both for the perpetuation of growth. The study's implications are given.