A Contingency Framework of Enterprise Governance in the UK: A Value-Based Management Approach

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Abstract

Corporate governance (CG) has recently received much attention because of the wave of financial scandals in the early 2000s and the more recent global financial crisis. CG reforms, including laws, codes and listing rules have been established to protect shareholdersø rights and restore investorsø confidence in the capital market. These reforms have largely contributed to the evolution of internal and external governance mechanisms that are aimed at mitigating agency conflicts between managers and shareholders. However, overemphasis has been placed on the monitoring and control dimensions of governance, which may hinder entrepreneurial activities, obscure business prosperity and contribute to a narrow perspective on CG.

It has been argued that there is a need to broaden CG beyond compliance (conformance) to a set of rules and laws, to include the performance aspects of governance that focus on strategy and value creation. In other words, governance should not only focus on monitoring managerial performance to ensure accountability to shareholders, but also on mechanisms that motivate management to optimise shareholdersø wealth. Enterprise governance (EG) framework has been introduced to keep the balance between the conformance and performance dimensions of governance. However, few studies address the possible tension between conformance and performance. Moreover, there is no agreement among these studies on the relationship between conformance and performance in the governance context.

Arguably, Value-based Management (VBM) is an appropriate approach to address the issue of EG. VBM adopts value creation as an overall objective, develops a strategy that contributes to value creation and integrates it into decision-making. In this way, VBM can act as an effective mechanism for motivating management to maximise shareholder wealth, which works in parallel with other CG mechanisms, to mitigate agency conflicts resulting from the separation between ownership and management.

This study aims to develop a contingency framework of EG through operationalising the conformance using CG and performance using corporate entrepreneurship (CE). This framework examines the inter-relationships between VBM, compliance with the Combined Code on Corporate Governance (CCCG), CE and the ultimate effect on organisational performance. More specifically, the study empirically examines the effect of compliance with the CCCG on CE, and whether VBM can achieve a balance between compliance with the CCCG and CE, should a conflict exist. The study also examines whether a fit between contingency variables (company size, agency conflicts, uncertainty, strategy and decentralisation), VBM, compliance with the CCCG codes and CE is associated with organisational performance.

To achieve the aim of this study a cross-sectional survey, based on a questionnaire, is conducted to identify the level of VBM implementation, contextual and organisational factors in the large and medium quoted companies in the UK. The questionnaire targets the Chief Financial Officers (CFOs) in these companies as key informants. In addition, a content analysis of the annual reports of the sampled companies is undertaken to measure the level of compliance with the CCCG. Financial data (e.g. organisational performance) have been obtained from the DataStream, Fame and Thomson One Banker databases.

Partial Least Squares Structural Equation Modelling (PLS-SEM) is adopted for data analysis and hypotheses testing.

The results suggest that VBM implementation is positively associated with agency conflicts, low cost strategies and decentralisation. Compliance with the CCCG is positively associated with agency conflicts and company size. CE is positively associated with company size, uncertainty and differentiation strategies. In addition, the fit between compliance with the CCCG and contingency factors significantly predicts the market-based performance. The fit between CE and the contingency factors significantly predict the perceived performance. However, the results regarding the effect of VBM on organisational performance are mixed. While VBM has no significant direct effect on the market-based performance, VBM has indirect positive effect on the market-based performance acting through compliance with the CCCG as an intervening variable. VBM is significantly associated with compliance with the CCCG but not with CE. No evidence is found for negative association between compliance with the CCCG and CE.

The results support a large number of the proposed relationships between the contingency factors, VBM, compliance with the CCCG and CE. The results also suggest that using both compliance with the CCCG and CE as intervening variables in the relationship between VBM and organisational performance contributes to explaining the mixed results in the VBM literature. In terms of the EG framework, VBM does not keep a balance between conformance and performance. VBM emphasises the compliance with the CCCG (conformance) at the expense of CE (performance). The results did not provide significant evidence of a conflict between compliance with the CCCG and CE, the area which lacks empirical evidence.

This study contributes to the literature at different levels. At the theoretical level, this study develops a theoretical model that links a performance management system (PMS), i.e. VBM, to CG practices and CE. This model attempts to bridge the gap between different disciplines, including management accounting, CG and entrepreneurship. Furthermore, combining both the contingency theory and the agency theory lenses contributes to the development of a comprehensive model of EG. At the methodological level, unlike previous studies, this study measures VBM practices on a continuum, rather than categories. Multiple data collection methods are used, and a powerful statistical technique (PLS-SEM) is adopted for data analysis. At the empirical level, the study is conducted in the UK. Though it is different from the US in many aspects, very few studies have been conducted in this context in many research areas such as VBM, CG and CE.

Dedication

To my parents, my wife (Dina) and my lovely children (Ahmed and Jaidaa) for their continual love, support and encouragement during my journey to complete this thesis.

To the spirit of the Egyptian Martyrs, who have passed away during the Egyptian revolution for the sake of a better Egypt.

Acknowledgement

Declaration

I hereby declare that the materials contained in this thesis have not been previously submitted for a degree in this or any other university. I further declare that this thesis is solely based on my own research.

I also declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct.

Adel Elgharbawy

Publications Associated With the Thesis

Journal Papers:

Elgharbawy, A., Abdel-Kader, M. (forthcoming 2012). Value-based Management, corporate governance and corporate entrepreneurship: A contingency framework. *Journal of Management and Governance - Special Issue on performance measurements and corporate governance.*

Conference Papers:

Elgharbawy, A., Abdel-Kader, M. (2012). An examination of the effect of Value-based Management on conformance and performance: Evidence from the UK, *The Annual Conference of the British Accounting and Finance Association.* Brighton: BAFA.

Elgharbawy, A., Abdel-Kader, M. (2011). Towards a contingency framework of enterprise governance: Value-based Management approach. *The Annual Conference of the British Accounting and Finance Association*. Birmingham: BAFA.

Elgharbawy, A., Abdel-Kader, M. (2010). Value-based Management, corporate governance and corporate entrepreneurship: A contingency framework. *Performance Measurements and Corporate Governance workshop*. Pisa: JMG.

Elgharbawy, A., Abdel-Kader, M. (2010). An examination of the role of Value-based Management in achieving the objectives of enterprise governance: A contingency approach. *The 23rd Annual Doctoral Colloquium of the European Accounting Association*, Istanbul: EAA.

Elgharbawy, A., Abdel-Kader, M. (2009). Investigating the relationship between enterprise governance and Value-based Management: A contingency approach. *The Annual Conference of the Management Accounting Research Group*. Birmingham: MARG.

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List of Abbreviations

CB-SEM	Covariance-Based Structural Equation Modelling
CCCG	Combined Code on Corporate Governance
CE	Corporate Entrepreneurship
CFROI	Cash Flow Return on Investment
CG	Corporate Governance
CIMA	Chartered Institute of Management Accountants
COM	Compliance
EG	Enterprise Governance
EP	Economic Profit
EVA	Economic Value Added
FIMIX-PLS	Finite Mixture Partial Least Squares
INSEAD	Institut Européen d'Administration des Affaires (European Institute of Business Administration)
MAP	Management Accounting Practice
MAS	Management Accounting System
MP	Market-Based Performance
PEU	Perceived Environmental Uncertainty
PLS	Partial Least Squares
PLS-SEM	Partial Least Squares Structural Equation Modeling
PMS	Performance Management System
PP	Perceived Performance
RI	Residual Income
SEM	Structural Equation Modeling
SVA	Shareholder Value Added
TBR	Total Business Return
TSR	Total Shareholder Return
VBM	Value-Based Management

Chapter (1)

Introduction

1.1 Research Background

Corporate governance (CG) has received much attention since the wave of financial scandals in the early 2000s and the more recent global financial crisis (Moxey and Berendt, 2008). CG reforms including laws, codes, principles and listing rules have been established to protect shareholdersø rights and restore investorsø confidence in the capital market. From the agency theory perspective, these reforms have largely contributed to the evolution of a number of CG mechanisms that aim to mitigate the agency conflicts resulting from the separation between ownership and control (Jensen and Meckling, 1976; Dey, 2008). However, overemphasis is placed on the monitoring and control dimension of governance (conformance), which may hinder entrepreneurial activities, obscure business prosperity (performance) and contribute to a narrow perspective on CG (Filatotchev and Wright, 2006). Therefore, a number of studies raise concerns on possible conflict or tension between the conformance and performance dimensions of governance (Cornforth, 2004; Spira and Bender, 2004; Kovacevic, 2009).

The framework that addresses the tension between the conformance and performance dimensions is known as õEnterprise Governanceö (EG) (Connell, 2004) or õIntegrated Governanceö (Busco et al., 2005). However, little is known about the relationship between accountability (conformance) and enterprise (performance) in the governance context at either organisational or systematic levels, especially in the UK (Short et al., 1998, 1999; Spira, 200, Conell, 2004; Lees, 2005, 2010). Further, little is known about the tools that can help companies to ensure accountability of management to shareholders without obscuring business prosperity and enterprise (Conell, 2004; Busco et al., 2005; Lees, 2005, 2010).

The recent global financial crisis has deepened the ongoing debate about increasing shareholdersø power, and whether it is part of the problem or should be part of the reform

(Bebchuk and Weisbach, 2010). Arguably, value-based management (VBM) is an appropriate approach to keep the balance between conformance and performance and to achieve the objectives of EG (Starovic et al., 2004). VBM adopts shareholder value creation as an overall objective, develops strategies, organisational design, action plans, value drivers and performance measures that are aligned with this objective (Ittner and Larcker, 2001). Accordingly, VBM mitigates the agency conflicts between managers and shareholders (Stewart, 1991; Lovata and Costigan, 2002), aligns their interests (McLaren, 2005) and creates shareholder value (Crowther, 2003). Accordingly, VBM has the potential to bring the two dimensions of EG (conformance and performance) closer and to maintain balance between them (Starovic et al., 2004). Nonetheless, the potential role of VBM in achieving the objectives of EG receives little attention in the literature.

1.2 Research Motivation

This research is motivated by the ongoing debate about CG and its importance in avoiding business crises all over the globe, such as the notorious failure of high profile companies at the beginning of this century (e.g. Enron, WorldCom in the US and Marconi in the UK) and the most recent global financial crisis. These crises have received growing international attention to the role that strong CG structure can play to avoid such crises (Solomon, 2010). This attention has brought CG to the top of the business and political agenda, which has led to a number of reviews and reforms (including CG codes such as the Combined Code on Corporate Governance (CCCG) in the UK and laws such as the Sarbanes-Oxley Act in the US) at both national and international level (Connell, 2004).

However, the recurring and cyclic nature of these crises raised concerns over the efficacy of these reforms in ensuring the effectiveness of CG in controlling management behaviour, as well as motivating their entrepreneurial behaviour towards improving performance and increasing the wealth of business (Keasey et al., 2005). For instance, analysing the causes of failure in the aforementioned companies reveals that poor governance is not the only factor that has led to such failures; other factors such as poor strategies, ineffective risk management, weak strategy execution and inability to respond to fast-changing market conditions are of equal, if not greater importance in explaining

such failures (Connell, 2004; Fahi et al., 2005). For instance, the failure of Marconi in the UK provides an interesting example of acquisition strategy failure (Connell, 2004).

Generally, corporate failures can be attributed to two main reasons (Keasey et al., 2005). First, inefficiency in managing the firmøs operations, which can lead to an overall decrease in firm profits; Second, management failure in undertaking its stewardship role, as managers may operate the firm efficiently and maximise their profits, but they may redirect part of those profits from shareholders via paying excessive remuneration not related to performance. The CG system should consider both efficiency (performance) and stewardship (conformance) dimensions of corporate management (Keasey et al., 2005). Therefore, the need for a wider perspective of CG, such as the EG framework, to address the conformance and performance dimensions is imminent.

This study is also motivated by calls from several scholars (e.g. Short et al., 1998, 1999; Spira, 2001; Connell, 2004; Keasey et al., 2005; Lees, 2005, 2010) to adopt a wide perspective of CG to address both the accountability and enterprise aspects of governance. For instance, Short et al. (1998, 1999) call for studies to investigate the effect of governance on accountability and enterprise, an area which remains poorly understood, especially in the UK, and the link between academic research and practice in this regard is weak, at best.

Since then, a number of studies have addressed the possible tension between conformance and performance within the EG framework. However, there is no agreement among these few studies on the relationship between accountability and enterprise in the governance context at either organisational or systematic levels (Spira, 2001). For instance, it is argued that overemphasis on accountability obscures business prosperity and constraints enterprise (Hampel, 1998; Short et al., 1999). However, other scholars such as Tricker (1997), Charkham (1998) and Connell (2004) argue for no trade-off between accountability and enterprise. Nonetheless, neither view is firmly supported with empirical evidence, which raises the need for further research in this area (Cornforth, 2004; Spira, 2001; Spira and Bender, 2004; Kovacevic, 2009).

The study is also motivated by the development of the CCCG in the UK, which provides an interesting example of the debate about accountability and enterprise within the

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regulatory framework of CG in the UK. However, little is known about compliance with this code and its effect on performance. Therefore, this study attempts to address this gap in the literature.

1.3   Research Problem

The research problem embarks on the agency problem that stems from the separation of ownership and control. CG codes have been introduced proposing best practices to mitigate agency conflicts and align the interests of managers and shareholders (Jensen and Meckling, 1976; Dey, 2008). However, these codes overemphasised the accountability aspects of governance (conformance), which raised some concerns over the enterprise aspects of governance (performance) (Hampell, 1998). For instance, in the UK the Cadbury Report (1992) was criticised for being too prescriptive, focusing more on accountability aspects of governance and risk damaging the spirit of enterprise necessary for economic success (Short et al., 1999). Recently, Larcker et al. (2011) provide some evidence of negative stock price reactions to the recent governance regulations in the US, following the latest global financial crisis.

Therefore, it is argued that there is a need to broaden the concept of governance beyond the compliance to a set of CG rules and laws (conformance) that focus on accountability, to include the performance aspects of governance that focus on strategy and value creation (performance) (Busco et al., 2005). For instance, Short et al. (1999) argue that governance, in a broader definition, should not only focus on monitoring managerial performance to ensure accountability to shareholders, but also mechanisms for motivating management to maximise shareholders wealth should be included.

Furthermore, the literature suggests a potential trade-off or tension between the conformance and performance dimensions of governance (Cornforth, 2004; Spira and Bender, 2004; Kovacevic, 2009). The tension arises because the board of directors in quoted companies is required to play a dual role and to act in two different ways to undertake the responsibilities of the conformance and performance roles (Cornforth, 2004). While the conformance role is reactive, risk averse and more focused on monitoring, the performance role is more proactive, risk taking and more focused on value creation (Cornforth, 2004).

The possible tension between conformance and performance in the governance context is addressed using the EG framework. This framework is based on the notion that the spirit of enterprise governance must work within a sound framework of accountability and the balance between them is crucial (Clarke, 1998). In other words, CG mechanisms should ensure accountability, but not at the expense of enterprise. Therefore, the main problem is to ensure accountability of management to shareholders without sacrificing enterprise, and to identify practices that companies can adopt throughout the business cycle to deliver sustainable performance (Lees, 2010). This problem has implications at both macro and micro levels.

At the micro-level (corporate), the key issue is to ensure that the board undertakes its responsibilities effectively (Lees, 2010), and identifies the best practices and tools that help the management of the company to meet the CG requirements ensuring accountability to shareholders, whilst also seeking business success and value creation (Connell, 2004; Bhimani and Soonawalla, 2005; Lees, 2005). Previous studies basically address the conformance and performance dimensions separately and propose best practices for each dimension independently. For instance, the conformance dimension is addressed by compliance with CG codes and standards subject to audit. Because the performance dimension is not subject to a regime of standards and audits, companies seek best practices and tools such as the balanced scorecards (Connell, 2004; Lees, 2005, 2010). However, little is known about the best practices that can keep the balance between the two dimensions.

At the macro level (policy making), the problem is setting the appropriate regulatory framework of CG practices by policy makers that help businesses to pursue their objectives within an attainable framework of accountability. Understanding the effect of the current regulatory framework of CG on business enterprise and performance would help policy makers to decide if its requirements should be tightened or relaxed. For instance, the development of the CCCG in the UK has witnessed many changes to the code provisions, based on revisions and commissioned reports (Solomon, 2010). While the current study empirically addresses the problem at a corporate level, generalisable findings at this level would provide useful insights to policy makers, which can assist in setting or adjusting the regulatory framework of CG at the macro level.

1.4   Research Questions

To address the research problem, this study uses the EG framework seeking answers to the following questions:

1- Is there any potential trade-off or tension between conformance and performance?
2- Does VBM achieve the objectives of EG, keeping the balance between conformance and performance?
3- Are there any contingency relationships between agency conflicts, company size, uncertainty, strategy and decentralisation on the one hand, and VBM, conformance and performance dimensions of EG on the other hand?
4- Does the fit between the contingency factors, VBM, the conformance and performance dimensions of EG positively affect organisational performance?

1.5   Research Aim and Objectives

This research aims to address the possible tension between conformance and performance within the EG framework, and to assess the ability of VBM to keep the balance between conformance and performance. More specifically, the objectives of this study are fourfold:

1- To develop a contingency framework of EG that operationalises the conformance and performance dimensions into measurable constructs.
2- To assess the possible tension between conformance and performance.
3- To assess the ability of the VBM approach to keep the balance between conformance and performance.
4- To examine the implications of fit among contingency factors, VBM and the conformance and performance dimensions of the EG on organisational performance.

1.6   Research Methodology

To achieve the aim and objectives of this study a cross-sectional survey, based on a questionnaire, is conducted to identify the level of VBM implementation and contingency factors in large and medium quoted companies in the UK. The questionnaire targets the Chief Financial Officers (CFOs) in these companies as key informants. In addition, a content analysis of the annual report is undertaken to measure the level of compliance with the CCCG. Financial data related to the performance is obtained from DataStream, Fame and Thomson One Banker databases. Additionally, Partial Least Squares Structural Equation Modelling (PLS-SEM) is used to test the theoretical model.

1.7   Research Significance

This is a multidisciplinary study that attempts to bridge the gap between management accounting, CG and entrepreneurship disciplines. Unlike previous studies, this study adopts a positivist approach to develop a contingency framework of EG that operationalises the conformance and performance dimensions into measurable constructs. The contingency framework also adopts a holistic approach that investigates the inter-relationships between VBM, CG and CE, as important predictors of organisational performance, which can provide insights into the complementary or conflicting relationships among these predictors in their effects on organisational performance.

Moreover, perspectives from contingency theory and agency theory have been used to develop the theoretical framework, which provide insights into the relationship between conformance and performance. The use of these perspectives can help to reconcile conflicting results, regarding the superiority of value-based measures over traditional performance measures, and the effect of both CG and CE on organisational performance. This can lead to a better design of performance management systems (PMSs), CG structure and entrepreneurship orientation, taking into consideration the contextual and organisational factors.

Understanding the complementary/conflicting relationship between conformance and performance can also help policy makers in deciding the appropriate regulatory framework of CG that ensure accountability without sacrificing enterprise. In addition,

companies can develop a better understanding of best practices that can achieve a balance between conformance and performance.

1.8 Structure of the Thesis

This chapter has presented the research background, research problem, research questions and objectives, and motivations of this research. The remainder of this thesis is structured as follows:

Chapter 2 will explain the literature relating to the EG framework and its dimensions including conformance and performance. The conformance dimension will be discussed in the light of CG systems in the UK and compliance with the CCCG. Performance dimension will be discussed in the light of CE. Once this is established, this chapter will discuss in detail VBM, as a proposed approach to achieve the objectives of EG, keeping the balance between conformance and performance.

Chapter 3 will discuss the main concepts and assumptions of both contingency theory and agency theory, which are adopted in the current study and justification of this adoption. Further, this chapter will explain the process of drawing on the premise of contingency theory and previous studies in VBM, CG and CE literatures to develop a theoretical model. The theoretical model aims to operationally define the conformance and performance dimensions of EG using CG and CE, and to assess the ability of VBM to achieve the objectives of EG, keeping the balance between conformance and performance. Based on the theoretical model, the study hypotheses will be developed and presented in this chapter.

Chapter 4 will outline the main research paradigms and methodologies used in accounting research in general, and justification of adopting a positivist research paradigm and cross-sectional methodology in this study. Methods of data collection including questionnaire survey, content analysis and archive data will be illustrated. This chapter will also illustrate and describe the sample selection process and the process of administrating the survey. Further, analytical procedures will be presented and choices of statistical methods will be justified.

Chapter 5 will outline the development of the measurement model, including the operationalisation of the proposed research constructs in the theoretical model, and the development of the appropriate measures of these constructs, as suggested by the literature. This chapter will explain in detail the procedures used to refine these measurements, using factor analysis in addition to the assessment procedures of the measurement model, including constructs reliability and validity.

Chapter 6 will summarise descriptive statistics of the research constructs, as suggested in the measurement model. Subsequently, it will explain in detail the followed procedures to assess the significance of the structural relationships between the research constructs in the structural model, which provides the basis for testing the research hypotheses.

Chapter 7 will discuss the results of hypotheses testing. It will start with presenting the results of the structural model and the inferences drawn from hypotheses testing. Findings will be compared with prior research findings and differences to be explained. In addition, the results of the multi-group analysis will be discussed, and further analysis of competing models will be provided to highlight the significance of findings from testing the research hypotheses.

Chapter 8 will present a summary of this research and draw conclusions, based on findings from testing the research hypotheses. This chapter will also highlight the limitations of the current study, providing avenues for future research.

Chapter 2

Literature Review

2.1 Introduction

The growing concern about CG in the context of the recent financial crisis casts doubt over the effectiveness of the current CG reforms in avoiding the occurrence of such crises. Therefore, the need to broaden the CG perspective beyond compliance to a set of conventional rules becomes imminent. Arguably, EG is one way towards a wider perspective of CG. Although EG is of importance, only a modest body of literature examines this framework. Therefore, the focus of this chapter is to explain the underlying concepts and principles of the EG framework and its dimensions (conformance and performance), with particular focus on the UK as a context of this study. In particular, this chapter critically reviews the literature related to conformance (CG), performance (CE) and VBM as a proposed approach to address EG, identifying the gaps that can help in developing a theoretical framework for this study.

This chapter is divided into seven sections. The following section will discuss the EG framework in the literature and the underlying concepts and principles. The third section will discuss the conformance dimension of EG through defining CG mechanisms that can be used to mitigate agency conflicts and ensure accountability of management to shareholders. In addition, the development of corporate governance codes in the UK will be presented in this section. The fourth section will discuss the performance dimension of EG through defining CE, as an important aspect of business, to ensure the enterprise aspect of CG and value creation. The fifth section will assess VBM, as a proposed approach to address EG, and achieve a balance between the conformance and performance dimensions of EG. The sixth section will articulate the identified gaps in the literature and the possible directions of this research. Finally, a summary of the chapter will be provided in the seventh section.

2.2 Enterprise Governance

EG illustrates a framework that deals with both the CG and business governance aspects of a company, to bridge the gap between CG studies and business success literature (Connell, 2004). As an important development in CG, EG contributes to developing good CG practices, strategically linked with performance management that focus on the key drivers to move the business forward (Connell, 2004).

EG can be defined as a õset of responsibilities and practices exercised by the board and executive management with the goal of providing strategic direction, ensuring that objectives are achieved, ascertaining that risks are managed appropriately and verifying that an organisationøs resources are used responsiblyö (Information Systems Audit and Control Federation, 2001, cited in Connell, 2004: p.2).

EG or integrated governance, which constitutes the entire accountability framework of the organisation, comprises two dimensions that need to be in balance: conformance and performance (Connell, 2004; Busco et al., 2005). However, the balance between conformance and performance is critical (Clarke, 1998). A potential tension between the two dimensions exists, as a result of the conflicting demands on boards to ensure the business and governance aspects of the business (Connell, 2004; Cornforth, 2004; Spira and Bender, 2004).

However, very little is known about EG and the tools that can help companies ensure the accountability of management to shareholders without obscuring business prosperity and enterprise. Therefore, a critical review of studies that proposes the EG framework is provided below.

2.2.1 The Enterprise Governance Framework

A number of studies in the literature address the EG framework and address the tension between conformance and performance in the governance context. This framework is based on the notion that the spirit of EG must work within a sound framework of accountability and the balance between them is crucial (Clarke, 1998). In other words, governance mechanisms should ensure accountability, but not at the expense of enterprise. In addition, this framework focuses on the dual role of board of the directors

in corporate governance (Huse, 2007). This role includes protecting shareholders' rights through ensuring accountability, meanwhile enhancing value creation by providing knowledge and resources that help managers to assume the risks that benefit shareholders (Zahra et al., 2009).

2.2.1.1 Keasey and Wright (1993)

One of the earliest studies (Keasey and Wright, 1993) proposes a CG framework from a wide perspective, based on two key elements (see figure 2.1): supervising of management performance and ensuring accountability of management to shareholders and other stakeholders. While accountability contributes to the stewardship dimension, supervision of management contributes to the efficiency dimension of CG and both are important to mitigate agency conflicts that result from separation between ownership and control.
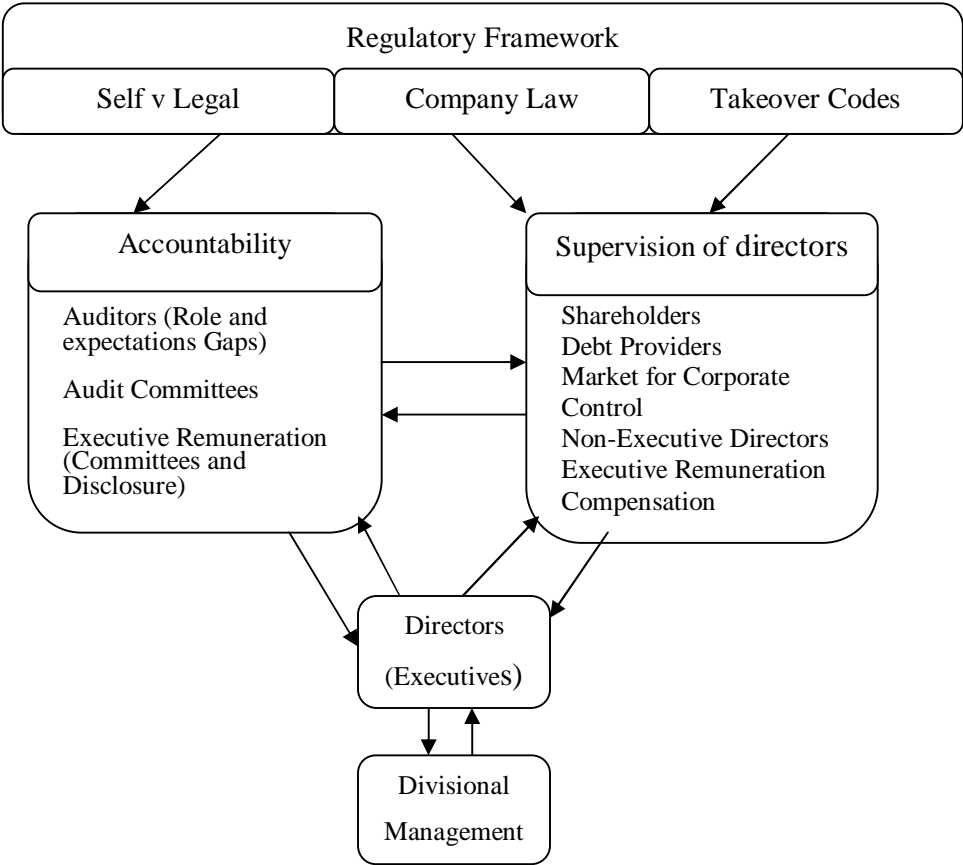
Figure 2.1: Corporate Governance Framework

Source: Keasey and Wright (1993, p. 292)

The framework suggests that good CG should not only monitor and control the management, but should also motivate managerial behaviour towards business success. However, the two dimensions are argued to be closely inter-related and there is no implication of conflict between the two dimensions in this framework.

2.2.1.2   Charkham (1995)

In a broader systematic view, Charkham (1995) conducts a comparative study of CG in five countries. The study identifies two main principles for assessing CG systems that are applicable at all times and everywhere. Firstly, dynamism that enables management to drive a company forward without unjustified constraints that may result from governmental interference, fear of litigation or displacement. Secondly, accountability that ensures that management is accountable for its decisions and actions. However, this framework does not provide any implication for possible conflicts between the two criteria (Spira, 2001).

2.2.1.3   Tricker (1997)

Similarly, Tricker (1997) develops a framework of board activities from the information systems perspective. The framework suggests that the board of directors should be looking both internally (business activities) and externally (strategic thinking), whilst also focusing on the future, present and recent past (see figure 2.2).

Outward Looking	Providing Accountability	Strategy Formulation
Inward Looking	Approve and work with and through the CEO	
	Monitoring and Supervision	Policy Making
	Past and Present Oriented	Future Oriented

Figure 2.2: Framework for Analysing Board Activities

Source: Tricker (1997, p. 109)

To do so, the board is expected to spend a great deal of time in formulating strategies and setting the direction of the company (future oriented/outward looking), to be followed with policy and plan setting to direct the management decisions necessary to implement these strategies (future oriented/inward looking). However, the board is expected to focus on the business performance monitoring and supervising management (past and present oriented/inward looking), and to undertake its responsibility of being accountable to shareholders and other stakeholders (past and present oriented/outward looking).

Furthermore, the framework addresses the paradox in CG where one board is expected to play two different roles (see figure 2.3), performance and conformance. The former contributes to the long term performance of the company through strategy formulation, policy making and producing guidelines to direct management decisions. The latter ensures that management complies with policies, plans and regulations to ensure accountability to shareholders and other stakeholders. While the framework admits the difficulty the directors may experience in õwearing two hatsö, these roles are seen as complementary to each other rather than being in conflict (Spira, 2001).

Outward looking	Conformance	Performance
Inward looking	Role	Role
	Past and Present Oriented	Future Oriented

Figure 2.3: Two Primary Functions of the Board

Source: Tricker (1997, p. 110)

2.2.1.4   Connell (2004)

In an important research project commissioned by IFAC and CIMA, Connell (2004) develops an EG framework comprising conformance and performance dimensions (see figure 2.4). The basic notion of this framework is that good CG or conformance on its

own cannot make a company successful. The performance dimension, which focuses on strategy and value creation, should also be considered. To address the oversight gap in the performance dimension, Connell (2004) proposes a õCIMA strategic scorecardö as an effective mechanism to assist the board of directors in identifying strategic positions, dealing with strategic options, implementing strategies and tackling strategic risks. In addition, twenty seven case studies were carried out to identify the main causes of corporate successes and failures. CG issues and strategic issues were the main themes for the success and failure stories.

The study also suggests that while conformance leads directly to accountability, it can indirectly contribute to value creation. Similarly, performance leads directly to value creation, but indirectly contributes to accountability and assurance. Though this framework acknowledges the conflicting demands on boards to ensure that both the conformance and performance aspects of business are addressed in balance, an implication of a complementary relationship between the two dimensions exists in this framework.
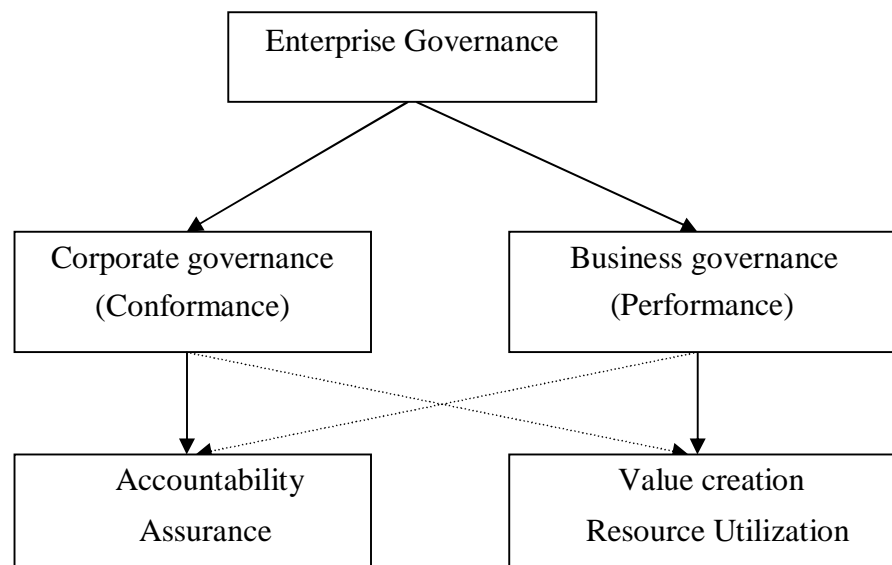
Figure 2.4: Enterprise Governance Framework

Source: Connell (2004, p. 11)

2.2.1.5   Busco et al. (2005)

Similarly, Busco et al. (2005, 2006) broaden the notion of EG, adding a third dimension to conformance and performance that relates to knowledge-based governance. This dimension manages the processes of learning and knowledge sharing through knowledge management, learning processes and organisational culture. According to Busco et al. (2005, 2006), knowledge management and learning processes contribute to both conformance and performance dimensions of governance through improving individual commitment to the company rules, principles and goals. Therefore, effective governance systems should integrate three main dimensions. The first is compliance with rules, codes and principles. Secondly, measurement-based governance that measures and controls performance and value creation using forecasts, analyses and performance measures. Thirdly, knowledge-based governance manages the processes of learning and knowledge sharing through using knowledge management.
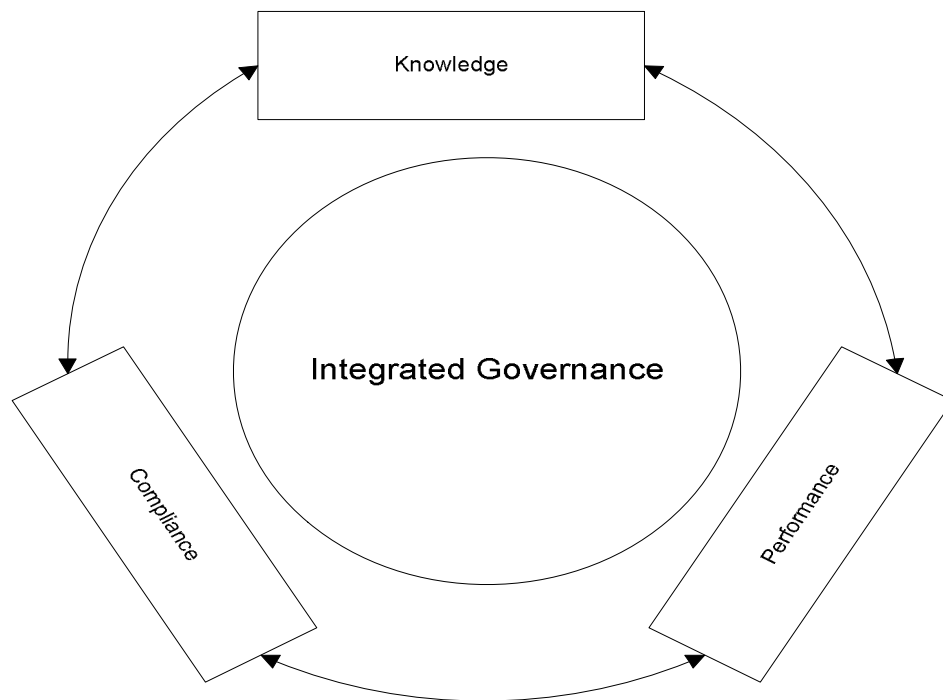
Figure 2.5: Integrated Governance Framework

Source: adapted from Busco et al. (2005, p. 37)

Using case studies of global organisations, the study provides empirical evidence supporting the role of PMSs (e.g. balanced scorecard) in integrating governance. In particular, the way in which the performance and knowledge dimensions are related to each other through PMS, which can be used as a tool to communicate and align the objectives, priorities and values of the company with individual priorities.

2.2.1.6   Fahi et al. (2005)

Similarly, Fahi et al. (2005) extend the EG framework further, adding corporate responsibility as a third dimension to conformance and performance dimensions. Corporate responsibility comprises environmental and social stewardship. The importance of this dimension stems from the growing interest in creating stakeholders value including employees, customers, suppliers and community in addition to the increasing requirements for reporting on the social, environmental, ethical and cultural impact of corporate practices.
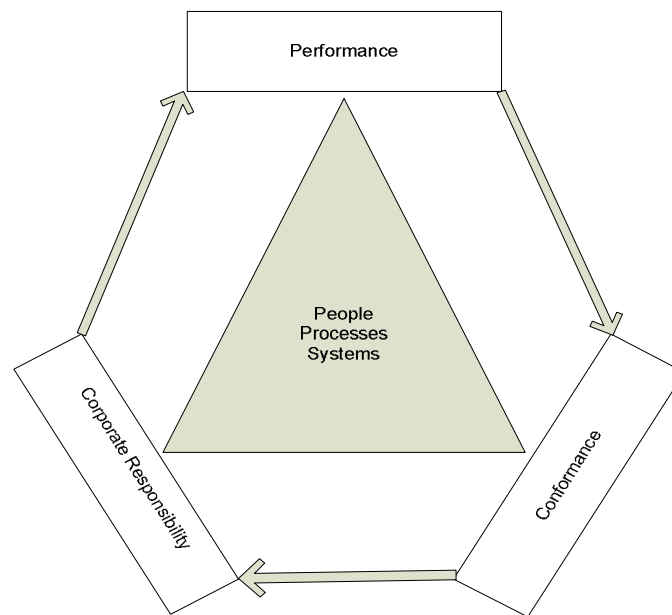
Figure 2.6: Enterprise Governance Framework

Source: Fahi et al. (2005, p. 3)

According to this framework, the relationship between conformance and performance is interchangeable, as the conformance leads directly to accountability and assurance, but can contribute to value creation. Conversely, performance leads directly to value creation

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but can contribute to accountability and assurance. In addition, corporate responsibility is as important as conformance and performance to sustainable value creation. Furthermore, this framework has highlighted the importance of people (employees), culture, innovation, leadership and communication in achieving the best results in performance.

2.2.1.7 Bhimani and Soonawalla (2005)

From the reporting perspective Bhimani and Soonawalla (2005) introduce a framework of corporate responsibilities comprising a spectrum for corporate disclosure responsibilities. The spectrum locates Corporate Financial Reporting (CFR), CG, Corporate Social Responsibility (CSR) and Stakeholder Value Creation (SVC) on a continuum of corporate disclosure responsibility (see figure 2.7). The framework contributes to the debate on conformance and performance reporting issues, taking a comprehensive approach to address the corporate disclosure responsibility from different perspectives.

Corporate Conformance					Corporate Performance
	Corporate Financial Reporting	Corporate Governance	Corporate Social Responsibility	Stakeholders Value Creation	
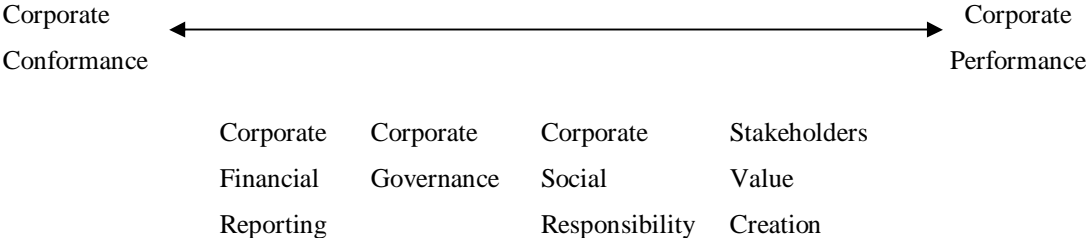
Figure 2.7: Corporate Responsibilities Continuum

Source: Bhimani and Soonawalla (2005, p. 168)

The basic notion of the continuum is that conformance is not entirely detached from performance assurance, and performance itself can be regarded as one form of corporate conformance requirements. At one end of the continuum conformance with reporting standards is emphasised, where audit committees can be used as a key oversight mechanism. At the other extreme of the continuum emphasis is placed on corporate performance, where codes and standards are not applicable. Instead, companies can rely on best practice tools and techniques. In addition, there is an increasing difficulty in imposing mandatory codes and standards moving in the continuum from CFR to CG to

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CSR to SVC. However, a number of oversight mechanisms can be used across the four categories of corporate responsibilities (see table 2.1).

Table 2.1: Oversight Mechanisms on Corporate Responsibilities

Financial Reporting	Corporate Governance	Corporate Social Responsibility	Shareholder Value Creation
GAAP	SarbanesóOxley Act	GRI	Strategic Scorecard
GAAS	Audit Committees	SA 8000	Balanced Scorecard
SEC/FSA/AICPA Guidelines	Internal Audit Mechanisms	ISO 9000	Economic Value Added
	Remuneration Committees	Stakeholder Advisory Panels	Quality Function
	Audit Committee Charter Matrices		Deployment Matrices
			Other Business Performance Management Tools

Source: Bhimani and Soonawalla (2005, p. 171)

2.2.1.8   Van der Stede (2009)

From the risk management perspective, Van der Stede (2009) introduces the EG framework reflecting on the recent global financial crisis and economic downturn. From that perspective, EG is a õconceptual framework - not a particular tool per se - that puts reliable scrutiny and sustainable performance under one umbrella, addressing how firms might think about the need to align both items in the short and long term. It resonates with formal risk management approaches, such as Enterprise Risk Management (ERM)ö (Van der Stede, 2009: p. 40).

According to Van der Stede (2009), the EG framework (see figure 2.8) involves business governance, which is related to short and long-term performance (sustainable performance). It also comprises CG, which relates to conformance, risk management or scrutiny, both in the short and long term (reliable scrutiny).

The cornerstone of this framework is its focus on the long term õreliableö scrutiny (risk management) and õsustainableö performance. In addition, this framework posits that õrisk management and performance are two sides of the same coin. They should be considered in unison rather than subjugating the level of scrutiny as a mere reaction to performance functionsö (Van der Stede, 2009: p.40). This study contributes to the EG framework through incorporating an important rising theme in CG, i.e. risk management. However, the concepts are very abstract and lack empirical support.
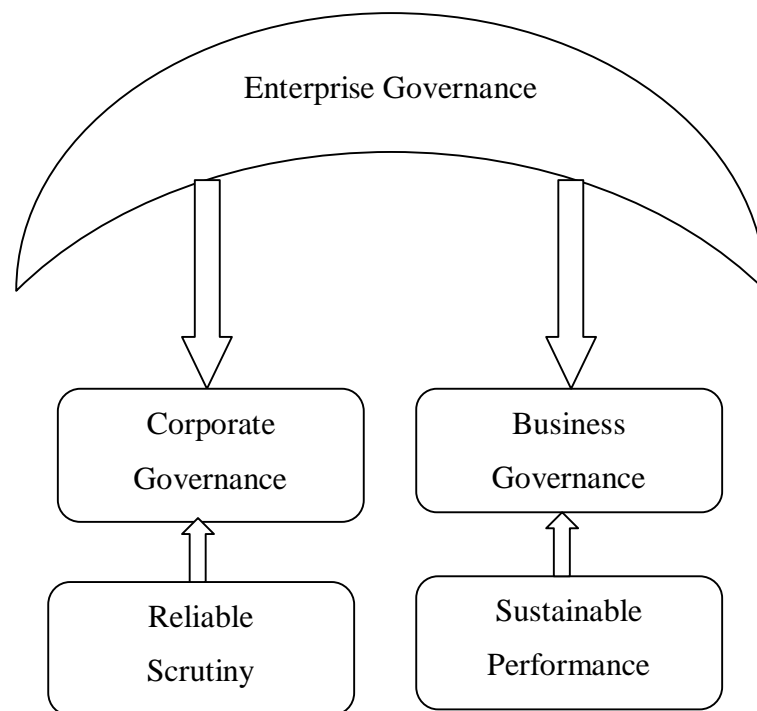
Figure 2.8: Enterprise Governance (Conformance and Performance)

Source: Van ser Stede (2009, p. 40)

2.2.2 Evaluating Previous Studies of Enterprise Governance

The review of previous studies that have addressed the EG framework (see table 2.2) indicates that these studies agree on at least two dimensions of EG, namely conformance and performance. The conformance or compliance is used as an equivalent to accountability and the performance dimension is used as an equivalent to enterprise. However, the exact relationship between conformance (accountability) and performance (enterprise) in the governance context is not clear from these framework at either

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organisational or systematic levels (Spira, 2001), especially since most of these frameworks lack empirical evidence (e.g. Keasey, 1993; Tricker, 1997; Bhimani and Soonawalla; Fahi et al., 2005; Van der Stede, 2009).

According to Spira (2001), the literature is dominated by the agency theory perspective, where systems are assessed based on the level of alignment achieved between the agent and principal interests. From this perspective, enterprise can be seen as a part of the governance system, rather than conflicting with it. For instance, the EG frameworks proposed by Tricker (1997), Charkham (1998) and Connell (2004) support this view, arguing that there is no trade-off between enterprise and accountability.

However, it is argued that overemphasis on accountability can obscure business prosperity and constraint enterprise (Hampel, 1998; Short et al., 1999). The literature also suggests a potential trade-off between the conformance and performance dimensions of governance (Cornforth, 2004; Spira and Bender, 2004; Kovacevic, 2009) as a result of the conflicting demands on boards to undertake the responsibilities of the conformance and performance roles (Cornforth, 2004).

Also, some studies with focus on entrepreneurial activities have challenged the basic assumptions of the agency theory. For instance, O'Sullivan (2000) provides empirical evidence from the US and Germany that market for corporate control as a governance mechanism negatively affects innovation and hinders enterprise. Nonetheless, neither view is firmly supported with empirical evidence, which raises the need for further research in this area (Spira, 2001). According to Short et al. (1998, 1999), the effect of governance on accountability and enterprise remains poorly understood, especially in the UK and the link between academic research and practice in this area is weak at best.

Furthermore, most of these frameworks (e.g. Keasey, 1993; Charkham, 1995; Tricker, 1997; Fahi et al., 2005) do not provide a clear idea about how companies can keep a balance between conformance and performance in terms of best practice and the tools that can be used to achieve the main objective of EG.

Although Connell (2004) proposes "the CIMA strategic scorecard" to assist the board of directors to address the strategic oversight gap, very little is known about its applications in practice. Apart from the case study by Busco et al. (2005), which focuses on the role of

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strategic PMSs such as the balanced scorecard to integrate conformance with performance with knowledge management, to the best of the researcherøs knowledge no other studies provide any empirical evidence on the role of PMSs in achieving the objectives of EG.

2.3 The Conformance Dimension

The rationale of the conformance or control role of the board of directors is primarily based on agency theory (Hung, 1998). The board of directors can play an important role in overcoming the agency problem that arises from the separation of the management function (initiation and implementation) and the control function (ratification and monitoring) (Jensen and Ruback, 1983). The main role of a board of directors is to õreduce the potential divergence between shareholders and management, minimise agency costs and protect shareholdersø investmentsö (Hendry and Kiel, 2004: p.503). The control role of the board of directors can be exercised through monitoring and approving important decisions, hiring, firing and rewarding top management (Fama and Jensen, 1983b).

Within the EG framework conformance is equivalent to CG and addresses a number of issues, such as board of directors (role, structure, committees, remuneration) and internal controls (Connell, 2004; Lees, 2010). Conformance has been extensively covered in the literaure and can be addressed through compliance with corporate governance codes and/or standards (Connell, 2004; Lees, 2010). In addition, the audit commitee can be used as an oversight mechanism at board level to ensure the effectiveness of CG practices (Connell, 2004).

CG can be defined as õthe system by which companies are directed or controlledö (Cadbury, 1992), or õthe process of supervision and control intended to ensure that the companyøs management acts in accordance with the interest of shareholdersö (Parkinson, 1994: p.159). Despite the growing interest in CG as an essential and dynamic aspect of business, there is no distinct, widely accepted definition for CG (Solomon, 2010). Instead, different definitions of CG reflect the variation in CG according to the context (Hambrick et al., 2008) and the variation in theoretical perspectives.

Table 2.2: Summary of Previous Studies of Enterprise Governance

	Keasey and Wrights (1993)	Charkham (1995)	Tricker (1997)	Connell (2004)	Busco et al. (2005)	Fahi et al. (2005)	Bhimani and Soonawalla (2005)	Van der Stede (2009)
First Dimension	Accountability	Accountability	Conformance	Conformance	Compliance	Conformance	Conformance	Corporate Governance
Second Dimension	Supervision of Management Performance	Dynamism	Performance	Performance	Performance	Performance	Performance	Business Governance
Third Dimension					Knowledge Management	Corporate Responsibility		
Empirical Study	No	Comparative Study	No	Case Study	Case Study	No	No	No

The theoretical perspectives range from a narrow view that restricts CG to the relationship between a company and its shareholders, as articulated in agency theory, to a broader view that extends CG boundaries to comprise the relationships between a company and different stakeholders including shareholders, employees, customers and suppliers, as articulated in stakeholder theory (Solomon, 2010).

2.3.1 Corporate Governance and Agency Problems

Agency problems arise from a possible disagreement between the utility functions of agents and principals (Lan and Heracleuos, 2010) and costless contracting (Fama and Jensen, 1983a). Different sources of agency problems can be identified, including moral hazard (Jensen and Meckling, 1976; Fama, 1980), earning retention, risk aversion (Jensen, 1986) and time horizon (Healy, 1985).

From the agency perspective, at least three ways can be used to increase the likelihood that management acts in the interest of the shareholders: bonding managers contractually, monitoring them and/or providing them with incentives that align their interests (Denis, 2001). However, complete contingent contracts in an uncertain world are unfeasible (Shleifer and Vishny, 1997). Monitoring solutions are costly and can be practically impossible (Denis, 2001). Long-term incentive contracts alone cannot align the conflicting interests (Healy, 1985; Shleifer and Vishny, 1997).

Therefore, a number of CG mechanisms (Weir et al., 2002) have been proposed to constrain the opportunistic behaviour of management (Fama and Jensen, 1983a), mitigate agency conflicts (Dey, 2008) and minimise agency costs (McKnight and Weir, 2009). These mechansims can be classified into external and internal CG mechanisms.

External governance mechanisms include the managerial labour market and market for corporate control. Efficient labour markets ensure that corporate mangement is rewarded according to the market estimation of the extent to which they are aligned with shareholdersø interests based on past performance (Fama, 1980). Moreover, the market for corporate control, as a part of the managerial labour market (Jensen and Ruback, 1983) can be considered as the ultimate disciplinary mechanism for weakly performing managers that allow replacement of the current management team with a more efficient one.

However, the managerial labour market and market for corporate control only represent a partial solution to the agency problem and they are not generally welcomed by managers, as they may lose their jobs or the value of their human capital (Ezzamel and Watson, 2005). Therefore, internal governance mechanisms are rather important to mitigate agency conflicts.

Internal CG mechanisms include institutional investors, managerial ownership, non-executive directors, independence and audit committees. For instance, institutional investors can monitor company management, align management interests with those of the shareholders and consequently improve the company's performance (Agrawal and Knoeber, 1996). Institutional investors also have the power to initiate performance measures that align the interests of management and owners and help to increase shareholder value (Lovata and Costigan, 2002).

The increased percentage of management ownership in the company is an important governance mechanism to mitigate agency conflicts and reduce agency costs (Lovata and Costigan, 2002). Consequently, if managers have a large interest in the company's capital, there is less emphasis on performance evaluation systems and contracting that align shareholders' and managers' interests. Conversely, a lower percentage of management ownership can lead to more reliance on contracting and PMSs (such as VBM), that align shareholders' and managers' interests (Hogan and Lewis, 2005; Lovata and Costigan, 2002).

The board of directors is also one of the most important governance mechanisms that can mitigate agency conflicts through monitoring management decisions and undertaking the responsibility of hiring, firing and rewarding management (Fama and Jensen, 1983b; Watson and Ezzamel, 2005). Board characteristics such as board size (Hanifa and Hudaib, 2006), non executive directors (Watson and Ezzamel, 2005), duality (Weir et al., 2002) and board committees, such as audit committees (Weir et al., 2002) play an important role in determining the board effectiveness.

2.3.2 Development of Corporate Governance in the UK

The development of CG in the UK provides an interesting example of the continuous debate on accountability and enterprise in the governance context, which makes it an appropriate context to address the research problem. The UK, as a leading country, in the field of CG, is one of the earliest countries to introduce a flexible regulatory framework, based on a õcomply or explainö basis, since publication of the Cadbury

Report (1992). In this section, the development of the CG codes in the UK is discussed reflecting on the EG issue. A summary of these developments is also provided at the end of this section (see table 2.3).

2.3.2.1   Cadbury Report (1992)

CG has received increased interest in the UK in the last two decades. Following the failure of large companies at the beginning of the 1990s in the UK (e.g. Maxwell and BCCI), the Cadbury Report (1992) has been issued in response to the public concern over the way in which companies were being operated, and the worries regarding the misuse of power prevailing in the Maxwell case (Solomon, 2010). Therefore, the main focus of its recommendations is on control and accountability issues (Keasey et al., 2005).

In this sense, the report emphasises the control role of the board of directors, as the most important governance mechanism, transparency and commnication issues with shareholdrs, and the role of institutional investors (Solomon, 2010). For instance, the Cadbury Report (1992) recommends separation of the chief executive and chairman posts on the board. It also calls for more non-executive director representation on the board of directors (three at least).

Though Cadbury Report had a significant contribution to good CG practices in the UK and all over the world (Solomon, 2010), it has been criticised for being too prescriptive and overemphasising accountability and control aspects of governance at the expense of enterprise (Short et al., 1999).

2.3.2.2   Greenbury Report (1995)

In 1995 the Greenbury Committee was established as a response to concerns over directorsø excess remuneration (Solomon, 2010). The Greenbury Report (1995) includes some guidelines for setting and reporting remuneration for directors by the remuneration committee, comprising only non-executive directors. However, the basic objective of this report is to establish some balance between the executivesø remuneration and their performance, rather than reducing their salaries and compensations (Solomon, 2010).

2.3.2.3   Hampel Report (1998)

In 1995 the Hampel Committee was established to review the implementation of both the Cadbury Report and the Greenbury Report. The Committee submitted its report to

Table 2.3: Key Developments in CG Reforms in the UK

Date	Event
May 1991	The Cadbury Committee was established
Dec 1992	Publication of final report of the Cadbury Committee
April 1993	UK Stock Exchange Listing Rules require statement of compliance with Cadbury Code of Best Practice
Jan 1995	The Greenbury Committee was established
July 1995	Publication of the Greenbury Report and Code of Best Practice
Oct 1995	UK Stock Exchange Listing Rules require statement of compliance with Greenbury Code of Best Practice
Nov 1995	The Hampel Committee was established
Jan 1998	Publication of the Hampel Report
June 1998	Publication of the Combined Code (Hampel, Cadbury and Greenbury)
Sept 1999	Publication of the Turnbull Report on Internal Control
Aug 2002	The Directorsø Remuneration Report Regulations 2002 came into force for reporting periods ending on or after 31 December 2002
Jan 2003	Publication of the Higgs ÷Review of the Role and Effectiveness of Non-executive Directorsø
Jan 2003	Publication of the Smith Report about audit Committees
July 2003	Publication of the CCCG to apply for reporting periods beginning on or after 1 November 2003
July 2005	The FRC started a review of the Combined Code (2003) to evaluate the progress in implementing the Code and to address any emergent issues
June 2006	Publication of the CCCG to apply for reporting periods beginning on or after 1 November 2006
April 2007	The FRC started a review to the Combined Code (2006) to evaluate the progress in implementing the Code and to address any emergent issues
Dec. 2007	The FRC began consultation on a small number of possible amendments to the Code
June 2008	Publication of the Combined Code (2008) to apply for reporting periods beginning on or after 29 June 2008
Oct. 2008	The Chancellor of the Exchequer requested a review of the causes of the global financial crisis
March 2009	The Turner Review has been issued after reviewing the causes of bank failures and the global financial crisis
Nov 2009	Walker Report has been issued after reviewing the causes of bank failures and the global financial crisis
May 2010	The UK Corporate Governance Code (2010) came into force for the financial years beginning on or after 29 June 2010

Source: Adapted from Keasey et al. (2005, p. 24)

the Financial Reporting Council (FRC) to address the concerns raised for the Cadbury Report, related to the overemphasis on accountability, in an attempt to keep a balance between accountability and business prosperity (Solomon, 2010). Therefore, the report criticises the ÷box-tickingø approach used by many companies; instead, a CG system based on principles rather than prescription was suggested (Short et al., 1999; Keasey et al., 2005). Thus, the compliance should be with the spirit of the code, not the form and letters.

The Hampel Report (1998) sets a number of principles, recommending at least one third of directors to be non-executives, the majority to be independent with disclosure requirements in the annual report about their independence. One of the non-executive directors should be appointed as a senior non-executive, to whom any concerns should be passed.

2.3.2.4   The Combined Code (1998)

After issuing the Hampel Report, the Hampel Committee provided a set of principles endorsing the Cadbury, Greenbury and Hampel recommendations in the Combined Code (1998). This code was published by the London Stock Exchange (LSE) in 1998 and continued to be based on a õcomply or explainö basis, consistent with the UK approach for CG (Combined Code, 1998).

2.3.2.5   Turnbull Report (1999)

The Institute of Chartered Accountants in England and Wales published the report of the Turnbull Committee to address the internal control issue in the UK CG system, which received little attention in previous reports (Turnbull Report, 1999). The report provides some guidelines to implement a sound internal control system to fulfil the requirements of the Combined Code (Turnbull Report, 1999).

2.3.2.6   The Higgs Report (2003)

The collapse of large companies (e.g. Enron and WorldCom) in the US at the beginning of this century has revealed that non-executive directors were not effective in performing their governance role in monitoring and management behaviour (Solomon, 2010). In the UK, the Higgs Committee issued its report in 2003, after reviewing the role and effectiveness of non-executive directors in performing their governance role (Higgs Report, 2003).

Though the Higgs Report endorses most of the provisions of the Combined Code, it comprises a number of significant reforms that have received a sizeable opposition from a number of chief companies, which have contributed to an intense debate between the management of companies and institutional shareholders (Keasey et al., 2005). For instance, the report recommends increasing the proportion of non-executive directors in the boards (at least half), making their remuneration more reasonable, and establishing stronger links between non-executive directors and shareholders (Solomon, 2010).

Therefore, many critical comments have been raised towards the report's recommendations, as being very prescriptive, divisive with regard to the relationship between executive and non-executive directors and may challenge the role of the chairman by the new role of the senior independent non-executive director (Keasey et al., 2005).

2.3.2.7   The Smith Report (2003)

Parallel to Higgs Report, the Smith Report (2003) was published in the wake of corporate failures in the US, to address the audit committee issues in the UK CG system. The audit committee and internal audit function have been highlighted as one of the main reasons for the high profile scandal of large companies, such as Enron (Solomon, 2010). The Smith Report (2003) covers the main area of the audit committee including membership, responsibilities, communication with shareholders and the relationships between the board of directors and the auditor..

2.3.2.8   The Combined Code on Corporate Governance (2003, 2006, 2008)

In 2003, the FRC issued the Combined Code on Corporate Governance (2003) comprising the recommendations of previous reports including Cadbury, Greenbury, Hampel, Turnbull, Higgs and Smith Reports (Combined Code, 2003). Though the Combined Code is not as prescriptive as the Higgs Report, it retains almost all the recommendations of this report, changing the language and the tone, rather than the content, to absorb the business opposition and critics (Keasey et al., 2005; Solomon, 2010).

In response to concerns regarding the somewhat prescriptive recommendations of the Higgs Report, the Combined Code relaxed some of these recommendations (Combined Code, 2003). For instance, allowing small companies under FTSE 350 not to comply with the recommendation that at least half of the board members are

independent non-executives. Furthermore, the recommendation that the chairman of the board should not chair the nomination committee was dropped and the recommendation related to the CEO, who should not become the chair of the same company was been moderated, to allow such appointments following consultation with major shareholders (Keasey et al., 2005).

In 2005, the FRC started a review of the Combined Code on Corporate Governance (2003) to evaluate the progress in implementing the Code. Following this review, the FRC consulted on several changes to the 2003 version of the Combined Code and the changes were approved issuing the Combined Code on Corporate Governance (2006), to come into effect for reporting periods beginning on or after 1 November 2006. These changes allow the chairman to sit on the remuneration committee, where he or she was considered independent at the time of appointment, and the shareholders to vote by proxy with the option of withholding their vote (Combined Code, 2006).

In 2007, the FRC started a review to the Combined Code on Corporate Governance (2006) and some changes to the code provisions were approved issuing the Combined Code on Corporate Governance (2008), to come into effect for reporting periods beginning on or after 29 June 2008. These changes relate to removal of the restriction on an individual to chair more than one FTSE 100 company and allowing the chairman of listed companies outside the FTSE 350 to be a member of, but not chair, the audit committee, providing he or she was considered independent on appointment (Combined Code, 2008).

2.3.2.9 The UK Corporate Governance Code (2010)

In the wake of the recent global financial crisis, the Chancellor, in October 2008, requested a review of the causes of the global financial crisis and recommendations for regulations (Solomon, 2010). In response, the Turner Review was published in March 2009, which covered a number of issues that caused the bank failures and especially those related to the excessive remuneration in the banking sectors and the link between the structure of remuneration and executivesø attitudes towards risk taking (Solomon, 2010).

Similarly, in November 2009 the Walker Report was issued after reviewing the CG practices in the UK banks and other financial institutions.

The Walker Report comprised a number of recommendations addressed to the FRC, some of these recommendations have been implemented through revisions to the Code (now renamed the UK Corporate Governance Code). The recommendations focus on executive remuneration and the role of the board of directors, including issues, such as increasing the time commitment from non-executive directors and paying more attention to risk management (Solomon, 2010).

In March 2009, the FRC launched a review of the implementation of the Combined Code. Following the consultation on the proposed changes to the code, the UK Corporate Governance Code (formerly the Combined Code) published in May 2010, to come into effect for the financial years beginning on or after 29 June 2010. The new code comprised significant changes, including the name and structure of the code, which reflects many of the recommendations of the Walker Report (Corporate Governance Code, 2010).

2.3.3 Compliance with Corporate Governance Codes in the UK

Since the publication of the Cadbury Report (1992), when CG reform started in the UK, the voluntary approach of õcomply or explainö has been adopted as the preferred approach of regulation in the UK (Solomon, 2010). The rationale of this approach is that there is no single structure of CG that can fit all companies. Instead, every company may select the appropriate CG mechanisms that fit with its conditions. Therefore, to allow more flexibility, compliance with the code is not compulsory; however, disclosure related to compliance is (MacNeil and Li, 2006).

In general, the results of the surveys conducted to evaluate the level of compliance with the different CG codes in the UK reveal that these codes are widely accepted in practice and a great number of compnies are fully compliant with all provisions. Moreover, the level of compliance is increasing overtime (MacNeil and Li, 2006; Aguilera and Cuervo-Cazurra, 2009). For instance, the survey commissioned by the Cadbury Committee in 1995 reported a very high level of compliance by large quoted companies with three or more non-executive directors in the board (97%) and separation between chairman and CEO posts (82%) (Keasey et al., 2005). Similarly, Conyon and Mallin (1997) and Laing and Weir (1999) found a very high degree of compliance to the recommendations of the Cadbury Report and an increasing trend, especially between large companies, to comply with these recommendations such as dealing with duality, non-executive directors membership and board sub-committees.

However, since issuing the first version of the CCCG in 1998, fewer studies have assessed the compliance with the code's provisions and principles. For instance, Pass (2006) investigates the extent of compliance with the combined code (2003) for a sample of 50 large UK companies. The results suggest that 17 (34%) of the companies are fully compliant with the code's provisions throughout the reporting year, 22 companies (44%) did not fully comply but took some actions or provided acceptable explanations and only 11 companies (22%) continued to breach the code without taking actions or even providing acceptable explanations (Pass, 2006).

Similarly, Arcot et al. (2010) analysed compliance with the provisions of the CCCG in 245 non-financial companies belonging to FTSE 350 for the period from 31 December 1988 to 30 June 2004. In a sample of 1286 company-year observations, the overall frequency of compliance with eight of the eleven provisions of the code was 84.7% with an increasing trend of compliance over the years. On average, the overall compliance per provision increased from 76.7% to 91.4% between the period from 1998 to 2004.

However, MacNeil and Li (2006) argue that despite the increased level of compliance over time, there is a significant prevalence of non-compliance. Further, the non-compliance is not closely monitored by investors, whose tolerance to non-compliance is related to greater financial performance, as measured by the share price.

2.3.3.1 Compliance with Corporate Governance Codes and Performance

In spite of the fact that there has been some evidence that UK companies have, in general, complied with the principles of the Cadbury Report (Conyon and Mallin, 1997; Laing and Weir, 1999) and the CCCG (Pass, 2006; Arcot et al., 2010), little is known about the impact of compliance on corporate performance, especially in the UK (Laing and Weir, 1999) and the results are mixed (Weir and Laing, 2000).

Furthernore, review of the CG literature indicates that most studies examine the effect of single or some internal and external CG mechanisms, such as managerial ownership (Short and Keasey, 1999; Davies et al., 2005) on performance rather than investigating the overall compliance with the CG code. However, the emphasis on relating a single or subset of CG mechanisms to performance has been criticised, as it ignores the fact that CG mechanisms are substitutes and not independent of each other (Weir et al., 2002). Therefore, a more holistic approach has emerged in the literature

investigating the relationship between a bundle of CG mechanisms or CG indices and performance.

For instance, Weir et al. (2002) analyse the relationship between corporate performance and a number of internal CG mechanisms (including board structure variables, such as proportion of non-executive directors, duality, debt financing and managerial ownership) and external corporate mechanism (market for corporate control) for all quoted, non-financial UK companies in the UK during the period 1994-1996. The results suggest that the market for corporate control is an effective governance mechanism and can work as a substitute for other internal governance mechanisms. Accordingly, Weir et al. (2002) conclude that prescribed internal governance mechanisms may not be effective, instead companies should have more freedom to choose internal governance mechanisms that fit their situations.

In a seminal work, Gompers et al. (2003) develop a CG index (CGI), comprising 24 equally-weighted CG provisions of approximately 1500 large companies in the US. The study concludes that companies with strong shareholder rights (measured by CGI) outperform (measured in risk-adjusted stock returns) companies with weak shareholder rights during the 1990s. However, these results are challenged by a similar study by Core et al. (2006) who did not find any evidence to support the argument that weak governance causes poor stock returns in the same sample of companies used in Gompers et al.(2003) over an extended period of time (1990-2003). Bhagat and Bolton (2008) provide three alternative ways to explain the mixed results. The superior return performance for companies wih strong shareholder rights may be specific for a period and sample, the inadequate risk-ajustment, and/or the endogenity in governance-performance relationship.

In summary, most of the previous studies are based in the US and examined only a small subset of CG mechanisms. In general, the results are mixed (Hanifa and Hudaib, 2006) and suggest that some mechanisms are linked to performance, while others are not (Brown and Caylor, 2009). To overcome this problem, other studies examined the impact of a summary measure of governance on firm performance (e.g. Gompers et al., 2003) and found that firms with lower shareholder rights (weak CG structure) have lower firm valuation. However, Core et al. (2006) could not sustain the same results over an extended period of time. Therfore, more studies are needed in this area of research, especially in the UK, using a more holistic approach to develop a

better understanding of the relationship between the overall compliance with CG codes and performance.

2.4 The Performance Dimension

The performance dimension in the EG framework relates to strategy and value creation (Connell, 2004; Lees, 2005, 2010), where assurance by means of standards and audit is not feasible (Bhimani and Soonawalla, 2005). Alternatively, companies can rely on best practice tools and techniques to address the oversight gap in the performance dimension (Connell, 2004; Lees, 2005, 2010). Unlike Connell (2004) and Lees (2005, 2010), who define the performance dimension in terms of strategy and strategic decision-making, this study operationally defines the performance dimension in terms of entrepreneurial activities (CE) necessary to increase the wealth of business (Zahra, 1996). CE is as important as strategic management and, arguably, they complement each other in creating wealth (Ireland et al., 2001, 2003). While strategic management focuses on developing sustainable competitive advantage (Ireland et al., 2003), CE focuses on the process that leads to venture creation (Cooper et al., 2000).

The importance of CE for the successful performance of a company has risen as a result of the increasing intensity of competition at both domestic and global levels, as it can help in acquisition of new capabilities, developing new venture streams and improving performance (Lumpkin and Dess, 1996; Rauch et al., 2009). Recently, CE has become a popular topic because of a wide range of reasons from economic (the growing awareness of the importance of business founding and innovation to economic growth and social welfare, especially in the increasingly growing markets such as China, India and Latin America), symbolic (public charm of independent entrepreneurs) and financial to careerist (Miller, 2011).

2.4.1 Corporate Entrepreneurship Definitions

The word "entrepreneurship" is derived from the French word õentreprendreö (Collins Dictionary, 2010), which means to launch or undertake. The word is used now in English to entail õnew entryö or undertaking/launching a new project. The literature suggests many typologies to describe entrepreneurship from different perspectives, the differences between these typologies reflect a wide range of combinations of individual, organisational and environmental factors (Lumpkin and Dess, 1996).

However, the fundamental act of entrepreneurship is õnew entryö, which can be achieved through entering new or established markets with new or existing goods or services (Lumpkin and Dess, 1996). The new entry can take many forms, such as business start-ups, launching new products or technology, expansion to a new market and globalisation (Miller, 2011). Lumpkin and Dess (1996) distinguish between entrepreneurship and entrepreneurial orientation as õentrepreneurship basically relates to õnew entryö, while entrepreneurial orientation focuses on the process that leads to new entryö (Lumpkin and Dess, 1996: p.136). According to Miller (2011), the shift from focusing on what (entrepreneurship) to how (entrepreneurial orientation) is an important advance in entrepreneurship research.

Entrepreneurship has been linked to the behaviour of entrepreneurs (owner-managers) in creating new entry in small businesses. However, entrepreneurship and small business are not synonymous (Carland et al., 1984). As a result of the increasing importance of large companies in the economy, there is an increasing interest in entrepreneurial orientation in large companies (Zahra, 1996). The term CE is normally used to refer to entrepreneurship in established mature firms (Brunninge and Nordqvist, 2004).

CE can be defined as õthe process whereby an individual or a group of individuals, in association with an existing organisation, create a new organisation, or instigate renewal or innovation within that organisationö (Sharma and Chrisman, 1999: p.18). In another definition, CE is defined through focusing on its dimensions as õthe sum of a companyøs innovation, renewal and venturing efforts. Innovation involves creating and commercialising products and technologies, providing financial and human resources for innovative projects and maintaining an appropriate infrastructure for innovation. Renewal means revitalising a companyøs business through innovation and changing its competitive profile. Venturing requires creating and nurturing new business in current and new industriesö (Zahra, 1995: p. 227).

Exploring different definitions of CE reveals that it is characterised by the existence of innovation along with the objective of rejuvenating or redefining organisations, market, or industries in order to create or sustain competitive dominance (Covin and Miles, 1999). However, according to Antoncic and Hisrich (2004), different terms have been used to describe the construct of CE, such as entrepreneurial orientation

(EO), intrapreneurship, corporate venturing, innovative, entrepreneurial strategy and entrepreneurial posture.

2.4.2 Corporate Entrepreneurship Dimensions

CE is considered a multi-faceted construct and scholars have used many typologies to capture alternate dimensions of entrepreneurship (Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Short et al., 2010). Based on Miller's conceptualisation, three dimensions have been identified as being commonly used in the literature: innovativeness, risk taking and proactiveness. Innovativeness is the company tendency to engage in and to support creating new ideas through developing new products/services as well as technological leadership via R&D in new processes (Lumpkin and Dess, 1996; Rauch et al., 2009). Risk taking is the level to which managers accept to make large and risky resource commitments (Miller and Friesen, 1978). Proactiveness refers to 'seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle' (Venkatraman, 1989: p.949).

Further, Lumpkin and Dess (1996) suggest autonomy and competitive aggressiveness dimensions as additional components of the CE construct. Autonomy refers to the ability of taking action free of organisational constraints (Lumpkin and Dess, 1996; Lumpkin et al., 2009), while competitive aggressiveness reflects how companies react to the existing competitive trends and demands in the market (Lumpkin and Dess, 2001), proactiveness focuses on taking initiatives towards clients, competitive aggressiveness relates to behaviour in comparison with competitors (Lumpkin and Dess, 1996).

Although these efforts have contributed to capturing the various dimensions of CE, there is no consensus about what constitutes entrepreneurship. Such lack of consensus has encouraged research to build and test a broader theory of entrepreneurship, which makes it difficult to investigate the relationship between entrepreneurship and performance (Lumpkin and Dess, 1996).

2.4.3 Corporate Entrepreneurship and Performance

CE is an important practice for a company's survival, profitability, growth (Zahra, 1996; Zahra et al., 2009), and business success (Thornhill and Amit, 2001; Miles and

Covin, 2002; Antoncic and Prodan, 2008). Therefore, the main stream of research in CE scrutinises the performance implications of CE directly or under different environments and strategies (moderated by contextual and organisational factors) (Miller, 2011).

The literature suggests that CE is highly associated with superior performance (Rauch et al., 2009). For instance, Hult et al. (2003) investigate the role of entrepreneurship in establishing cultural competitiveness in organisations through examining the interaction effect of four variables (entrepreneurship, innovativeness, market orientation and organisational learning) on performance using an extended survey for 764 strategic business units in the US. The results suggest that entrepreneurship, among other variables, is the most significant and proactive means of developing a market-based culture.

In a different context, Avlonitisa and Salavoub (2007) examine the effect of variations in entrepreneurial orientation (measured by product innovativeness) in SMEs on performance. For a sample of 149 manufacturing companies in Greece, the study classifies companies into two groups using cluster analysis (active entrepreneurs and the passive entrepreneurs). The results suggest that active entrepreneurs outperform passive entrepreneurs in terms of introducing new products, and the uniqueness of these products significantly contribute to performance.

Some other studies in the literature find moderate association between CE and performance (Rauch et al., 2009). For instance, Zahra (1991) examines the association between CE and performance using data from 119 of the Fortune 500 industrial firms for the period 1986 to 1989. The results suggest moderate association between CE and company performance. One explanation for the moderate relationship is the fact that some CE ventures were still in their early years and it would take several years before they would give return.

Similarly, Lumpkin and Dess (2001) relate two dimensions of CE (proactiveness and competitive aggressiveness) to performance using a survey covering 124 executives from 94 companies in the US. The findings suggest that proactiveness is positively associated with performance, while competitive aggressiveness exhibits a poor association with performance. A further analysis reveals that the relationships between the two dimensions and firm performance are contingent on the external environment and business life cycle.

However, other studies fail to provide evidence on association between CE and performance (Rauch et al., 2009). For instance, Covin et al. (1994) investigate the moderating effect of strategic missions on the relationship between adopting entrepreneurial strategic postures (CE) and company performance through an extended survey, using questionnaires that cover 330 senior executives of manufacturing companies in the US. The initial results reveal that, in general, adopting entrepreneurial strategic postures is not significantly correlated to company performance. However, further analysis reveals that companies with build-oriented strategic missions outperform those with more hold- and harvest-oriented strategic missions when they adopt entrepreneurial strategic postures.

In summary, the significance of the relationship between CE and business success varies among studies (Rauch et al., 2009). While some studies conclude that companies that are highly entrepreneurial outperform companies that are less entrepreneurial (e.g. Hult et al., 2003; Avlonitis and Salavoub, 2007), other studies find lower correlation between CE and performance (e.g. Zahra, 1991; Lumpkin and Dess, 2001) or even no significant relationship at all between CE and performance (e.g. Covin et al., 1994). However, the results in general support the argument of having positive performance implications for CE (Rauch et al., 2009).

The results of previous studies suggest some variables moderate the relationship between CE and performance, such as environmental hostility (Zahra and Covin, 1995; Zahra and Garvis, 2000), strategic mission (Covin et al., 1994), strategy and structure (Covin and Slevin, 1991) and company size (Rauch et al., 2009). However, there is little agreement on what constitutes suitable moderators, the area which needs further research (Rauch et al., 2009). Further, other studies suggest that these variables can work as antecedents rather than being moderators in relating CE to performance (Zahra, 1991).

The results are generally consistent with the basic assumptions of contingency theory (Lumpkin and Dess, 1996; Rauch et al., 2009) and suggest four alternative models for the contingency relationship between CE and performance including moderating effects, mediating effects, independent effects and interaction effects (Lumpkin and Dess, 1996). Moreover, most of these studies have been conducted in the US and very few studies have been published using data from companies outside the US.

2.4.4 Corporate Entrepreneurship and Corporate Governance

There is growing interest in how CG and ownership structure can affect CE (Zahra, 1996). The relationship between CG and CE has become greatly controversial at the beginning of this century, as a result of the collapse of large companies in the US such as Enron and WorldCom, where the CEOs and boards of directors of these companies were more entrepreneurial and held less accountable (Taylor, 2003).
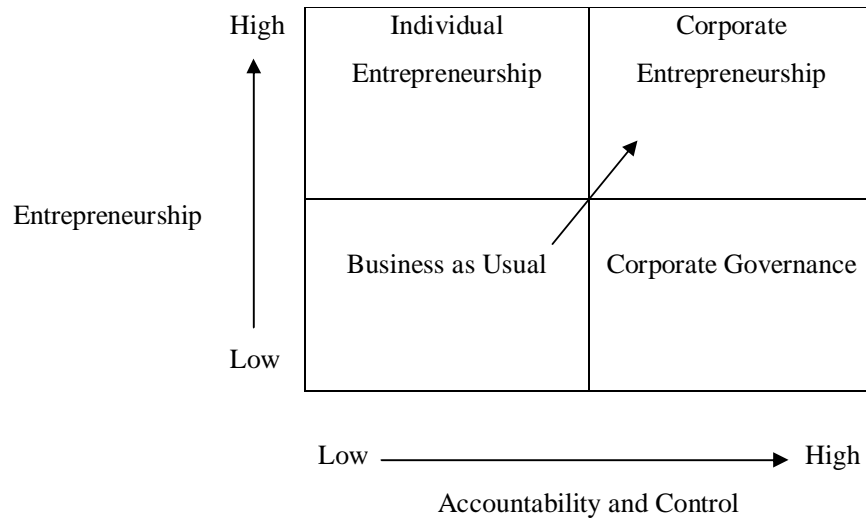
Figure 2.9: Board Leadership Approach

Source: Taylor (2003, p. 4)

Therefore, it has been argued that the effective board of directors should achieve a balance between entrepreneurship (strategy, corporate renewal and innovation) and CG (being accountable to shareholders and maintaining rigorous financial controls) (Taylor, 2003). According to Taylor (2003), the board leadership approach (see figure 2.9) is neither over-dependent on the charismatic leader (individual entrepreneurship), nor over-dependent on financial control at the expense of corporate development (CG). The preferred approach is a combination of entrepreneurship with accountability and control which takes the form of CE.

Alhough calls for studying the association of governance and ownership structure with entrepreneurial activity are not totally new (Porter, 1992), few studies have been conducted in this area investigating the impact on R&D (e.g. Daily and Dalton ,1992) and their results are contradictory (Zahra, 1996). The results of empirical studies

suggest that some CG mechanisms (e.g. non-executive directorsø representation in the board) have a negative impact on CE and other governance mechansims (long term institutional ownership) have a positive impact on corporate entrepreneurship.

For instance, Hitt et al. (1996) investigated the effect of the market for corporate control on internal and external innovation, for a sample of 776 companies engaged in mergers and acquisitions in the US, during the period 1985-1991. The results indicate that companies engaged in acquisitions and divestitures pay more attention to financial controls, less attention to strategic controls and, thus, produce less internal innovation. Furthermore, an active acquisition strategy negatively affects the internal development of firm innovation. This effect has been attributed to the transaction costs of acquisition-related activities that absorb managers' time and energy, which leave little time for managers to deal with other important projects and target firm managers, in particular, become strongly risk averse. Therefore, active engagement in the market for corporate control can be negative to an organisation's wellbeing in industries in which innovation is important.

In a survey covering top senior managers of 127 manufacturing companies on the 1998 Fortune list, Zahra (1996) found that CE is positively associated with executive stock ownership and long-term institutional ownership. On the other hand, CE is negatively associated with the proportion of non-executive directors on the board and short-term institutional ownership. However, stock ownership by non-executive directors, to some extent, mitigates the negative effect of their representation on the board.

The negative impact of non-executive directorsø representation on the board corresponds to the concerns raised towards the increasing trend of non-executive directorsø appointment as required by many CG codes. These concerns relate to the limited time or ability of non-executive directors to absorb the immense amount of information needed to understand a companyøs operations (Zahra, 1996). Moreover, the lack of ownership interest by non-executive directors in a company results in those directors being less inclined to monitor management performance or even encourage entrepreneurial activities (Zahra, 1996). Therefore, stock ownership by non-executive directors better aligns their interest with shareholdersø interests and provides them with more incentives to monitor management performance and to encourage entrepreneurial activites. In a similar study for medium-sized companies,

Zahra et al. (2000) conclude that, in general, commitment to CE is high when both executives and non executivesø stock ownership increases in their company, CEO and chairman posts are separated and board size is medium.

In summary, despite the fact that both CG and CE have the same objective of improving performance and creating value, the two constructs at the conceptual level seem to be contradictory and may be irreconcilable. CG emphasises control, monitoring management performance and ensuring accountability; on the other hand, CE focuses more on innovation and creating new opportunities, where entreprenurial activities require less control and restrictions on decision making.

However, few studies investigate the relatonship between CG and CE and their interaction effect on perfromance. The limited research in this area has been attributed to the fact that theories of CG did not systematically incorporate an analysis for the economics of innovation (O'Sullivan, 2000). Arguably, VBM can be considered an appropriate approach to address the tension between conformance (CG) and performance (CE) and to bring the two dimensions closer to achieve the objectives of EG. For instance, in a research project commissioned by CIMA about maximising shareholdersø value, Starovic et al. (2004) have addressed this issue, arguing that the value based management approach can play an important role in keeping the balance between the conformance and performance dimensions of EG, as follows:

õValue-based management thus places the interests of owners of companies back at the centre of decision-making. This in turn means those investors can rely on more than just the instruments of CG to protect them from the possible conflicts of interest arising from the split between ownership and management. In this way, managing for value has the potential to bring the two sides of the enterprise governance framework closer and join them in a more comprehensive approach to managementö (Starovic et al., 2004: p. 23). Nonetheless, the potential role of VBM in achieving the EG objectives has received little attention in the literature.

2.5 Value-Based Management

During the late 1980s and early 1990s the view of corporate success shifted its emphasis from achieving competitive advantage through outperforming competitors on technological capability and the acquisition of raw materials (Mills, 1994), towards a finance-influenced view in which shareholdersø interests are total or dominant

(Walters, 1997). Value based management (VBM) became popular in the mid-1980 when Rappaport published his seminal text, õcreating shareholder value: the new strand for business performanceö in 1986. Companies such as Boots, LIoyds TSB and Cadbury Schweppes were soon making explicit public commitments to increasing value for their shareholders (Starovic et al., 2004).

The focus on value creation was triggered by a more competitive environment, increased investor activism (Athanassakos, 2007), competitive labour markets for corporate executives (Rappaport, 1986), emergence of active markets for corporate control (Rappaport, 1986; Copeland et al., 2000), expansion of institutional investment and more liquid securities market (Young and OøByrne, 2001) and impressive endorsements by corporate leaders who have adopted the approach (Fahi et al., 2005). Further, the growing criticisms of the traditional accounting measures such as EPS and ROI for not being linked to shareholderøs value has motivated many companies to adopt the VBM approach (Fahi et al., 2005).

2.5.1 Value-Based Management Definitions

The basic concept of value can be tracked back to 19th century economic theory, which pioneered the idea of residual income. However, the term VBM and managing for shareholder value (MSV) were not commonly being used until authors such as McTaggart and Copeland in the mid-1990s (Starovic et al., 2004). Eventually, the International Federation of Accountants (IFAC 1998) considered VBM as the latest evolution stage in management accounting practices (MAPs), where attention has been focused on the creation of value through using techniques and technologies that identify the key drivers of customer value, shareholder value and organisational innovation (Ittner and Larcker, 2001).

VBM can be defined as õa formal, systematic approach to managing companies to achieve the objective of maximizing value creation and shareholder value overtimeö (McTaggart, 1994: p. 21). However, this definition basically focuses on the objective of VBM. In another definition that focuses on the alignment process, VBM õaligns strategies, polices, performance, measures, rewards, organisation, processes, people and systems to deliver increased shareholder valueö (Black et al., 1998: p.15). Similarly, it can also be defined as an approach to management whereby the company's overall aspiration, analytical techniques and management processes are all aligned to help the company maximise its value by focusing on the key drivers of

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value (Copeland et al., 2000). In a comprehensive definition, VBM is defined as õa managerial approach in which the primary purpose is long run shareholder wealth maximization. The objectives of the firm, its systems, strategy, processes, analytical techniques, performance measurements and culture have as their guiding objective shareholder wealth maximizationö (Arnold, 2008: p. 620).

In summary, from a strategic perspective, VBM as a holistic management approach aims to provide consistency of the corporate mission (business philosophy), strategy (course of actions to achieve the corporate mission), CG (determines the corporate mission and regulates the activities of corporation), organisation of the corporation, decision processes and systems, performance management processes and systems and reward processes and systems (Value Based Management, 2011).

Theoretically, VBM involves a shift away from the use of traditional accounting measures such as net profit and EPS which, arguably, offer an unreliable guide to shareholder value creation, to a number of alternative measures consistent with the principles of economic profit (Bromwich, 1998). These measures will be discussed in detail in the following section.

2.5.2 Measuring Shareholder Value

During the 1980s and 1990s growing concerns on traditional accounting measures have emerged, especially on the scope of subjectivity that most accounting standards allow (Starovic et al., 2004). Alternatively, a number of value-based measures or value-metrics based on the concept of shareholder value are proposed by a number of consultants, such as Rappaport (1986) and Stewart (1991). These measures have in common the basic premise that profit needs to be measured in a way that takes into account the cost of the capital employed to generate it (Bromwich, 1998; Starovic et al., 2004).

These measures include Shareholder Value Added (SVA), Economic Profit (EP) or Residual Income (RI), Economic Value Added (EVA), Cash Flow Return on Investment (CFROI) and Total Business Return (TBR) (Starovic et al., 2004).

2.5.2.1 Shareholder Value Added (SVA)

Rappaport (1986) developed SVA to estimate the value of the shareholdersø stake in a company and evaluate strategic decisions (Rappaport, 1986; Starovic et al., 2004).

SVA can be estimated through discounting the expected future operating free cash flows using a certain cost of capital, as follows:

SVA = (Present Value of Cash flow from Operations during the Forecast Period + Residual Value + Marketable Securities) - Debt

The most important problem with SVA is predicting the variables required to estimate it (Starovic et al., 2004). Therefore, it is not commonly used by companies and, arguably, is less popular than its founder (Copeland, 1994). For instance, an international survey by the European Institute of Business Administration (INSEAD) for VBM practices reported that only 8% of respondents used SVA (Boulos et al., 2001).

2.5.2.2   Economic Profit (EP) or Residual Income (RI)

According to Bromwich and Walker (1998), EP or RI has a long history at both the theory level (e.g. Solomons, 1965) and the practice level (e.g. GM co. since 1920s). EP is the excess of earnings (revenues) over expenses, including cost of capital. It can be calculated as annual accounting profits minus an interest charge on the book value of assets (cost of capital) (Bromwich and Walker, 1998):

EP = Accounting Profit after Tax ó Cost of Capital

EP can be used in measuring performance, evaluating businesses and strategic decsion making. However, one of the important problems with this approach is based on the accounting profit, which is based on traditional accounting conventions and rules (Starovic et al., 2004).

2.5.2.3   Economic Value Added (EVA)

EVA is the most popular variant of EP approaches, which was founded by Stern Stewart and Co. (Bromwich and Walker, 1998). In the INSEAD survey, more than 47% of the respondents claimed to use EVA as the EP measure (Boulos et al., 2001). Although EVA is a variant of EP, Stewart (1991) points that at least three problems threaten the calculation of EP, including the use of accruals-based bookkeeping; the bias resulting from applying the prudence concept and the understated capital as a result of using õsuccessful efforts accountingö (Stewart, 1991; Starovic et al., 2004).

To address the measurement problems in EP, Stewart (1991) suggests up to 164 adjustments to accounting profits and capital, on which EVA is already based (Stewart, 1991; Starovic et al., 2004). EVA can be calculated as follows:

EVA = Adjusted Operating Profits after Tax - (Adjusted Invested Capital * Weighted Average Cost of Capital)

Arguably, EVA grasps all the advantages of the EP approach and the argued improvements in accounting profit after being adjusted (Stewart, 1991; Starovic et al., 2004). However, it is rather complicated, time consuming in implementation and lacks the theoretical foundations of the suggested adjustments (Zimmerman, 1997; Starovic et al., 2004).

2.5.2.4   Cash Flow Return on Investment (CFROI)

CFROI was developed by HOLT Value Associates in collaboration with Boston Consulting Group (Ameels et al., 2002). According to the INSEAD survey, CFROI was very popular as 23% of the respondents argued to use CFROI as a measure of shareholder value creation (Boulos et al., 2001). CFROI can be considered a real measure of rate of return, as it relates the cash generated by a business to the cash invested (Starovic et al., 2004). CFROI is defined as the annual gross cash flow relative to the invested capital of a business unit (Ameels et al., 2002).

CFROI is calculated by converting the accounting profit into real cash flow and converting capital invested in the business into an inflation adjusted measure of investment in business and, finally, the annual cash performance to be converted into a measure of economic performance over the average life of companyøs assets using the principles of IRR to find the r value, which approximates the value of CFROI (Starovic et al., 2004) in the following equation (Ameels et al., 2002):

$$\text{Gross Operating Asset Investment} = \sum \overline{\qquad} + \frac{\overline{\qquad}}{(\quad)}$$

Where:
CF Gross cash flow
W Expected residual value of non depreciating assets

Arguably, CFROI is an accurate and advanced measure of economic performance as it is not misshapen by the effect of inflation and depreciation as other approaches,

such as EP and EVA. In addition, it incorporates the internal rate of return (IRR) concept used in evaluating capital investments and reflects the way in which the stock market judges a company performance (Starovic et al., 2004). However, calculating CFROI is rather complicated, time consuming and costly to implement (Starovic et al., 2004).

2.5.2.5 Total Business Return (TBR)

Total business return (TBR) is the internal equivalent of the external total shareholder return (TSR) measure, which considers capital gains and dividends received by shareholders (Starovic et al., 2004). TSR represents the change in capital value of a company over a one-year period, plus dividends, expressed as a plus or minus percentage of the opening value (Ameels et al., 2002).

$$\text{Total Shareholder Return} = [(P_{t+1} - P_t) + D_{t+1}] \div P_t$$

Where:

P   share price

D   paid dividends

t   beginning of the period

t+1   end of the year

According to the INSEAD survey, 7.4% of the respondent companies were using TSR (Boulos et al. 2001). It has been argued that TBR addresses the problems of short term performance measures such as EVA$^®$ and CFROI, as it incorporates the long-term effect of decisions taken in a particular period on the value of the business. This is because TBR combines both the cash flow performance of a business with the change in value that occurs during a certain period (Starovic et al., 2004).

However, using the TSR measure is not without problems, as it can only be calculated for companies that are quoted on the stock exchange. Moreover, it cannot be used to calculate shareholder return at business unit level or for specific product market combinations. In addition, because it is driven by many factors beyond the control of the firmøs executives, it is an inefficient measure in evaluating performance (Bannister and Jusuthasan, 1997; Ameels et al., 2002).

2.5.3 Value-Based Management Success

Theoretically, VBM implementation seems to be simple. However, VBM implementation is more complicated than many of its proponents have thought and requires a great deal of patience, effort and money (Haspeslagh et al., 2001). For instance, Slater and Olson (1996) argue that simply applying the tools of VBM does not guarantee an increased shareholder value. These tools focus on the financial management and actions at the level of top management, whereas value creation is the outcome of the actions of individuals and groups throughout the firm. Therefore, VBM, as a management approach, should engage, motivate and reward the people throughout the organisation who create shareholder value.

Similarly, Bannister and Jesuthasan (1997) point out that failure of some organisations that have been adopting VBM does not necessarily cast doubt to the approach itself. Rather, such failures may take place because these organisations are not ready to manage within a value-based context. Effective use of VBM generally entails striking changes in the way an organisation tackles everything, from budgeting to goal setting, to capital allocation, to performance management and even to compensation.

In the INSEAD survey of a large number of international companies, Boulos et al. (2001) suggest five key value-driven elements for VBM success, including an explicit commitment to value creation, education and intensive training of managers and employees in the shareholder value creation process, building ownership through rewarding managers and employees on corporate and/or business unit economic profit measures, empowering business units and broadening process reforms (Boulos et al., 2001).

In summary, to ensure its success, VBM should be implemented as a holistic management approach that adopts shareholder value creation as an overall objective, develops strategies, organisational design, action plans, value drivers and performance measures that are aligned with this objective (Ittner and Larcker, 2001). Finally, introducing primary changes to a company's culture might be the most difficult challenge for management (Boulos et al., 2001).

2.5.4 Value-Based Management and Performance

Proponents of VBM argue that VBM mitigates the agency conflicts between managers and shareholders (Stewart, 1991; Lovata and Costigan 2002; Ryan and Trahan, 2007), aligns their interests (McLaren, 2005) and creates shareholder value (Crowther, 2003). However, VBM has been criticised because calculating value-based measures (e.g. EVA) is complicated; moreover, its implementation is not an easy process and it is costly (Lovata and Costigan, 2000; Haspeslagh et al., 2001).

VBM has been challenged with the growing and continuing debate on the importance of shareholder value relative to other measures such as employment, social responsibility and environment (Copeland et al., 2000). Accordingly, reconciling the competing claims of shareholders and other stakeholders has become crucial (Mills and Weisten, 2000).

In addition, it has been claimed that interest in VBM approaches has decreased as a result of the growing interest in society, environment and starting of a more socially responsible era of business, with different concerns to the maximisation of shareholder value. However, it is believed that it provides a good opportunity to study the phenomenon as a completed cycle (Cooper and Crowther, 2008). Management accounting research has been criticised as being more driven by changes in practice, resulting in the disappearance of some research topics, as the next ‑innovationø emerges, even though earlier innovations may have not been fully investigated (Ittner and Larcker, 2001).

The mixed results of empirical studies regarding the relationship between VBM and performance have contributed to make the debate about VBM unresolved. For instance, proponents of VBM argue that value-based measures (especially EVA) are more correlated to the share price than traditional accounting measures (e.g. EPS and ROI) and they are better used as predictors of stock return (Ittner and Larcker, 1998, 2001). However, the results of these studies are contradictory. For instance, Stewart (1991, 1994), Grant (1996), Lehn and Makhija (1997), Young and OøByrne (2001), Athanassakos (2007), Ryan and Trahan (2007) and Rapp et al. (2011) have supported the claims of superiority of value-based measures over traditional accounting measures in explaining stock returns.

Conversely, other studies such as Dodd and Chen (1996), Chen and Dodd (1997), Biddle et al. (1997) and Bao and Bao (1998) provide some evidence against value-

based measures in terms of its explanatory power of stock returns and information content. Despite the fact that VBM is not an entirely new approach, the debate concerning the superiority of value-based measures over traditional accounting measures in the literature has not been resolved (Ittner and Larcker, 2001).

Further, little attention has been paid in the VBM literature to the extent of preferring these measures for management planning; evaluating management performance and control purposes (Ittner and Larcker, 2001). Accordingly, there is no clear evidence whether the organisations that use value-based measures as internal performance measures for performance measurement and compensation purposes can outperform organisations that use PMSs based on other performance measures (Zimmerman, 1997; Ittner and Larcker, 2001; Francis and Minchington, 2002). The mixed results of these studies have been partially explained by deficiency in the implementation of VBM (Slater and Olson, 1996; Bannister and Jesuthasan, 1997; Armour and Mankins, 2001; Haspeslagh et al., 2001; Morisawa and Kurosaki, 2002).

However, the present study argues that, in addition to the implementation-related factors, contingency factors can play an important role in explaining such mixed results. This argument is supported with the results of previous studies, such as Anderson and Young (1999), which conclude that success or failure of sophisticated accounting techniques may not only be related to implantation-related factors, but also to more general contingent factors related to the organisation characteristics and its environment. Accordingly, the enhanced performance outcomes depend on how different types of PMSs best suit or fit with an organisation¢s specific context (Tillema, 2005; Chenhall 2006). Accordingly, some recent studies in VBM literature such as Athanassakos (2007), Cooper and Crowther (2008) and Lueg and Shaffer; (2010) suggest that using the contingency theory approach towards studying VBM can help to explain the mixed results. Therefore, this study opted for the contingency theory approach in addressing the research problem to respond to a call by Ittner and Larcker (1998) to identify the contingency factors that explain the cross-sectional differences in the predictive ability of value-based measures.

2.6 Gaps in the Literature

This chapter has examinedthe EG framework from a UK context, based largely on the review of literature in EG, CG, CE and VBM. The review of literature identifies a

number of gaps and reveals directions for further research. These gaps are explained as follows:

Reviewing studies that have addressed the EG framework reveals that there is some ambiguity regarding the relationship between the conformance and performance dimensions of EG. While these studies admit the conflicting nature of the conformance and performance dimensions of EG, the exact relationship (conflicting/complementary) between the two dimensions is not clear and lacks empirical evidence, especially in the UK. This raises an important question regarding the potential trade-off or tension between conformance and performance. Furthermore, little is known about best practices and approaches to keep the balance between conformance and performance, which raises another question regarding the effectiveness of some of the proposed approaches (e.g. VBM) in achieving the objectives of EG.

Therefore, more research is needed in this area to operationalise the EG dimensions, especially the performance dimension, into measurable constructs, so that the relationship between the two dimensions can be explored. In addition, the best practices proposed (e.g. VBM) to achieve the objectives of EG need to be empirically assessed in terms of the balance between conformance and performance.

Review of the CG (conformance) literature reveals that it is dominated by studies that examine the effect of compliance with a single or small subset of CG mechanisms on performance, especially in the US, rather than examining the overall effect of all CG mechanisms. These studies ignore the complementary relationships between differnt CG mechanisms. In addition, the literature emphasises the effect of these mechanisms on performance, with less attention to its effect on CE. Therefore, more studies are needed, especially in the UK, to examine the overall effect of compliance with the CCCG on both CE and performance.

Reviewing the CE literature reveals that there is little agreement on defining CE and identifying which dimensions shape this construct, the area which needs further research. In addition, the mixed results regarding the relationship between CE and performance, which largely depend on some other contingency factors, suggest that using the contingency theory perspective can contribute to reconciling these mixed results. Further, the literature review of VBM suggests that it can be considered one of the best practices that has the potential to achieve the objectives of EG. However, the

mixed results regarding the relationship between VBM and performance, in addition to some clues about possible effects of some contextual factors on this relationship, suggest that using the contingency theory perspective can contribute to explaining these mixed results.

2.7 Summary

This chapter presented the EG frameworks with reflection on the UK. In this respect, the conformance and performance dimensions were identified as main dimensions for EG. An examination of the development of CG and CE was presented subsequently in operationalising the conformance and performance dimensions. In order to examine the EG framework, the VBM approach was proposed to achieve balance between conformance and performance in the UK.

Reviewing the literature reveals some gaps and a number of theoretical perspectives that can be used to address the research problem such as agency theory, which dominates the CG discipline. In addition, contingency theory can be used to reconcile the mixed results regarding the effect of VBM, CG, CE and performance. Therefore, the two theoretical perspectives will be used in this study as a foundation for the theoretical model.

Chapter 3

Theoretical Framework

3.1 Introduction

This chapter aims to develop a theoretical framework of EG that integrates the agency and contingency theories perspectives. The review of the literature in the previous chapter reveals that an agency theory can contribute to developing a better understanding of the mechanisms that mitigate agency conflicts between owners and managers, and using the contingency theory, as a lens to address the EG issue, can contribute to developing a better understanding of the relationship between conformance and performance, thus reconciling the mixed results in CG, CE and VBM studies.

This chapter is divided into six sections. The second section will discuss the main concepts and assumptions of agency theory including its contribution to management accounting, CG and CE research. In addition, it discusses the common themes and differences between agency theory and contingency theory. The third section will discuss the main concepts and assumptions of contingency theory, including its contribution to management accounting, CG and CE research. The fourth section will present the theoretical model developed in this study, operationalising the conformance and performance dimensions of EG, VBM and the contingency factors. The fifth section will discuss the development of the study's hypotheses based on the expected relationships between the model constructs as indicated in the theoretical model. The final section will present a summary of the chapter.

3.2 Agency Theory

Although agency theory was rooted in economics and finance disciplines (Lan and Heracleous, 2010), it has been used by scholars in many other disciplines including accounting, marketing, political science, organisational behaviour and sociology (Eisenhardt, 1989). The blueprint of the theory was in the early work of Berle and Means (1932) on the separation of ownership and management. However, it is also credited to the seminal work of Jensen and Meckling (1976), Fama (1980) and Fama

and Jensen (1983a), who have contributed to the development of the theory. Eventually, it has become a dominant theoretical perspective in a number of disciplines, such as CG (Shleifer and Vishny, 1997; Lan and Heracleous, 2010) and accounting research (Lambert, 2007).

Two streams of agency theory have been developed in the literature, namely positivist and principal-agent (Eisenhardt, 1989). While the two streams share some common characteristics, such as the unit of analysis and assumptions related to information, people and organisation, they differ in mathematical rigour and style (Eisenhardt, 1989). The positivist stream of agency theory is less mathematical than the principal-agent model and exclusively focuses on the agency relationship between owners and managers in public corporations (Eisenhardt, 1989). The principal-agent stream entails vigilant assumptions that are followed by logical deduction and mathematical proof. Therefore, it is more abstract and can be applied to any agency relationship (e.g. employer-employee) (Eisenhardt, 1989).

The positivist agency stream mainly focuses on identifying the governance mechanisms that contribute to solving the agency problem. The principal-agent stream is mainly concerned with identifying the most efficient contract for agency relationships. However, the two streams can complement each other. While the positivist agency stream identifies a variety of contract alternatives, the principal-agent stream points out which one is the most efficient, assuming different levels of uncertainty, risk aversion and information (Eisenhardt, 1989). The present study uses the positivist agency theory in developing the theoretical framework, as it is more appropriate to the research problem, which addresses the EG issue at a corporate level. The principal-agent model is less relevant to this study as it is more abstract and less accessible to organisational theory research (Eisenhardt, 1989).

3.2.1 The Agency Problem

Agency theory addresses the problem that arises from separation of ownership and control in which one party (principal) delegates work to another (agent), who performs that work (Jensen and Mcling, 1976; Eisenhardt, 1989). The agency problem arises from the conflict of interest between principal and agent, given the difficulty of verifying what the agent is doing by the principal (Eisenhardt, 1989). Different interests and goals may cause other problems such as, moral hazard, and adverse selection problems (Jensen and Mcling, 1976; Eisenhardt, 1989). Additionally, the

difficult and expensive monitoring of the agent causes risk-sharing problems (Eisenhardt, 1989).

Moral hazard denotes a situation where an opportunistic agent may take sub-optimal decisions because of an imperfect contract between the agent and the principal. Adverse selection denotes the problem of hiring agents who do not have the necessary skills to deliver expected returns because of an imperfect contract or information asymmetry between the agent and the principal (Gomez-Mejia and Wiseman, 2007). Risk-sharing problems happen when the principal and the agent have different attitudes towards risk, which makes them prefer different actions (Eisenhardt, 1989).

Table 3.1: Agency Theory Overview

Key Idea	Principal-agent relationships should reflect efficient organisation of information and risk-bearing costs
Unit of Analysis	Contract between principal and agent
Human Assumptions	Self-interest
	Bounded rationality
	Risk aversion
Organisational Assumptions	Partial goal conflict among participants
	Efficiency as an effectiveness criterion
	Information asymmetry between principal and agent
	Information as a purchasable commodity
Information Assumption	Information as a purchasable commodity
Contracting Problems	Agency (moral hazard and adverse selection)
	Risk sharing
Problem Domain	Relationships in which principal and agent have partly differing goals and risk preferences (e.g. compensation, regulation, leadership, impression management, whistle-blowing, vertical integration, transfer pricing)

Source: Eisenhardt (1989, p. 59)

Agency theory assumes that the agency problem can be resolved through identifying the most efficient contract that administrates the agency relationship between the principal and the agent, given some assumptions (see table 3.1) about people, organisations and information (Eisenhardt, 1989). Agency costs should be incurred to resolve the agency problem and minimise divergence in the interests of the principal

and agent (Jensen and Meckling, 1976). Agency costs are the sum of monitoring costs (observing and measuring the agentøs behaviour costs), bonding costs (costs incurred by the agent to adhere to contract terms and residual loss (reduction in the principaløs benefit due to divergence in interests) (Jensen and Meckling, 1976).

3.2.2 Agency Theory in Management Accounting

õAgency theory has been one of the most important theoretical paradigms in accounting during the last 25 yearsö (Lambert, 2007: p.247). The basic attribute of agency theory that has made it appealing to accounting researchers is that it permits the explicit incorporation of conflicts of interest, incentive problems and mechanisms of controlling incentive problems into accounting models (Lambert, 2007). This is important because much of the motivation for accounting has to do with the control of incentive problems.

Management accounting is concerned with measuring and providing information that can help to evaluate past decisions and to improve future decisions, such as compensation and incentives decisions. Information can be provided in different ways, such as performance measurement (including both financial and non-financial measures) (Lambert, 2007). Agency theory has been used in management accounting research to answer two main questions: õhow do characteristics of information and compensation systems affect incentive problems and how does the existence of incentive problems affect the design and structure of information and compensation systems?ö (Lambert, 2007: p. 247).

Agency theorists (e.g. Hart, 1995) argue that the agency contract between shareholders and managers is likely to be incomplete due to the cost of thinking and planning all the different eventualities, cost of negotiation and cost of writing down the contract. One solution to this problem is to grant managers a contingent long term incentive contract ex-ante, to align their interests with those of shareholders. This contract can take the form of shared ownership and stock options (Jensen and Meekling, 1976; Fama, 1980; Eisenhardt, 1989). Therefore, in the VBM literature, a number of studies (e.g. Dodd and Chen, 1996; Chen and Dodd, 1997; Biddle et al., 1997; Ryan and Trahan, 2007) examine the effect of linking value-based measures to the incentive and compensation system on minimising agency costs and maximising stock returns.

3.2.3 Agency Theory in Corporate Governance

Agency theory has become dominant in the CG discipline, not only because of its impact on the literature, but also on the policy and practice level (Shleifer and Vishny, 1997; Lan and Heracleous, 2010). For instance, CG codes of best practice, director training and composition of corporate boards have been affected by the agency theory doctrine (Lan and Heracleous, 2010).

A number of governance mechanisms have been proposed to align the managers and shareholdersø interests and resolve the agency problem. According to Eisenhardt (1989), two governance mechanisms can be used effectively to control management opportunism. The first mechanism is the use of outcome-based contracts, as rewards for both managers and shareholders will depend on the same actions; therefore, conflict of interests can be minimised. The second mechanism is the use of information systems that inform shareholders about management actions, so that the information asymmetry can be reduced and management opportunism is minimised.

However, agency theorists argue that õthe governance mechanisms are designed to ensure agent-principal interest alignment, protect shareholder interests and thus minimise agency costsö (Davis et al., 1997: p.23). Therefore, agency theory provides a basis for the governance of firms through various CG mechanisms (Weir et al., 2002). These mechanisms in general and the board of directors in particular play an important role in monitoring managers and mitigating agency conflicts (Fama and Jensen, 1983a).

CG mechanisms can be classified into internal and external mechanisms. Internal mechanisms include management ownership (Jensen and Meckling, 1976), independent board of directors that mainly consist of non-executive directors, board committees and the separation of CEO and chair positions to ensure the effectiveness of the board oversight role (Dalton et al., 1998; Daily et al., 2003). External mechanisms include competitive labour market (Fama, 1980) and market for corporate control (Kosnik, 1987). The literature suggests that CG mechanisms reduce agency costs and contribute to resolving the agency problem (Dey, 2008; McKnight and Weir, 2009).

3.2.4 Agency Theory in Corporate Entrepreneurship

As discussed earlier, agency problem can result in agents acting differently, because they have different risk preferences or they tend to act opportunistically. Both opportunism (moral hazard) and risk preferences are problems only under uncertain environments. The agency problem becomes clearer in the entrepreneurship context as entrepreneurial behaviour, in its simple form, is the action in the context of uncertainty, which makes it impossible or prohibitively expensive to assess the effectiveness of an agent's behaviour (Jones and Butler, 1992).

Agency theory assumes that agents are risk averse as they have to bear the uncertainty of entrepreneurial activities and are only rewarded on undertaking risks on the basis of salary, while the principal is the residual claimant of profits (Jones and Butler, 1992). Given this reward scheme, agents will have no incentive to behave entrepreneurially or to undertake highly uncertain entrepreneurial projects, but instead low risk projects will be preferred (Jones and Butler, 1992). While risk aversion encourages managers to select less risky projects that provide normal rate of return, opportunism encourages managers not to undertake their responsibilities putting below normal effort that does not result in even normal returns.

Therefore, "if agents are not rewarded for the entrepreneurial efforts in the form of profits rather than salary, they will have less incentive to perform entrepreneurially and will have positive incentive to shrink, reduce their performance and pursue their interests" (Jones and Butler, 1992: p. 738). In other words, the main problem is applying the incentive scheme for entrepreneurial agents to act as principals or more generally, for managers to act as entrepreneurs (Jones and Butler, 1992).

To solve the agency problem firms must first identify the organisational factors that promote the agency problem (e.g. organisational size, age and complexity) and try to address these problems through designing the entrepreneurial context that align the interests of principals and agents. Innovations in organisational structure and organisational control and reward systems can help to solve the agency problem (Jones and Butler, 1992). For instance, moving from the functional structure to a product structure or multidivisional structure can reduce agency problems resulting from the increased size and complexity of a firm.

3.2.5 Agency Theory and Contingency Theory

This study gains insights from the agency theory and contingency theory to develop a theoretical model of EG. Most empirical studies have endeavoured to understand CG using the agency theory lens and investigate links between CG mechanisms and firm performance (Aguilera et al., 2008). These studies assume that by managing the agency problem between shareholders and managers through CG mechanisms firms will operate more efficiently and perform better (Aguilera et al., 2008).

However, the agency theory perspective has been criticised for its under-contextual nature and the closed system assumption of the firm, which conjectures a universal set of relationships between CG mechanisms and performance, paying little attention to the contexts in which firms operate (Aguilera et al., 2008). These critiques threaten the ability of agency theory to accurately compare and explain CG mechanisms across different institutional contexts (Aguilera and Jackson, 2003; Aguilera et al., 2008).

By contrast, contingency theory advocates an open systems perspective and rejects the view of universal best practices (Donaldson, 2001). This view suggests that various CG mechanisms may be more or less effective in different organisational environments (Scott, 2003; Aguilera et al., 2008). It also suggests that a one-size-fits-all approach is inappropriate; instead, effective policies should take into consideration the possible range of governance mechanisms dealing with important contingencies (Aguilera et al., 2008).

Contingency theory can be used to examine the effect of fit between CG mechanisms and contingencies such as task uncertainty, task interdependence or task size on organisational effectiveness (Donaldson, 2001; Aguilera et al., 2008). õAlthough CG might be considered a structural characteristic within this framework, contingency theory as it relates to the effectiveness of corporate governance has not been fully examinedö (Aguilera et al., 2008: p.481).

Although agency theory seems to be different from organisational theory, it has several links to mainstream organisation perspectives (Eisenhardt, 1989). Further, agency theory shares some common characteristics and assumptions (see table 3.2) with the information processing approach to contingency theory (Eisenhardt, 1989).

However, the main difference between the two theories is their focus. While contingency theory focuses on identifying the best structuring of reporting

relationships and decision making responsibilities, agency theory focuses on identifying the best structuring of control relationships resulting from these reporting and decision making patterns (Eisenhardt, 1989). For instance, contingency theory can be used to identify whether a firm is organised in a divisional or matrix structure, whereas agency theory can be used to identify how managers within the chosen structure are compensated by performance incentives (Eisenhardt, 1989).

Therefore, integrating agency theory and contingency theory has the potential to address the criticism levelled at agency theory, due to not considering the context in which the principal and the agent contracts. Future contingency-based studies can be advanced by integrating insights from alternate theoretical perspectives, such as agency theory, into organisational adaptation and functioning (Chenhall, 2007).

Table 3.2: Comparison of Contingency Theory and Agency Theory Assumptions

Assumptions	Contingency Theory	Agency Theory
Self-interest		X
Goal Conflict		X
Bounded Rationality	X	X
Information Asymmetry	X	X
Predominance of Efficiency	X	X
Risk Aversion		X
Information as Commodity		X

Source: Eisenhardt (1989, p. 63)

3.3 Contingency Theory

The contingency theory of organisations is an important theoretical lens used to view organisations as it gives many insights and has significant empirical support (Donaldson, 2001). Contingency theory was developed in the early 1960s from the seminal work by Burns and Stalker (1961) and Woodward (1965), and posits that the effectiveness of an organisational structure depends on a number of contextual variables (Otley, 1980). Eventually, contingency theory was introduced in the accounting literature by the mid-1970s (Otley, 1980) since the early work of Watson (1975) and Waterhouse and Tiessen (1978).

Most of the contingency theory research in accounting has studied organisational structure (Donaldson, 2001), which is known as structural contingency theory (Pfeffer, 1982). The core of the structural contingency theory paradigm is that organisational effectiveness (organisational performance) results from fitting characteristics of the organisation (e.g. structure) to contingencies that reflect the situation of the organisation (Donaldson, 2001). In other words, organisational performance depends on the degree of matching (fit) between the structure of the organisation and the existing contingencies (Ezzamel and Hart, 1987).

The literature suggests that environment, organisational size and organisational strategy, technology are important contingencies (Otley, 1980; Donaldson, 2001). According to contingency theory, organisations are seeking to fit their organisational characteristics (e.g. structure) to contingencies to achieve high performance and to avoid any losses resulting from the misfit when contingencies change (Donaldson, 2001). Therefore, organisations are seen to be shaped by the contingencies as they need to fit them to avoid loss of performance through adapting over time to the changing contingencies to maintain effectiveness (Donaldson, 2001).

3.3.1 Key Terms and Concepts in Contingency Theory

The continuous stream of contingency-based studies indicates the importance and strength of this research area (Gerdina and Greveb, 2004). Although there has been a rapid rise and wide acceptance of contingency theory (Otley, 1980), the results of empirical studies are conflicting and fragmented (Tosi and Slocum, 1984) and the state of the art of this research area is not very clear (Gerdina and Greveb, 2004).

The literature suggests some causes for the problem of the fragmentary and contradictory results, such as using different definitions of variables (unclear concepts), inadequate data, under-specified models (under-specified relationships between concepts) and the different ways of applying the concept of fit (Otley, 1980; Tosi and Slocum, 1984; Langfield-Smith, 1997; Gerdina and Greveb, 2004). In addition, there is no structural contingency theory of organisations, instead a loose group of unrelated theories exists, each of which makes a connection between its contingency and some aspects of organisational structure (Donaldson, 2001).

One way to overcome the problems of the confusing results in the contingency research is to understand the key issues and concepts of contingency theory (Tosi and

Slocum, 1984) such as the concepts of fit (Drazin and Van de Ven, 1985; Gerdina and Greveb, 2004) and organisational effectiveness (Tosi and Slocum, 1984).

3.3.1.1 The Concept of Fit

The fit concept is at the heart of contingency theory; contingency theorists endeavour to identify what constitutes fit and how fit affects performance (Donaldson, 2001). Therefore, the definition of fit is vital to the theory development, data collection and statistical analysis of propositions (Drazin and Van de Ven, 1985).

In an attempt to illuminate a good deal of the confusion in the contingency theory literature, Drazin and Van de Ven (1985) distinguish between three different approaches to the fit: selection, interaction and systems. Similarly, Gerdina and Greveb (2004) distinguish between cartesian vs configuration approaches, congruence vs contingency approaches and moderation vs mediation forms).

3.3.1.1.1 The Selection Approach

The selection approach simply hypothesises that organisational context (e.g. environment, technology) is related to structure (e.g. centralisation, formalisation) without testing the effect of the context-structure relationship on performance (Drazin and Van de Ven, 1985). The association between organisational context and structure, without any link to organisational performance, can be described as congruence (Donaldson, 2001; Gerdina and Greveb, 2004).

Natural selection and managerial selection perspectives have been used to justify viewing fit as congruence of organisational context and structure (Drazin and Van de Ven, 1985). Natural selection assumes that organisations need to adapt to the context through selecting the appropriate structure in order to survive; fit is the result of the adaptation process that ensures that only the best performing organisations survive.

However, the natural selection perspective has been criticised as a misfit between context and structure, which can lead only to underperformance, rather than bankruptcy (Donaldson, 2001). Therefore, for some organisations, the correlation between organisational context and structure can be caused by managerial selection (Drazin and Van de Ven, 1985) or managerial decisions (Donaldson, 2001), rather than natural selection.

Although the selection approach is a simple approach and many early studies examined the association between organisational context and structure, this approach has been criticised for the non-existence of performance construct in the congruence models (Drazin and Van de Ven, 1985) and the inaccurate assumption of survival of the fittest (Gerdina and Greveb, 2004).

3.3.1.1.2 The Interaction Approach

The interaction approach is a second approach for defining fit concept (Pennings, 1987). According to this approach, fit can be viewed as interaction between contingency and structure to yield a high performance (Donaldson, 2001). Unlike the selection approach the interaction approach explains variations in organisational performance as a result of the interaction of structure and context, rather than just understanding the congruence between them (Drazin and Van de Ven, 1985). More specifically, fit between context and structure can be interpreted in a multiplicative term (multiplication of contingency variable by structure variable) or matching term (Schoonhoven, 1981).

Alhough the interaction approach is very commmon and widespread in the contingency theory literature, the results of empirical studies are mixed with limited support for the interaction hypothesis (Drazin and Van de Ven, 1985). In addition, this approach only examines the interaction between one single contextual variable and one single structural variable and the effect of this interaction on performance (Drazin and Van de Ven, 1985) and does not take into consideration the interaction between multiple contingencies and structures simultaneously (Donaldson, 2001).

3.3.1.1.3 The Systems Approach

õUnlike the selection and interaction approaches to fit, the systems approach consists of several novel alternative methods characterising the patterns of interdependencies present in organisations (Drazin and Van de Ven, 1985: p.519)ö. One of the overriding characteristics of this approach is using multivariate analysis to study patterns of consistency among contextual, structural variables and performance (Miller, 1981).

The systems approach assumes that to maintain a high level of organisational effectiveness, an organisation should not only select the appropriate pattern of organisational structure and process that matches the array of confronting contingencies, but also build up structures and processes that are internally consistent

(Drazin and Van de Ven, 1985). The main issue with the systems approach in organisations that face multiple and sometimes conflicting contingencies is whether these organisations should adopt organisation structures and processes that match these contingencies and whether internal consistency exists between the selected structures and processes that correspond to the conflicting contingencies (Drazin and Van de Ven, 1985). Another important issue with the systems approach is how multiple fits among contingencies and structures affect organisational performance (Drazin and Van de Ven, 1985).

In summary, Drazin and Van de Ven (1985) argue that the three forms of fit (selection, interaction and systems) are not mutually exclusive and more than one form of fit can be examined in one study to get a better understanding for the competing approaches and theory development.

3.3.1.2 Cartesian VS Configuration Approach

The main difference between the Cartesian and configuration forms of fit is that the Cartesian approach is characterised by reductionism, while the configuration approach is characterised by the holistic view (Gerdina and Greveb, 2004). The Cartesisan approach is similar to the interaction approach suggested by Drazin and Van de Ven (1985) as it focuses on the interaction effect between a single contingency and a single structure on performance. The configuration approach is similar to the systems approach suggested by Drazin and Van de Ven (1985), as it examines the multiple relationships between contingencies and structures simultaneously. A summary of differences between Cartesian and configuration approaches is illustrated in table 3.3.

Table 3.3: Cartesian Approach and Configuration Approach

	Cartesian Approach	Configuration Approach
Variables	Few	Many
Relations	Continuous and General across Contexts	System States and Context-Specific
Change	Continuous and Incremental	Episodic and Quantum Jumps

Source: Gerdina and Greveb (2004, p. 305)

3.3.1.3 Congruence VS Contingency Approach

Congruence is similar to the selection approach suggested by Drazin and Van de Ven (1985), as it assumes that structure is shaped by context and there is no need to investigate the effect of association between contingency and structural variables, as long as only high performing organisations survive (Gerdina and Greveb, 2004). Conversely, the contingency approach examines the effect of association between context and structure on performance and assumes that both high performing and less performaing organisations survive and exist as a result of more or less succesful combination between context and structure (Gerdina and Greveb, 2004).

3.3.1.4 Mediation VS Moderation Forms

In the Cartesian approach for contingency, the relationships between different variables can be presented in models using different forms; the most common forms are moderation and mediation (Gerdina and Greveb, 2004). The moderation form (see figure 3.3a) assumes that õthe impact of an independent variable on the dependent variable is contingent on the level of third variable, the so-called moderatorö (Gerdina and Greveb, 2004: p.309).

The mediation form (see figure 3.3b) assumes that beside the direct effect an independent variable has on the dependent variable, the independent variable indirectly affects the dependent variable through its effect on a third variable (the mediator) which, in turn, affects the dependent variable. However, the two forms of models õrepresent two different theoretical forms of fit. Both models are valid, but in particular situations only one model can give the true pictureö (Gerdina and Greveb, 2004: p.310).
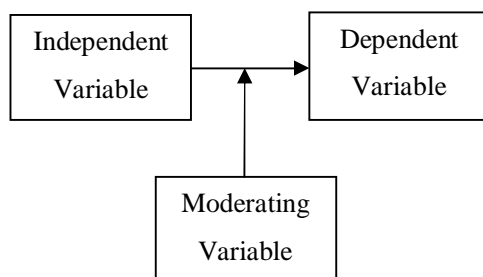
Figure 3.1a: Moderation Form   **Figure 3.1b: Mediation Form**
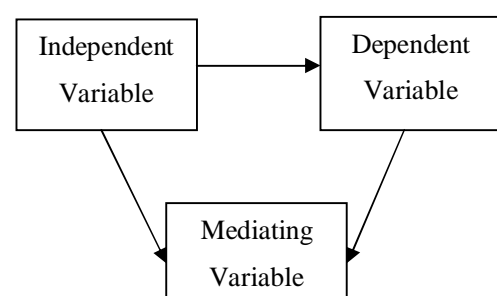
Source: Gerdina and Greveb (2004, p. 310)

3.3.1.5 Organisational Effectiveness (Performance)

Organisational effectiveness (performance) is a central concept in contingency theory. Contingency-based studies that have not investigated the effect on performance have been criticised for inconsistent results (Tosi and Slocum, 1984; Pennings, 1992).

There has been a sizeable debate in organisational studies about the definition of organisational effectiveness (performance) (Donaldson, 2001). Effectiveness or performance can be defined in different ways from different perspectives. For instance, it can be defined as the degree of achieving the organisation goals (Price, 1972), or the degree of getting hold of extremely desirable outcomes (Tosi and Slocum, 1984), or the ability to acquire critical resources for goals attainment (Mohr, 1973). Performance definitions vary from narrow perspectives focusing on profitability (Tosi and Slocum, 1984) to wide perspectives that consider the goals of different stakeholders (Pfeffer and Salancik, 1978).

However, performance is a multi-dimensional construct and multiple measures are needed to capture the different dimensions of this construct (Tosi and Slocum, 1984; Donaldson, 2001). For instance, Tosi and Slocum (1984) argue that at least three measures should be used to capture the different dimensions of effectiveness construct in the contingency research. These measures include efficiency (the way resources are used to yield a unit of output), outcomes as recognised by employees (job satisfaction, quality of work environments) and socially responsible outcomes (being a good citizen).

In summary, assessing organisational effectiveness is crucial to contingency-based studies. Organisational effectiveness is a multidimensional construct and it is not an easy task to define or operationalise it as it can be viewed from different perspectives. Therefore, it is important to explicitly identify from which perspective organisational effectiveness is assessed to avoid misunderstanding and vagueness about the meaning of effectiveness (Cameron and Whetten, 1983).

3.3.2 Contingency Theory in Management Accounting

Contingency theory has been an important approach to the study of organisations and the role of management accounting within organisations (Chenhall, 2003, 2007). Contingency theory has become a dominant paradigm in empirical management accounting research (Otley, 1980; Fisher, 1995; Cadez and Guilding, 2008) despite the criticisms of inconsistencies in the findings (Chenhall, 2003, 2007; Abdel-Kader

and Luther, 2008) and the wide range of definitions of variables and underspecified models used in these studies (Otley, 1980; Fisher 1995; Langfield-Smith, 1997; Gredin and Greve, 2004).

The contingency approach in management accounting is based on the notion that there is no universally appropriate accounting system that is applicable to all organisations (Emmanuel et al., 1990). Alternatively, the characteristics of the appropriate accounting system depend on the context and the circumstances in which an organisation operates. In turn, the effectiveness of the design of this system also depends on its ability to adapt to changes in contextual factors (Haldma and Laats, 2002; Abdel-Kader and Luther, 2008).

Contingency-based research has focused on a variety of aspects of Management Control Systems (MCSs) and Management Accounting Practices (MAPs). These include practices such as Activity-based Costing (ABC), Activity-based Management (ABM) (Anderson and Young, 1999; Gosselin, 1997), non-financial performance measures (Ittner and Larcker, 1998), balanced scorecard (Davis and Albright, 2004; Hoque and James, 2000) and variance analysis (Emsley, 2000).

However, research concerning the advantages of value-based measures is limited and the results are equivocal (Ittner and Larcker, 1998; Chenhall, 2006). Besides, there is no clear evidence if organisations that use value-based measures, as internal performance measures for performance measurement and compensation purposes, can outperform organisations that use PMSs based on other performance measures (Zimmerman, 1997; Ittner and Larcker, 2001; Francis and Minchington, 2002).

The mixed results of previous studies have been partially explained by a deficiency in the implementation of VBM (Slater and Olson, 1996; Bannister and Jesuthasan, 1997; Armour and Mankins, 2001; Haspeslagh et al., 2001; Morisawa and Kurosaki, 2002). However, the lack of evidence on the superiority of value-based measures and the mixed results raise some important questions. For instance, do value-based measures best suit different contextual settings? Is contingency theory an appropriate perspective to address this issue? (Chenhall, 2006).

The use of contingency theory in management accounting has been justified as a means of interpreting the results of empirical research (Otley, 1980). This study

argues that contingency factors can play an important role in explaining such mixed results. This argument is supported with the results of previous studies (e.g. Anderson and Young, 1999), which conclude that success or failure of sophisticated accounting techniques may not only be related to implementation-related factors (e.g. top management support and training employees), but also to more general contingent factors related to the organisation characteristics and its environment. Accordingly, the enhanced performance outcomes depend on how different types of PMSs best suit or fit with an organisationøs specific context (Tillema, 2005, Chenhall, 2006).

This argument has been supported by a call from many scholars (e.g. Ittner and Larcker 1998; Chenhall 2006; Lueg and Shaffer 2010) to develop a contingency framework to explain the mixed results of VBM studies. For instance, Ittner and Larcker (1998), contend that õResearchers can attempt to determine the factors explaining cross-sectional differences in the predictive ability of alternative economic value measures. Structural and environmental variables such as: firm strategy, competitive environment and product life cycle are likely important determinants of the relative explanatory power of different economic value measuresö (Ittner and Larcker, 1998, p.214).

Similarly, Chenhall (2006) contends that existing research into the effects of contingencies on performance measures, in general, is limited. More specifically, there is little direct evidence on contingency effects related to economic value measures. However, there are sufficient clues to suggest that the external environment, strategy, technology, structure and size are likely to be important when considering the suitability of different performance measures.

3.3.3 Contingency Theory in Corporate Governance

Most studies in the CG literature are dominated by agency theory to address the relationship between CG mechanisms and performance (Aguilera et al., 2008). However, the mixed results of empirical studies in the field of CG cast doubt on the notion of a direct and universal link between CG mechanisms and performance (Aguilera et al., 2008).

The inconsistency and ambiguity in the findings of CG studies can be explained by the fact that governance-performance relationship seems to vary with respect to organisational contexts (Aguilera et al., 2008). The results of some empirical studies support this argument, for instance Dey (2008) concludes that the governance

structures vary across companies, as a result of variation in the level of agency conflicts and higher levels of agency conflicts give rise to stronger CG structures.

The literature also emphasises CGøs role and structure change over the company life cycle (Filatotchev and Wright, 2005). Some CG mechanisms demonstrate opposite effects in different countries or even in the same country, from one period to another (Aguilera et al., 2008). Therefore, using the contingency theory perspective to address the governance-performance relationship can contribute to developing a better understanding of this relationship and answer some unanswered questions in the governance literature.

3.3.4 Contingency Theory in Corporate Entrepreneurship

Contingency theory suggests that fit among key variables such as environment, strategy and structure is crucial for obtaining optimal performance (Miller, 1988).The literature suggests that the relationship between CE and performance is contingent upon external environment factors such as dynamism (Lumpkin and Dess, 1996; Dess et al., 1997; Antoncic and Hisrich, 2001), technological opportunities (Zahra, 1993a; Rauch et al., 2009), industry growth (Zahra, 1993a; Antoncic and Hisrich, 2004), demand for new products (Zahra, 1993a) and organisational factors such as size of business (Rauch et al., 2009), strategy (Lumpkin and Dess, 1996, Dess et al., 1997), structure (Lumpkin and Dess, 1996).

However, past research has been criticised for being more focused on examining correlational relationship between one or more of organisational and environmental factors and CE rather than building and exploring CE model (Antoncic and Hisrich, 2004). Consequently, there is no consensus on what constitute suitable moderators or contingency factors and more research in this area is needed (Rauch et al., 2009).

3.4 Theoretical Model

The present study develops a contingency model for EG by proposing a VBM approach to address the gap in the performance dimension and to keep the balance between conformance and performance. The conformance dimension has been extensively covered in the literature and can be addressed with CG codes and/or standards, providing they are subject to assurance/audit (Connell, 2004; Lees, 2005, 2010) and well established oversight mechanisms and tools (e.g. audit committees and

non-executive directors) can be used to ensure accountability (Lees, 2005, 2010; Bhimani and Soonawalla, 2005).

Performance dimension relates to strategy and value creation (Lees, 2005, 2010), where assurance, by means of standards and audit is not easy or feasible (Bhimani and Soonawalla, 2005; Lees, 2005, 2010). Alternatively, companies can rely on best practice tools and techniques to address the oversight gap in the performance dimension (Connell, 2004; Lees, 2005, 2010). Performance oversight mechanisms include strategic committee at board level (Connell, 2004, Lees, 2005, 2010), strategic scorecard (Connell, 2004, Lees, 2005, 2010) and PMSs such as balanced scorecard (Busco et al., 2006) and EVA (Bhimani and Soonawalla, 2005). However, little is known about the best practices that can be used to address the performance oversight gap and/or to keep the balance between conformance and performance. This study proposes the VBM approach to address the oversight gap in the performance and achieve balance between conformance and performance.

Unlike Connell (2004) who defines the performance dimension in terms of strategy and strategic decision-making and management (Lees, 2005, 2010), this model operationally defines the performance dimension in terms of entrepreneurial activities (CE) necessary to increase the wealth of the business (Zahra, 1996). CE is as important as strategic management and, arguably, they complement each other in creating wealth (Ireland et al., 2001, 2003). While strategic management focuses on developing sustainable competitive advantage (Ireland et al., 2003). CE focuses on the process that leads to venture creation (Cooper et al., 2000).

This theoretical model builds on the notion that organisational performance represents the outcome of interaction between accountability and enterprise (Short et al., 1999). To achieve a greater performance the company should adopt a set of CG mechanisms to ensure accountability (Connell, 2004); meanwhile, the management of the company should engage in entrepreneurial activities that lead to value creation (Zahra, 1996). Accordingly, a VBM approach can be assessed in terms of its ability to improve both CG and CE as important drivers (mediators) of organisational performance.

The theoretical model also draws on the premise of contingency theory and prior literature in management accounting (Chenhall, 2007; Abdel-Kader and Luther, 2008), CE (Lumpkin and Dess, 1996; Rauch et al., 2009) and CG (Dey, 2008) to develop a theoretical model of EG. Following Gerdin and Greve's (2004) hierarchical

taxonomy of forms of fit, a Cartesian-contingency-mediation form of fit is used. The theoretical model posits that under certain circumstances, VBM, CG and CE contribute to a greater organisational performance when these practices fit the context. Further, the theoretical model proposes an indirect effect of VBM implementation on organisational performance through influencing CG mechanisms and CE as mediating factors (see figure 3.2).

Prior VBM studies suggest some contingency factors (e.g. environmental uncertainty, strategy, company size and structure) that may influence a company decision to implement VBM (Chenhall, 2006). Similarly, in the CE literature, some key contingencies have been suggested (e.g. environmental uncertainty, strategy, company size and structure) (Lumpkin and Dess, 1996). Limited numbers of contingencies have been suggested (e.g. company size and agency conflicts) in CG studies (Dey, 2008).

The theoretical model developed in the current study (see figure 3.2) comprises five key contingencies (agency conflicts, company size, environmental uncertainty, strategy and decentralisation) that would influence VBM, CG and CE practices in common. While investigating the inter-relationships between these contingency factors is beyond the objectives of this study, these contingencies are related to each other and selecting these contingency factors in this study can be justified as follows:

First, given the research problem that embarks on the existence of the agency problem, as a result of the separation of ownership and control, agency conflicts can be considered as an important contingency factor affecting VBM, CG and CE practices.

Second, company size causes agency problems in different ways (Jones and Butler, 1992). For instance, when the company grows, managers tend to reduce risk through focusing more on control functions at the expense of income producing functions (Ettlie, 1983) and developing more bureaucratic procedures (Jones and Butler 1992). In addition, the increased size leads to increase in the moral hazard problem, as the number of agents involved in the entrepreneurship process increases (Jones and Butler, 1992).

Third, it has been argued that agency problems resulting from separation between ownership and management, such as moral hazard (Jensen and Meckling, 1976) and

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risk aversion (Jensen, 1986) are problems only under uncertainty conditions (Jones and Butler, 1992). Besides, uncertainty adds some difficulties to the process of evaluating management performance (Jones and Butler, 1992). Therefore, uncertainty is considered a õpowerful contextual variable that is at the foundation of contingency based researchö (Chenhall, 2007: p.172).

Fourth, strategy and uncertainty are closely related (Chenhall, 2006). Possibly, the most important new stream of literature in the contingency theory is that related to the role of strategy in designing PMS (Chenhall, 2007). PMS endeavours to align strategy with operations by interpreting official goals into operative goals to be cascaded down through the organisation (Chenhall, 2007). Moreover, strategy is one of the most important determinants of the level of CE (Covin and Slevin, 1991; Zahra, 1991).

Fifth, organisational structure is also closely related to uncertainty and strategy, as the choice of the organisational structure, including decentralisation, should fit the level of uncertainty in the environment and strategy (Chenhall, 2007).
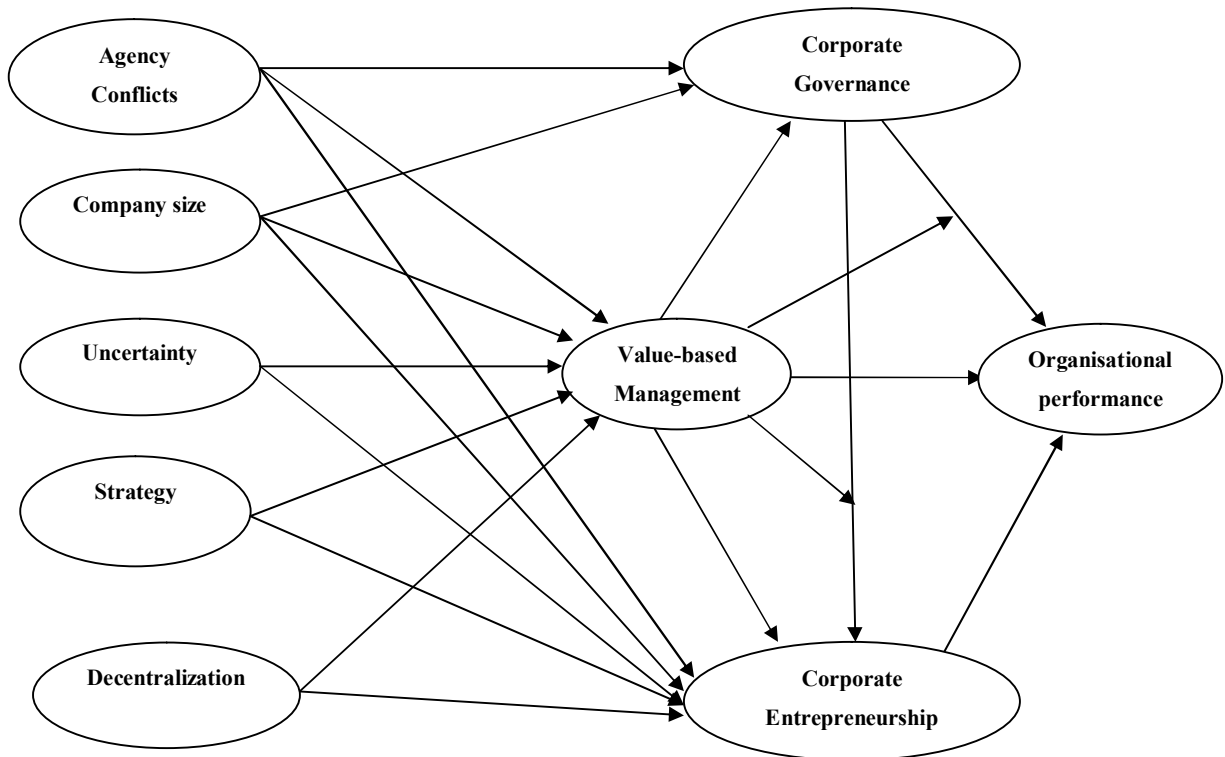
Figure 3.2: A contingency model of EG and VBM

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3.5 Research Hypotheses

Based on the developed theoretical model, a number of hypotheses were developed and classified into four groups. The first group of hypotheses relates to the contingency relationships between agency conflicts, company size, uncertainty, strategy, decentralisation and VBM, in addition to the association between VBM and organisational performance. The second group of hypotheses relates to the contingency relationships between agency conflicts, company size and CG, in addition to the association between CG and organisational performance. The third group of hypotheses relates to the contingency relationships between agency conflicts, company size, uncertainty, strategy, decentralisation and CE, in addition to the association between CE and organisational performance. The fourth group of hypotheses relates to the inter-relationships between VBM, CG, CE and organisational performance.

3.5.1 The First Group of Hypotheses

3.5.1.1 VBM and Organisational Performance

It has been argued that contingency-based management accounting studies should use organisational performance as the dependent variable (Chenhall, 2003, 2007; Cadez et al., 2008). Arguably, VBM is õa theory of organisational performance, including accounting-related issues as a mechanism of explaining outcomesö (Malmi and Granlund, 2009: p.605). VBM literature explains the mechanism by which better performance is about to emerge, which can help not only to explain but also to predict performance (Malmi and Granlund 2009).

Advocates of VBM argue that it can lead to greater performance and shareholder value creation (Stewart, 1991). The perceived benefits of VBM include improvements in financial performance (e.g. improvements to share price and reduction in capital employed) and decision making (e.g. better planning, better resource allocation and better portfolio management) (Cooper et al., 2001). The literature also suggests that value-based measures (especially EVA) are more correlated to share price than traditional accounting measures (e.g. EPS, ROI). Therefore, they are better used as predictors of stock returns (Ittner and Larcker, 1998; 2001; Elali, 2006).

However, the results of prior studies that examined the effect of using value-based measures in performance measurement and compensation on organisational performance are mixed and contradictory (Zimmerman, 1997; Ittner and Larcker, 2001; Francis and Minchington, 2002). While the results in general tend to assume that VBM improves organisational performance (Lueg and Schäffer, 2010), õthe literature as a whole does not agree with this. But most studies do neither possess the methodological scope nor sufficient data to make a clear statement on performance effectsö (Lueg and Schäffer, 2010: p.29). Based on this a priori reasoning, it is proposed that VBM implementation is likely to have a positive effect on organisational performance. Accordingly, the following hypothesis can be developed:

H1: VBM is positively associated with organisational performance.

3.5.1.2 Agency Conflicts and VBM

Agency conflicts arise from misalignment between the interests of owners and managers of a company as a result of the separation between ownership and control (Jensen and Meckling, 1976; Fama and Jensen, 1983a). Different sources of agency conflicts have been identified including moral hazard (Jensen and Meckling, 1976), earning retention, risk aversion (Jensen, 1986) and time horizon (Healy, 1985). The literature suggests some variables that can be used to proxy the magnitude of agency conflicts, such as ownership structure (Lovata and Costigan, 2002), company size (Dey, 2008) and financial leverage (Hogan and Lewis, 2005). The higher the agency conflicts the greater the demand for oversight and control mechanisms to align conflicting interests (Dey, 2008).

The literature also suggests that VBM can be used as an effective tool to reduce the moral hazard problem, align the managers and shareholdersø interests (Stewart, 1991; Lovata and Costigan, 2002) and lead to the creation of shareholder value (Crowther, 2003). VBM better aligns the interests of managers and shareholders through linking their compensations to shareholder value (Ryan and Trahan, 2007) and aligning CG practices with the main objective of creating shareholder value (Armour and Mankins, 2001).

The results of empirical studies support this notion. For instance, McLaren (2000) suggests that the main reason for implementing VBM in companies in New Zealand is to align managerial and shareholder interests. Lovata and Costigan (2002) conclude that companies using EVA exhibit a higher percentage of institutional ownership and

lower percentage of insider ownership (higher level of agency conflicts) in comparison with non-adopter companies. Further, Hogan and Lewis (2005) argue that shareholders and/or the boards of companies with high agency conflicts may pressure top management to adopt economic profit plans if they believe that the plans more effectively align the interests of managers and shareholders.

Therefore, agency conflicts are likely to influence the decision of adopting VBM. In other words, the higher the potential agency conflicts in a company, the more likely the company is to use the VBM approach. Accordingly, the following hypothesis can be developed:

H2: VBM implementation is positively associated with agency conflicts.

3.5.1.3 Company Size and VBM

The findings of the contingency-based studies indicate that company size is positively related to accounting and control systems sophistication. For instance, Merchant (1981, 1984), Bruns and Waterhouse (1975), Ezzamel (1990), Libby and Waterhouse (1996) and Haldma and Laats (2002) suggest that as a company increases in size, the accounting and control systems (e.g. the budgetary control system) tend to be more sophisticated. Furthermore, Guilding (1999) concludes that company size is one of the factors that have a significant contingent impact on competitor-focused accounting (CFA) usage.

Similarly, the findings of Hoque and Jamesøs (2000) study support the proposed positive relationship between company size and balanced scorecard adoption as one of the sophisticated PMSs. More recently, the findings of some studies suggest that large companies are more likely to adopt more sophisticated MAPs in general (Abdel-Kader and Luther, 2008) and strategic management accounting in specific (Cadez et al., 2008).

The VBM literature also suggests that the larger the company size, the more likely that financial performance becomes more complicated and consequently the company tends to utilise a more sophisticated PMS to provide information for decision making and to determine shareholder wealth (Cooper and Petry, 1994; Ryan and Trahan, 1999). In addition, the implementation of VBM is very costly, time consuming, requires enormous senior managerial commitment and most companies that adopt VBM employ consultants and invest heavily in education and training that cover the

majority of managers and employees (Arnold, 2008; Conell, 2004; Boulos et al., 2001). Thus, implementing VBM requires significant resources, which makes it only affordable for large companies. Moreover, the results of the empirical studies conducted by Ryan and Trahan (1999, 2007) support the claims of positive association between company size and VBM implementation. Based on this a priori reasoning, VBM implementation is likely to take place in large companies and the following hypothesis can be derived.

H3: VBM implementation is positively associated with company size.

3.5.1.4 Environmental Uncertainty and VBM

External environment is one of the early and important contextual factors that have been examined at the foundation of contingency based research (Chenhall, 2007; Abdel-Kader and Luther, 2008). Different taxonomies have been used in the literature to capture the multiple aspects of external environment (Chenhall, 2007). For instance, Khandwalla (1977) uses turbulence, hostility, diversity and complexity taxonomy. Other taxonomies include complexity and dynamism (Duncan, 1972), ambiguity (Outchi, 1979), intensity of competition, dynamism, unpredictability of external environment (Gordon and Narayanan, 1984) and lack of information (Chenhall and Morris, 1986).

However, care should be exercised in interpreting the results of different studies that examine the effect of external environment on management accounting system, as different measures for uncertainty are used for external environment (Abdel-Kader and Luther, 2008). For instance, Gordon and Narayanan (1984) use competition, dynamism and unpredictability of external environment to measure uncertainty. Further, Chenhall and Morris (1986) use lack of information on environmental factors to measure the same construct.

Uncertainty, the most widely researched aspect of environment (Chenhall, 2007), represents a situation where the organisation faces difficulties in planning the future as events cannot be identified or the impact of events on operation is unknown (Chenhall, 2006). In MCS research, uncertainty has been related to difficulties in making accurate predictions (Gul and Chia, 1994) and evaluating performance, as managersø performance depends on events over which they have little control (Chenhall, 2006).

High levels of uncertainty makes performance evaluation more subjective (Govindarajan, 1984). Therefore, non-accounting style, rather than budget or profit constrained style, becomes more appropriate (Ross, 1995). Furthermore, the decision makers are likely to seek external, non-financial and ex ante information (Gordon and Narayanan, 1984) and more sophisticated management accounting systems (MASs) (Abdel-Kader and Luther, 2008). More sophisticated reports from MASs can help to reduce uncertainty and improve managerial decision-making (Chong and Chong, 1997).

In this regard, the literature suggests that the VBM approach is one of the highly sophisticated MASs (Abdel-Kader and Luther, 2008) and represents the fourth (latest) stage of management accounting evolution (Ittner and Larcker, 2001). In addition, it has been argued that competitive environment is one of the important driving forces behind VBM implementation (Athanassakos, 2007). Therefore, VBM implementation is likely to be more appropriate when the level of uncertainty is relatively high. Accordingly, the following hypothesis can be developed:

H4: VBM implementation is positively associated with environmental uncertainty

3.5.1.5 Strategy and VBM

There has been a growing interest in studying the contingent relationship between strategy and MCS in general (Langfield-Smith, 1997) and PMS in particular (Ittner and Larcker, 1997). For instance, some studies examine the effect of strategy on budgetary usage (Collins et al. 1997), budget emphasis (Van der Stede, 2000), budgetary slack (Van der Stede, 2000, 2001), structure and PMS (Abernethy and Lillis, 2001).

Different categorisations for strategy have been suggested to study this contingent relationship. For instance, Miles and Snow (1978) use the taxonomy of prospectors/analysers/defenders. Gupta and Goviandarajan (1984) use the build/hold/harvest taxonomy. Porter (1980) uses a product differentiation/cost leadership classification of strategy. However, it has been argued that these classifications are very similar and the prospectors/product differentiators/builders taxonomy that can be used anonymously at one end of a continuum and defenders/cost leaders/harvesters at the other end (Abdel-Kader and Luther, 2008).

Contingency-based studies suggest that prospectors/product differentiators/builders tend to create innovation and look for new products and market opportunities (Cadez and Guilding, 2008). These strategies are linked to outcome oriented evaluation, flexible structures, lack of standardised procedures (Chenhall, 2003, 2007) and more sophisticated MASs (Abdel-Kader and Luther, 2008). Defenders/cost leaders/harvesters are less dynamic and more focused on efficiency as a key for success (Cadez and Guilding, 2008). These strategies are linked to centralised control systems, specialised and formalised work (Chenhall, 2003, 2007) and less sophisticated MASs (Abdel-Kader and Luther, 2008).

Therefore, strategies characterised by an entrepreneurial orientation (prospectors/product differentiators/builders) are likely to be more appropriate to VBM as a sophisticated MAS than conservative strategies (defenders/cost leaders/harvesters). Accordingly, the following hypothesis can be developed:

H5: VBM implementation is positively associated with prospectors/product differentiators/builders strategies and negatively associated with defenders/cost leaders/harvesters.

3.5.1.6 Decentralisation and VBM

Organisational structure in general and decentralisation in specific is likely to influence the extent to which value-based measures can be used effectively throughout organisations. As an organisation becomes larger, the managers need to handle greater quantities of information to determine where they have to institute controls such as rules, documentation, extended hierarchies and greater decentralisation down hierarchical structures.

Child and Mansfield (1972) and Khandwalla (1972, 1977) suggest that large decentralised firms utilise mass production, more sophisticated controls and high participation levels. In addition, the findings of Merchantøs (1981) study support the previous argument that large companies are more decentralised, use more sophisticated controls and depend heavily on participation in using budgets. Moreover, Abdel-Kader and Luther (2008) contend that decentralised firms are likely to adopt more sophisticated MAPs.

VBM literature suggests that VBM can work only if decision making is decentralised (Bannister and Jesuthasan, 1997) and business units are empowered (Boulos et al., 2001). Empowering business units has a significant importance in the VBM environment (Bannister and Jesuthasan, 1997) as one of the key success factors in VBM implementation (Boulos et al., 2001).

Value-based measures have the advantage of being flexible, as they can be calculated at the divisional or business unit levels, which make these measures appropriate to decentralised organisations (Hogan and Lewis, 2005). So, if these measures are to be applied at the level of operational managers, the authority over decisions related to value drivers should be delegated to those managers (Chenhall, 2006). Therefore, VBM implementation is likely to be more appropriate for decentralised organisational structures. Accordingly, the following hypothesis can be developed:

H6: VBM implementation is positively associated with decentralisation.

3.5.2 The Second Group of Hypotheses

3.5.2.1 CG and Performance (H7)

CG is one of the important factors in determining firm value and the development of financial markets across countries (La porta et al., 2000). However, reviewing the literature on the relationship between various CG mechanisms and corporate performance shows mixed results (Hanifa and Hudaib, 2006). Most prior research examines a small subset of CG characteristics (factors), yielding results that suggest that some characteristics are linked to firm performance, while others are not (Brown and Caylor, 2008). The results of these empirical studies with regard to the relationship between CG and performance are not clear (Larcker et al., 2007; Bebchuk and Weisbach, 2010).

To overcome this problem some recent studies have examined the impact of a summary measure of governance on firm performance. For instance, Gompers et al. (2003) investigate the impact of CG on firm performance during the 1990s in the US and conclude that firms with lower shareholder rights (weak CG structure) exhibit lower firm valuation. Similarly, Bebchuck and Cohen (2005) and Cremers and Nair (2005) conclude that CG indices impede firm valuation. However, the results of other studies (e.g. Core et al., 2006) could not find any support for these results, even for the same sample of companies used in Gompers et al. (2003), in a different period of

time. The contradictory results have been attributed to period-specifc results and/or the inadequate risk-ajustment and/or the endogenity in governance-performance relationship (Bhagat and Bolton, 2008).

However, in the policy domain, the proponents of CG have notably cited the results of Gompers et al. (2003) as evidence that good CG has a positive impact on corporate performance (Bhagat and Bolton, 2008). Based on this a priori reasoning, it is proposed that companies that have a strong CG structure are likely to have a greater performance. Accordingly, the following hypothesis can be developed:

H7: The strength of CG structure is positively associated with organisation performance.

3.5.2.2 Agency Conflicts and CG

The governance structure of a company comprises a number of mechanisms to minimise the agency conflicts, align the interests of owners and managers (Dey, 2008; McKnight and Weir, 2009) and create value (La Porta et al., 2000). The higher the agency conflicts in a company, the greater the demand for governance mechanisms that can mitigate these conflicts (Dey, 2008).

The literature suggests that the effectiveness of CG mechanisms differs from one context to another (Ting et al., 2006). For instance, Mitton (2002) analyses the CG mechanisms during the East Asian financial crisis in 1997-1998 and concludes that strong CG structure becomes more important during crisis time. Similarly, Ting et al. (2006) and Dey (2008) suggest that agency conflicts are important in explaining CG effectiveness.

Further, agency conflicts vary between companies, depending on the ability of managers to exercise their own preferences rather than value maximisation and the complexity of the operating environment (Jensen and Meckling, 1976; Dey, 2008). Thus, the governance structure required to tackle agency conflicts varies across companies (Dey, 2008). Accordingly, agency conflicts are likely to be positively related to the strength of CG structure. Accordingly, the following hypothesis can be developed:

H8: The strength of CG structure is positively associated with agency conflicts.

3.5.2.3 Company Size and CG

Company size triggers agency problems in different ways (Jones and Butler, 1992). For instance, when the company grows, the managers of the company tend to reduce risk through focusing more on control functions at the expense of income producing functions (Ettlie, 1983) and developing more bureaucratic procedures (Jones and Butler, 1992). In addition, the increased size leads to an increase in the moral hazard problem, as the number of agents involved in the entrepreneurship process increases (Jones and Butler, 1992). Therefore, increased company size demands strong CG structure to mitigate agency conflicts.

Company size is related to the strength of CG structure and the level of compliance with CG codes. For instance, Gompers et al. (2003) conclude that there is a positive association between company size and CG index. There is some evidence that company size has a significant positive influence on the relationship between CG and performance (Haniffa and Hudaib, 2006).

Further, the rationale behind the õcomply or explainö approach for CG codes is that no single CG structure fits all (Arcot et al., 2010). For instance, The CCCG in the UK allows smaller listed companies (below FTSE 350) not to comply with some provisions (Combined Code, 2003). Compliance with some CG provisions (e.g. proportion of non-executive directors and independent non-executive directors) sometimes is costly and small companies cannot afford it (Arcot et al., 2010). Accordingly, large size companies are likely to have a stronger CG structure. Therefore, large size companies are likely to be more compliant with CG codes. Accordingly, the following hypotheses can be derived:

H9: The strength of CG structure is positively associated with company size.

3.5.3 The Third Group of Hypotheses

3.5.3.1 CE and Performance

Prior theory and research have proposed that CE is a key element for organisational success (Lumpkin and Dess, 1996). In a rapidly changing environment, where future profit streams are uncertain and companies need to persistently look for new opportunities, adopting CE can benefit companies (Rauch et al., 2009) and result in strong and improved organisational performance (Ireland et al., 2003) in terms of growth and profitability (Coivin and Slevin, 1991).

However, the significance of the relationship between CE and business success varies among studies (Rauch et al., 2009). While some studies (e.g. Hult et al., 2003; Avlonitis and Salavou, 2007) conclude that companies that are highly entrepreneurial outperform companies that are less entrepreneurial, other studies (e.g. Zahra, 1991; Lumpkin and Dess, 2001) have found a lower correlation between CE and performance or even no significant relationship at all between CE and performance (e.g. Covin et al., 1994).

A recent study by Rauch et al. (2009) involved a meta-analysis exploring the magnitude of the relationship between CE and performance in more than 50 studies from the literature. The results in general support the argument of having positive performance implications for CE. Based on this a priori reasoning, it is proposed that companies that have a strong CG structure are likely to have a greater performance. Accordingly, the following hypothesis can be developed:

H10: CE is positively associated with organisational performance.

3.5.3.2 Agency Conflicts and CE

From the agency theory perspective, the agency problem in an entrepreneurial context arises because õentrepreneurial behaviour, by definition, is action in the context of uncertainty so that it is impossible or prohibitively expensive to evaluate the effectiveness of an agentøs behaviourö (Jones and Butler 1992: p. 736). Further, agents (managers) are risk averse (Jensen and Meckling, 1976) and do not have an incentive to perform entrepreneurially (Jones and Butler, 1992).

Agency conflicts and information asymmetries between managers and shareholders cause agency costs (Jensen and Meckling, 1976). Agency costs, in turn, exhaust company resources and may constrain innovation and CE (Miller, 2011), especially when the board is conservative (Morck et al., 2005). Accordingly, CE is likely to be negatively related to agency conflicts and the following hypothesis can be developed:

H11: CE is negatively associated with agency conflicts.

3.5.3.3 Company Size and CE

Though company size is mostly used as a control variable (Rauch et al., 2009), there are some clues in the literature that suggest that it would affect the CE. For instance, Hit et al. (1996) suggest that company size is negatively associated with internal innovation. Moreover, Covin and Covin (1990) suggest that competitive

aggressiveness could be an effective strategic posture in a hostile environment for small companies with at least 30 employees. Similarly, Barringer and Bludorn (1999) provide evidence of a negative association between company size and CE.

Rauch et al. (2009) argue that smaller companies are more flexible, can quickly adapt to changes in the environment to take new opportunities, and direct influence can be practiced by top management. Therefore, there is rationale to suppose that the effect of CE on performance is greater in small organisations (Rauch et al., 2009). Accordingly, CE is likely to be negatively related to company size and the following hypothesis can be developed:

H12: CE is negatively associated with company size.

3.5.3.4 Environmental Uncertainty and CE

In CE research, external environment has been suggested as an important determinant of entrepreneurial activities at an organisational level (Covin and Slevin, 1991) and intrapreneurship (entrepreneurship within existing companies) (Miller, 1983; Covin and Slevin, 1991).

The literature suggests that environmental uncertainty is positively associated with product innovation (Miller and Friesen, 1982). Dynamism relates to the perceived instability and continuing changes in the company's markets (Zahra, 1991; Antoncic and Hisrich, 2001, 2004) or the rate of unpredictable change in a company's environment (Duncan, 1972; Lumpkin and Dess, 2001). Increased dynamism creates opportunities in the market and stimulates the pursuit of CE (Zahra, 1991). Further, companies respond to challenging conditions in dynamic environments through innovative behaviour, risk taking and proactiveness (Khandwalla, 1987). Based on previous results, CE is likely to be positively related to the level of environmental uncertainty and the following hypothesis can be developed:

H13: CE is positively associated with environmental uncertainty.

3.5.3.5 Strategy and CE

From an entrepreneurial perspective, strategy has been considered an important predictor of innovation decisions (Covin and Slevin, 1991) and CE activities (Zahra, 1991), as it provides a framework within which the company identifies possible means for achieving goals (Zahra, 1993b). Accordingly, a fit between strategy and CE

has been argued to be an important predictor of business success and improved performance (Miller, 1986; Zahra, 1991).

Dess et al. (1997) use two of the generic strategies proposed by Porter (1980), cost leadership and differentiation. Two distinct types of differentiation strategies were suggested: product innovation and marketing differentiation (Miller, 1986). Differentiation through product innovation or pioneering (Miller, 1992) involves creating and development of new products, up-to-date innovations, quality design and using new technologies (Miller, 1988; Dess et al., 1997). Marketing differentiation strategy attempts to create a unique image for a product through extensive advertising, image marketing and intensive marketing (Miller, 1988; Dess et al., 1997). Accordingly, differentiation strategies in general seem to fit better in a more entrepreneurial context and the results of empirical studies support this argument (e.g. Dess et al., 1997; Chenhall, 2007).

Cost leadership strategies require companies to focus more on cost control and efficiency to be the lowest cost producer in an industry, so that excess returns can be obtained even with low prices (Miller, 1988). However, cost savings can be achieved in some situations by means of cutting innovation and advertising cost and offering cheap products to customers looking for cost savings rather than brand image (Dess et al., 1997).

Therefore, it has been argued that cost leadership strategy is not positively associated with new product development and higher performance (Zahra and Covin, 1993; Dess et al., 1997). Interestingly, the results of the two empirical studies of Zahra and Covin (1993) and Dess et al. (1997) challenge this argument. These findings can be partly interpreted as competing on the basis of cost may necessitate proactive monitoring of the environment, risk taking and innovation, including the use of up-to-date technologies that lower costs and improve quality (Dess et al., 1997). Based on previous results, CE is likely to be positively related to prospectors/product differentiators/buildersøstrategies and the following hypotheses can be developed:

H14: CE is positively associated with prospectors/product/builders strategies and negatively associated with defenders/cost leaders/harvesters strategies.

3.5.3.6 Decentralisation and CE

The literature suggests contingency relationships between structural factors, such as decentralisation of decision making and performance of organisations with entrepreneurial orientation (Lumpkin and Dess, 1996). For instance, Khandwalla (1977) argues that the organic organisation type is more appropriate than mechanistic organisation type for the structure of organisations with entrepreneurial orientation.

The organic organisation type is more decentralised and informal; in addition, it emphasises lateral interaction and sharing of knowledge throughout the organisation (Lumpkin and Dess, 1996: p.156). Besides, delegating decision making authority to lower organisational levels enables well-informed people to contribute to the company ability to adapt and innovate (Miller, 1983).

The mechanistic organisation type is highly centralised, formal and place more emphasis on vertical interaction and specialised differentiation between functions (Lumpkin and Dess, 1996: p.156-157). The results of empirical studies also support this argument. For instance, the findings of Covin and Slevin (1991) suggest that CE is associated with decentralisation. The results of empirical studies also suggest that organic structure moderates the relationship between CE and performance (Covin and Slevin, 1988). Accordingly, CE is likely to be associated with decentralisation of decision making and the following hypothesis can be developed:

H15: CE is positively associated with decentralisation.

3.5.4 The Fourth Group of Hypotheses

3.5.4.1 VBM and CG

VBM provides an integrated management strategy and financial control system that can be used to mitigate agency conflicts and create shareholder value through providing a set of decision making tools (metrics), which can be used to measure and reward management performance (Ryan and Trahan, 2007). However, there is some evidence that incentive contracts alone may not be enough to tackle the agency problem, even if compensations are based on VBM metrics (Healy, 1985; Shleifer and Vishny, 1997; Dey, 2008). The literature suggests some complementary tools to incentive contracts such as increasing management ownership (Audretsch et al., 2009). In that regard, VBM and CG practices have common objectives including

mitigating agency cost and creating shareholder value. Thus, VBM can be seen as a form of CG (Lander and Reinstein, 2005).

The advocates of VBM ascertain that VBM is a holistic management approach that comprises a set of CG mechanisms aligned with the corporate mission, strategy, management process, PMS and reward system (Arnold, 2000; Armour and Mankins, 2001). Thus, VBM, as a holistic management approach, is likely to stimulate strengthening the CG structure to be aligned with the objective of shareholder maximisation. The results of a recent study by Larcker et al. (2011) support this argument and conclude that value-maximising contracts determine the observed governance choices of companies in the USA.

Despite the importance of linking VBM implementation to CG mechanisms, very few studies have examined this relationship. For instance, in a survey of listed companies in Japan, Morisawa and Kurosaki (2002) conclude that integrating CG into the VBM system, to be aligned with management orientation and decision making process, is one of the key success factors in increasing corporate value. In addition, a cross-sectional study by El-Mir and Seboui (2008) concludes that EVA, as a performance measure, does not outperform other accounting measures in explaining the created shareholder value; however, the convergence or the divergence between EVA and the created shareholder value is largely explained by CG practices.

Based on this a priori reasoning, it is proposed that companies that adopt the VBM approach are likely to have a strong CG structure, to ensure accountability of management to shareholders. This implies that VBM implementation is likely to indirectly affect organisational performance acting through CG structure as an intervening variable. Accordingly, the following hypotheses can be developed:

H16: VBM implementation is positively associated with the strength of CG structure.

H16a: CG structure mediates the positive relationship between VBM implementation and organisational performance.

3.5.4.2 VBM and CE

From the EG perspective, the performance dimension (operationalised in this model as CE) is as important as conformance to business success and value creation (Connell, 2004). PMSs such as balance scorecard and EVA (Bhimani and Soonawalla, 2005) can be used to address the oversight gap in the performance

dimension. Arguably, strategic PMSs, including balanced scorecard and VBM, better align PMS with organisational objectives (Ittner et al., 2003).

Advocates of VBM argue that VBM can better align the VBM metrics and strategic objectives (creating shareholder value) through identifying internal objectives, strategies, value drivers and action plans that lead to shareholder value creation (Copeland et al., 2000; Ittner et al., 2003). In addition, a VBM approach ties compensation to shareholder return performance (Rappaport, 1986), to motivate and reward the shareholder value creation behaviour throughout the organisation (Slater and Olson, 1996).

CE is an organisational process that is central to the value-creation process (Jones and Butler, 1992). As CE õcan enhance shareholdersø value by creating a work environment that supports individual and corporate growth, giving employees an opportunity to use their creative skills, quickening a companyøs response to the market and creating an organisational culture that fosters cross-functional collaboration ö (Zahra, 1996: p.1715). Therefore, to achieve the objective of creating shareholder value, VBM adopters are expected to be more engaged in innovation, renewal and venturing necessary for value creation. However, little is known about the relationship between VBM and CE.

Based on this a priori reasoning, it is proposed that companies that adopt the VBM approach are likely to be more engaged in CE to achieve the ultimate objective of creating shareholder value. This implies that VBM implementation is likely to indirectly affect organisational performance acting through CE as an intervening variable. Therefore, the following hypotheses can be developed.

H17: VBM implementation is positively associated with CE.

H17a: CE mediates the positive relationship between VBM and organisational performance

3.5.4.3 CG and CE

Understanding the link between CE and CG is important because strategic competitive advantages may not be created when CG mechanisms do not encourage and monitor management to undertake the necessary actions to recognise opportunities (Phan et al., 2009). Directors can play an important role in identifying opportunities of growth by giving more attention to CE and innovation activity that

allow the company to sustain its competitive advantage (Zahra et al., 2009). Boards can encourage wealth-creating CE by providing resources and political support (Huse, 2007).

While CG mechanisms aim to minimise agency costs and improve company performance, employing these mechanisms have not only direct cost of implementation, but also indirect opportunity costs (Aguilera et al., 2008). Indirect or opportunity costs õrelate to the impact of governance on strategic priorities and, consequently, the exploitation of business opportunities. For example, managing relationships with institutional investors can create opportunity costs by diverting managersø attention from strategic and operating decisions toward anticipating short-term expectations about share pricesö (Aguilera et al., 2008: p. 480).

Although the CG system could have a significant influence on CE, surprisingly the research on the structures and routines necessary for CE has been neglected to a large extent (Phan et al., 2009). The results of Zahra (1996) suggest that some CG mechanisms, such as high ratio of non-executive directors on the board and short-term institutional ownership, have a negative impact on CE. Similarly, Hitt et al. (1996) conclude that the market for corporate control, as a corporate governance mechanism, negatively affects internal innovation. However, other mechanisms, such as stock ownership by outside directors and long term institutional ownership, are positively associated with CE (Zahra, 1996). Meanwhile, the outside directors have less negative impact on CE when they own stock in the company (Zahra, 1996).

In summary, CG mechanisms are influencing CE in different ways. Some of these mechanisms (e.g. outside directors) may negatively affect CE and other (e.g. stock ownership by outside directors) may have a positive impact on CE and can, to some extent mitigate the negative impact of other mechanisms (Zahra, 1996). However, the literature tends to assume that more focus on control and accountability is negatively associated with enterprise and innovation (Hitt et al., 1996; O'Sullivan, 2000). Accordingly, strong CG structure is likely to be associated with less entrepreneurial orientation and the following hypothesis can be developed:

H18: The strength of CG structure is negatively associated with CE.

3.5.4.4 The Interaction between VBM and CG

The literature suggests that VBM seeks to mitigate agency conflicts through providing a set of metrics that measure and reward management performance to align managers and shareholder interests (Ryan and Trahan, 2007). Arguably, VBM acts as a CG mechanism that works with other CG mechanisms to mitigate agency conflicts (Garvey and Milbourn, 2000; Lander and Reinstein, 2005; Ryan and Trahan, 2007).

The literature also suggests a complementarily relationship between different CG mechanisms, which makes the interaction effects of particular combinations of CG mechanisms more effective than others (Aguilera et al., 2008). Therefore, combining VBM with other CG mechanisms can result in interaction effects in addition to their original effects if they worked separately. Therefore, this study investigates the interaction effects resulting from combining VBM and CG mechanisms on CE and performance. For instance, if VBM implementation is associated with strong CG structure, this may lead to overemphasis on control and accountability at the expense of CE. On the other hand, this association can align shareholders and management's interests, minimise agency costs resulting from agency conflicts and lead to improved performance.

Accordingly, this study proposes that the association between VBM and strong CG structure is likely to be positively associated with organisational performance and negatively associated with CE. Therefore, the following hypotheses can be developed.

H19: The interaction term of CG structure multiplied by VBM practices is negatively associated with CE
H20: The interaction term of CG structure multiplied by VBM practices is positively associated with organisational performance.

3.6 Summary

This study sets out to address the tension between conformance and performance in the governance context, through developing a theoretical model of EG based on integrating the agency theory and contingency theory perspectives. In addition, the theoretical model investigates the role of VBM in achieving the objectives of EG through keeping a balance between conformance and performance.

VBM has the potential to achieve the EG objectives in different ways. VBM, as a PMS, aligns the interests of managers and shareholders and mitigates agency conflicts through monitoring their performance and using incentive contracts based on VBM metrics. This can ensure accountability of management to shareholders and contribute to the conformance dimension. Meanwhile, the incentive contracts motivate and reward managers to create value contributing to the performance dimension. Besides, VBM as a holistic management approach potentially stimulates adopting a set of CG mechanisms that are aligned with the objective of maximising shareholder value; meanwhile, it stimulates the entrepreneurial orientation necessary for value creation.

Drawing on the premise of contingency theory, the present study examines the fit between five contingency factors (agency conflicts, company size, environmental uncertainty, strategy and decentralisation) on the one hand and VBM, CG and CE on the other hand. Moreover, it examines the implications of this fit on organisational performance. Unlike other EG frameworks, the present study uses the contingency theory lens to develop a theoretical model that operationalises the conformance and performance dimensions using CG and CE respectively. In addition, it proposes the VBM approach to achieve EG objectives. The theoretical model develops testable hypotheses using five contingency factors with possible influences on VBM, CG and CE in common. It also adopts a holistic approach, assuming that organisational performance is the final outcome of interaction among contingency factors, VBM, CG and CE that may complement or conflict with each other. Studying the effect of each practice individually on organisational performance may lead to misleading conclusions.

The theoretical model provides insights into the potential relationships between five contingency factors, VBM, CG and CE, as important predictors of organisational performance. For instance, the model suggests that VBM implementation is likely to be associated with high levels of uncertainty, prospectors/product differentiators/buildersø strategies, large size of companies and high agency conflicts. Similarly, strong CG structure is likely to be associated with large size companies and high agency conflicts. CE is likely to be associated with high levels of uncertainty, prospectors/product differentiators/buildersø strategies, small size companies and low agency conflicts. In addition, this model suggests that VBM implementation is likely to have a strong CG structure and high level of CE.

Chapter 4

Research Methodology

4.1 Introduction

Developing the contingency model of EG in the previous chapter represents an initial step towards the development of the theory through using the appropriate methodology to test the research hypotheses. This chapter endeavours to explain the adopted research methodology in the current study and the rationale for adopting this methodology.

This chapter is divided into eight sections. The second section will explain the main paradigms used in research in general and in accounting research in particular and the rationale of adopting a positivist paradigm in this study. The third section will discuss the research methodology, including the rationale of adopting a cross-sectional survey methodology in the current study. The fourth section will examine the context of the study, including the rationale of selecting the UK to conduct the empirical study. Additionally, this section will explain in detail the research population and the sampling process. The fifth section will discuss the data collection methods including questionnaire, content analysis and archive data. The sixth section will explain the statistical techniques used in data analysis and the last section will provide a summary of the chapter.

4.2 Research Paradigms

A research paradigm is a philosophical framework that guides the implementation of scientific research (Collis and Hussey, 2009). According to Saunders et al. (2009), the research paradigm (philosophy) adopted in a research embeds important assumptions about the researcherøs view of the world. These assumptions underpin the research strategy (methodology) and the research methods used by a researcher as part of that strategy.

Two main research paradigms are commonly used to conduct research and acquire knowledge in social sciences in general, which are õpositivism" and õinterpretivismö

(Collis and Hussey, 2009). The two paradigms represent two extremes of a continuum of paradigms and along this continuum many other paradigms exist with different philosophical assumptions (Collis and Hussey, 2009). Table 4.1 summarises the assumptions of both the positivist and interpretivist paradigms.

Table 4.1: Assumptions of the Main Paradigms

Philosophical Assumption	Positivism	Interpretivism
Ontological Assumption (The nature of reality)	Reality is objective and singular, separate from the researcher	Reality is subjective and multiple, as seen by participants
Epistemological Assumption (What constitutes valid knowledge)	Research is independent of that being researched	Researcher interacts with that being researched
Axiological Assumption (The role of values)	Research is value-free and unbiased	Researcher acknowledges that research is value-laden and biases are present
Rhetorical Assumption (The language of research)	Researcher writes in a formal style and uses the passive voice, accepted quantitative words and set definitions.	Researcher writes in an informal style and uses the personal voice, accepted qualitative terms and limited definitions.
Methodological Assumption (The process of research)	Process is deductive. Study of cause and effect with a static design (categories are isolated beforehand). Research is context free. Generalizations lead to prediction, explanation and understanding. Results are accurate and reliable through validity and reliability.	Process is inductive. Study of mutual simultaneous shaping of factors with an emerging design (categories are identified during the process). Research is context bound. Patterns and/or theories are developed for understanding. Findings are accurate and reliable through verification.

Source: Collis and Hussey (2009, p. 58)

4.2.1 Positivism

Positivism is õan epistemological position that advocates the application of the methods of the natural sciences to the study of social reality and beyondö (Bryman and Bell, 2007: p.16). Positivism is underlined by the assumption of reality independent from the researcher (Collis and Hussey, 2009), knowledge is acquired by

gathering facts that provide the foundation for laws and the purpose of theory is to generate testable hypotheses (Bryman and Bell, 2007).

Positivism is normally linked to the use of the deductive approach, in which theory and hypotheses are developed first and data are collected to test these hypotheses (Saunders et al., 2009). Positivists tend to use a highly structured methodology to assist replication and verification of their studies (Gill and Johnson, 2002). In addition, positivists use quantifiable data from large samples that allow statistical analysis (Saunders et al., 2009).

4.2.2 Interpretivism

Interpretivism advocates that it is important for the researcher to understand differences between humans and objects of the natural sciences, which requires the researcher to grip the subjective nature of social action (Bryman and Bell, 2007; Saunders et al., 2009). Interpretivism is underlined by the assumption of the subjective social reality shaped by the researcherøs perception (Collis and Hussey, 2009). Unlike positivists, interpretivists contend that the social world of business is too complex to allow theorising using definite ÷lawsø as in the case of physical sciences (Saunders et al., 2009). Therefore, getting useful insights into this complex world can be sacrificed if this complexity is reduced to a series of law-like generalisations (Saunders et al., 2009).

Unlike positivism, which concentrates on measuring social phenomena, interpretivism emphasises exploring the complexity of social phenomena to gain interpretive understanding (Collis and Hussey, 2009). Therefore, instead of employing quantitative methods used by positivists to identify the occurrence frequency of phenomena in the social world, interpretivists tend to use a set of methods to describe and interpret these phenomena (Collis and Hussey, 2009). In other words, interpretivism is normally linked to the use of the inductive approach, where data are collected and used in developing theory (Saunders et al., 2009). Consequently, theory is the result of research and the processes of induction that involve drawing general conclusions from specific observations (Bryman and Bell, 2007).

However, it is worth noting that, in general, there is no paradigm better than another and preferring one paradigm depends, to a large extent, on the research problem and objectives, or even the traditions in a discipline (Collis and Hussey, 2009). Therefore, it is important to know the traditions in accounting research in general and

management accounting research in particular, so that the appropriate paradigm can be adopted in the current research.

4.2.3 Research Paradigms in Accounting Research

Hopper and Powell (1985) provide a taxonomy for accounting research based on Burrell and Morganøs (1979) classification for organisational research, which is closely related to management accounting, according to its principal theoretical and philosophical assumptions. Burrell and Morganøs (1979) framework comprises two independent dimensions based on assumptions concerning the nature of social science and the nature of society (Hopper and Powell, 1985).
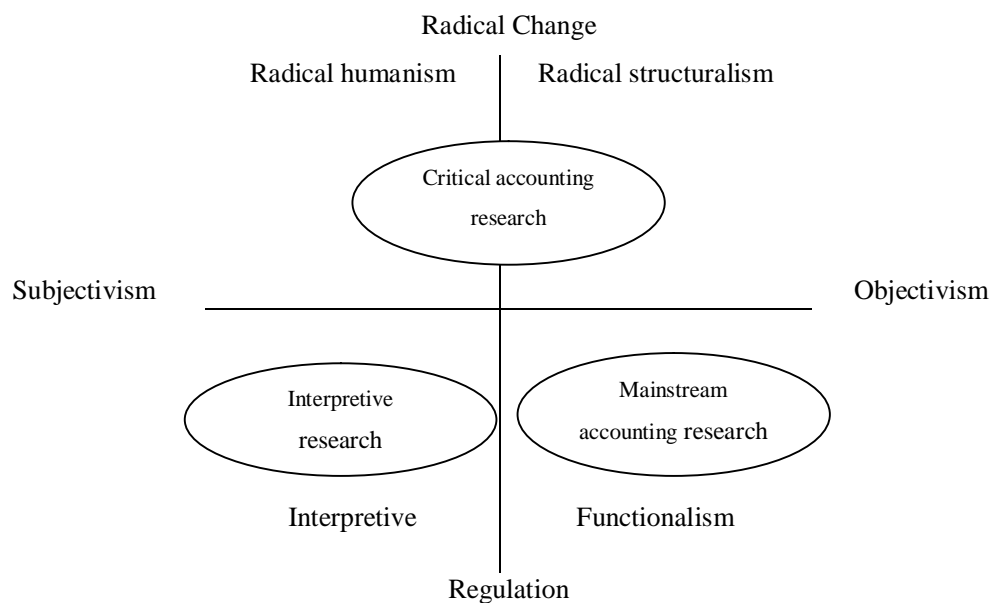
Figure 4.1: Taxonomy of Accounting Research

Source: Hopper and Powell (1985, p. 432) in Ryan et al. (2002, p. 40)

The first dimension (social science dimension) contains four related factors: assumptions concerning ontology, epistemology, human nature and methodology. These assumptions can be integrated into a single õobjective-subjectiveö continuum to categorise the different approaches to social sciences (Hopper and Powell, 1985; Ryan et al., 2002).

The second dimension (society dimension) defines two alternative and fundamentally different approaches to society on a continuum: at one extreme, the focus on regulation, order and stability, to explain why society tends to hold together. At the other extreme, the focus on the fundamental conflict of interests and unequal

distributions of power that provide the potential for radical change (Hopper and Powell, 1985; Ryan et al., 2002).

Table 4.2: Comparison between Mainstream, Interpretive and Critical Accounting Research

	Mainstream accounting research	Interpretative accounting research	Critical accounting research
Beliefs about knowledge	Theory and observation are independent of each other, and quantitative methods of data collection are favoured to provide a basis for generalisation	Theory is used to provide explanations of human intentions. Its adequacy is accessed via logical consistency, subjective interpretation.	Criteria for judging theories are always temporal and context bound. Social objects can only be understood through a study of their historical development and change within the totality of relations.
Beliefs about physical and social reality	Empirical reality is objective and external to the researcher. Human actors are essentially passive objects, who rationally pursue their goals.	Reality is socially created and objectified through human interaction. Human action is intentional and has meaning grounded in the social and historical context.	Empirical reality as characterised by objective, real relations, but is transformed and reproduced through subjective interpretation.
Relationship between accounting theory and practice	Accounting is concerned with means, not ends-it is value natural, and existing institutional structures are taken for granted.	Accounting theory seeks to explain action and to understand how social order is produced and reproduced.	Theory has a critical imperative, in particular the identification and removal of domination and ideological practices.

Source: Chua (1986, pp. 611- 622) in Ryan et al. (2002, pp. 41- 43)

Hopper and Powell (1985) combine the two independent dimensions of social science and society to form four mutually exclusive frames of reference that can be used as taxonomy for accounting research: functionalist, interpretive, radical humanist and radical structuralist (see figure 1). According to this taxonomy, there are three main categories of accounting research, namely: mainstream research, interpretative

research and critical research (Chua, 1986, Ryan et al., 2002). A summary of the underlying ontological and epistemological differences between mainstream, interpretive and critical accounting research is presented in table 4.2.

4.2.4 Traditions of Research in Management Accounting

In the late 1970s and early 1980s there was growing concern over the gap between theory and practice in management accounting research (Scapens, 1984) and the lost relevance of management accounting information to process control, product costing and performance management (Johnson and Kaplan, 1987). The identification of this gap has contributed to developments in management accounting research, which has focused on exploring the nature of MAPs (Ryan et al., 2002).

As a result, management accounting research, which remained within the neoclassical economics convention, developed a more positive standpoint. The researchers became more interested in positive theories to unearth explanations for the observed MAPs (Ryan et al., 2002). While normative theories that were dominant to the management accounting research in the 1950s and 1960s focus on prescription, positive theories focus on explanation and prediction (Ryan et al., 2002).

However, the positive research in management accounting, informed by neoclassical economics, has been criticised for the unrealistic assumptions of certainty, costless information and a single owner or decision-maker that underpins the conventional wisdom of management accounting research (Ryan et al., 2002). While subsequent developments in information economics and agency theory have contributed to relaxing these assumptions, these developments did not change the underlying economic basis of the mainstream research (Ryan et al., 2002).

Therefore, a number of alternative approaches have emerged in management accounting research such as behavioural, organisational and social theories (Ryan et al., 2002). One of these developments uses the organisational theories in management accounting to explain the MAPs (Ryan et al., 2002). Using contingency theory in management accounting research is a good example of the connection between organisation theory and management accounting (Otley, 1980). Although it contributes to extending the discipline base of the subject, it has remained a part of mainstream research (Ryan et al., 2002).

4.2.5 Rationale of Adopting a Positivist Paradigm

This study draws on the premise of contingency theory in management accounting research to develop a contingency model of EG and VBM, so that it can help to understand, explain and predict VBM practices in relation with CG, CE and performance. In line with previous contingency theory-based management accounting research, this study adopts the positivist paradigm for the following reasons:

First: the ontological assumptions of the positivist paradigm õobjectivismö better match the assumptions that this study already has regarding reality. Objectivism depicts the situation that social entities exist in reality, external and independent of social actors concerned with their existence (Saunders et al., 2009; Bryman and Bell, 2007). This study assumes that a phenomenon such as compliance with the CCCG is an external reality that exists in a social world composed of different realities, laws and propositions. This view emphasises the formal and structural aspects of organisations in responding to the context in which they operate, rather than emphasising their beliefs, values and culture.

Second, the epistemological assumptions of the positivist paradigm better match the assumptions that this study already has regarding what constitutes knowledge and how knowledge can be gained. This study assumes that a phenomenon such as compliance with the CCCG, as a social reality, can be observed independently searching for regularities and causal relationships between this phenomenon and other elements of the phenomenon under study to conclude with õlaw-like generalisations similar to those produced by the physical and natural scientistsø (Remenyi et al. 1998: p.32).

Third, it enables use of the adopted theories (e.g. agency theory and contingency theory) to address the research problem and develop hypotheses. Besides, observing the phenomenon by means of questionnaires, content analysis and archive data, can lead to production of credible data that can be used in testing the developed hypotheses.

Fourth, positivist approach is relevant to the research topic and objectives, as this research attempts to develop empirically-based theoretical framework of VBM practices to explain these practices through identifying general and significant relationships between VBM practices and environmental and organisational factors, which can be generalised to a large number of organisations. The positivist paradigm

enables the researcher to test the adopted theory against a unique and large sample of observations that makes findings more generalisable to the entire population of study.

Fifth, the theoretical framework developed in the current study is based on contingency theory. It has been argued that the positivist paradigm is an appropriate and commonly used paradigm in contingency theory research within the management accounting discipline (Otley, 1984; Ryan et al., 2002).

Sixth, the current study is multidisciplinary and contains constructs (e.g. VBM, CG and CE) from different disciplines (e.g. management accounting, CG and entrepreneurship). The literature suggests that the positivist paradigm is dominant in VBM (Lueg and Schaffer, 2010), CG (Clark, 2004) and CE (Rauch et al., 2009) literature.

Seventh, to the best of the researcher's knowledge no previous studies have used the positivist paradigm in addressing the EG framework. Only a few studies (Connell, 2004; Busco et al., 2005) have used the interpretivist paradigm based on case studies. Therefore, generalisable findings in this area of research are needed using the positivist paradigm.

4.3   Research Methodology

After identifying the research paradigm, it is important to decide the research strategy or methodology, which corresponds to the philosophical assumptions of the adopted paradigm (Collis and Hussey, 2009). A number of appropriate research methodologies can be used within the positivist paradigm such as: experiment, survey and longitudinal studies (Collis and Hussey, 2009; Saunders et al., 2009).

In line with the positivist approach adopted in the current study and similar to most of the management accounting studies that are based on contingency theory (Ryan et al., 2002), this study adopts a cross-sectional survey methodology for a large number of companies, to test the study hypotheses permitting a greater generalisability of the study findings. For practical reasons, including time limitation and getting access to confidential information of quoted companies, other methodologies such as longitudinal study and case study were not possible or efficient.

The survey is a common methodology in business and management research and is normally connected to the deductive approach (Saunders et al., 2009). It is also a

commonly used methodology for theory testing within the management accounting discipline (Van der Stede et al., 2007). The main purposes of using survey in management accounting research include description (discovering the characteristics of a population) and explanation (theory testing through investigating relationships among MAPs and other variables guided by theoretical expectations about how they are connected) (Van der Stede et al., 2007).

The popularity of surveys can be attributed to a number of reasons, including the possibility of collecting a large amount of data from a considerable population, in an economic way (Saunders et al., 2009). In addition, using a survey methodology allows more control over the research process, especially when sampling is used to generate results that can be applied to the entire population (generalisation), at a lower cost than collecting data from the entire population (Saunders et al., 2009).

An important reason for deciding a cross-sectional survey based on questionnaires in the current study is that the survey provides a balance between, and combines the advantages of, large sample analysis and clinical studies (Graham and Harvey, 2001; Ryan and Trahan, 2007), which can contribute to the VBM literature. The state of art in VBM literature indicates that large sample analysis is a dominant methodology compared with other methodologies such as survey, case study and longitudinal study (Lueg and Schaffer, 2010). The majority of these studies use secondary data (basically databases and financial statements analysis) to identify VBM adopters based on reported value-based measures (such as EVA and CFROI) (Lueg and Schaffer, 2010). This methodology has been criticised as the õtop performers in terms of stock returns may accidentally have a high key financial ratio without even having VBM fully implementedö (Lueg and Schaffer, 2010: p. 18). This methodological misspecification can explain the inconclusive results of these studies (Lueg and Schaffer, 2010).

The few in-depth case studies conducted indicate that VBM practices are complicated and implementing VBM varies significantly across organisations in terms of the comprehensiveness and the organisational level of implementation (Malmi and Ikaheima, 2003). While these studies provide insights into the sophisticated nature of VBM practices, their findings lack generalisability due to the limited number of companies in these empirical studies. Therefore, this study uses the survey methodology for more generalisable findings using questionnaires in an attempt to

capture the sophistication of VBM practices, through developing a scale for VBM implementation that takes into consideration the comprehensiveness and the organisational level of implementation.

However, cross sectional studies in general are challenged by selecting a large sample representative to the entire population and isolating the studied phenomenon from other confounding factors (Collis and Hussey, 2009). The generalisability of findings is bounded by selecting a representative sample for the entire population (Saunders et al., 2009). Selecting the study sample and the data collection method is critical for the success of cross-sectional studies (Saunders et al., 2009). Therefore, the following section will discuss in detail how this study addresses this problem.

4.4   Research Context

Careful site selection is critical for successful theory testing in the field (Anderson and Widener, 2007). õSelecting a site suitable for theory testing occurs simultaneously with the practicalities of ensuring that data exist to allow the proposed hypotheses to be testedö (Anderson and Widener, 2007: p.329). Therefore, researchers who are engaged in a quantitative field research study must consider various issues when selecting an appropriate site including data availability, the appropriateness of companies for the study, appropriateness of the unit of analysis and whether adequate statistical power is used in testing the theory (Anderson and Widener, 2007).

To address the research questions of the current study the UK was selected to conduct the empirical study. The UK is considered an appropriate context to the empirical study for a number of reasons.

First, given the research problem that rests on the existence of the agency problem, as a result of the separation of ownership and control, the UK business environment is a good example where the agency problem is persistent. õAlthough the ownership structure underlying the traditional agency problem was prevalent in the USA, the situation was extremely similar in the UK, where share ownership flourished following the introduction of the Joint Stock Companies Act of 1844 and the Limited Liability Act of 1855ö (Solomon, 2010: p. 5). According to Florence (1961), both the UK and the USA share agency problems in common, where two-thirds of large companies were not controlled by their owners.

Second, while the VBM approach was originated under the Anglo-American (Anglo-Saxon) system of CG, most of the VBM studies have been conducted in the USA and very little is known about its application in the UK. Though there are some similarities between the USA and the UK, significant differences still exist such as the regulatory framework of CG and the listing rules (Aguilera et al., 2006), organisational and cultural differences (Hofstede, 2001), the concentration of institutional ownership and the balance of insiders and outsiders in board structures (Short et al., 1999). These differences may make the results of empirical studies conducted in the US not applicable to the UK (Short et al., 1999).

Third, the UK has one of the largest and most developed capital markets in the world, with a large number of companies listed in the LSE. This provides a good opportunity to assess VBM and governance practices in these companies.

Fourth, the UK is generally recognised as a world leader in CG reforms (Solomon, 2010). Unlike the regulated (rules-based) approach adopted by the US to CG reforms, a more principles-based approach has been adopted in the UK to persuade companies to comply more in substance than in form (Solomon, 2010). The flexibility in compliance with the CCCG permits different levels of compliance with the code provisions to take place among companies. This variation in level of compliance enables capturing different levels of CG practices to be related to other constructs in the theoretical model.

Fifth, the lack of empirical evidence in general, and the UK in particular, regarding VBM, CG and CE practices is an important motivation for conducting the empirical study in the UK.

Sixth, for practical reasons, as the researcher is already based in the UK, it is easier to administrate the empirical study and to be aware of the country's legislation, culture and business environment.

4.4.1 Research Population

A population is "the universe of units from which the sample is to be selected" (Bryman and Bell, 2007, p. 182). The population for this study is the medium and large quoted non-financial companies in the UK. Only medium and large companies (more than 50 employees) were selected, as small companies (up to 50 employees) are unlikely to adopt sophisticated MAPs or PMS such as VBM. In addition, VBM

implementation is very costly, time consuming and most companies that adopt VBM employ consultants and invest heavily in education and training (Arnold, 2000; Boulos et al., 2001; Starovic et al., 2004). Therefore, the literature suggests that the larger the company size, the more likely the company to utilise more sophisticated PMS (e.g. Abdel-Kader and Luther, 2008).

Only quoted companies are selected because the underlying assumption of a VBM approach (the focal construct in this study) is that maximising shareholder value is the ultimate objective of a company. Therefore, quoted companies with publicly held shares are the relevant form of companies to adopt this approach. Financial companies were excluded due to the special nature of the financial sector as a highly regulated sector, especially after the latest global financial crisis and reform.

4.4.2 Sampling

Sampling is a good alternative to a census when it is unfeasible to survey the entire population due to budget or time constraints (Saunders et al., 2009). A sample is õthe segment of population that is selected for investigationö (Bryman and Bell, 2007, p. 182). Two main sampling techniques can be used, probability (representative) sampling and non-probability (judgemental) sampling (Bryman and Bell, 2007; Saunders et al., 2009).

A probability sample is õa sample that has been selected using random selection so that each unit in the population has a known chance of being selected...., the aim of probability sampling is to keep sampling error to a minimum õ(Bryman and Bell, 2007: p.182). Consequently, it is possible to answer research questions and achieve research objectives based on statistical estimates to the characteristics of the population from the probability sample (Saunders et al., 2009). Different forms of probability samples can be used such as simple random, systematic, stratified and cluster samples (Saunders et al., 2009).

A non-probability sample õis a sample that has not been selected using a random selection method, essentially, this implies that some units in the population are more likely to be selected than othersö (Bryman and Bell, 2007: p. 182). Therefore, the findings of non-probability samples are less generalisable to the population (Saunders et al., 2009). Different forms of non-probability samples can be used such as quota, purposive, snowball, self selection and convenience samples (Saunders et al., 2009).

Because of the lack of information available from companies about the characteristics of their PMSs and the difficulty of getting access to this confidential information in large quoted companies, this study used a convenience sample of companies who positively responded to the survey questionnaire. However, the survey has targeted the entire population of the study and followed the Total Design Method (TDM) suggested by Dilman (2007) to improve the response rate and obtain a representative sample to the entire population.

After identifying the research population it is important to identify the sampling frame. Sampling frame is õthe listing of all units in the population from which it is selectedö (Bryman and Bell, 2007: p. 182). Having a complete and accurate list of population is crucial for getting a representative sample (De Vaus, 1993). In the current study the FAME database was used to identify the list of all companies in the population. The list included all medium and large (more than 50 employees) non-financial quoted companies that are incorporated in the UK and listed in the LSE. In addition, the details of the key informants (Chief Financial Officers CFOs) in these companies, including their names, titles and addresses were obtained from the FAME database. To make sure that the information provided in FAME is accurate, the information was double checked and updated with the information available from the companiesø websites.

4.5   Data Collection Methods

Questionnaires and interviews are the two main data collection methods that are commonly used in positivist studies in general and within survey methodology in particular (Collis and Hussey, 2009). Often, questionnaires õare used to collect data that can be tied to established constructs that are relatively easy to communicate, while interviews allow for broader coverage of concepts that are ill-defined or difficult to explicateö (Anderson and Widener, 2007: p.335).

To answer the research question, the researcher can either use a single data collection method and matching analysis techniques (mono method), or more than one data collection method and analysis technique (multiple methods) (Saunders et al., 2009). According to Ittner and Larcker (2001), using multiple data sources can help to provide a consistent body of evidence that increases the readerøs confidence in the results.

Given the complexity of the theoretical model in this study and the large amount of data required to test the hypotheses, using one method for data collection was not practical. Therefore, this study adopts multiple methods for data collection. The main method used for data collection in this study was a postal questionnaire, to gain confidential data which are not published or available from other sources, such as the characteristics of PMSs, perceived performance and some contingency factors (uncertainty, strategy and decentralisation).

However, there is a limit to the number of questions to be included in any questionnaire to obtain reasonable responses, which is one of the limitations of this method (Saunders et al., 2009). Therefore, secondary data (archive data) were used to complement the data collected from the questionnaire for the responding companies. The secondary data were collected from three databases (FAME, Thomson One Banker and DATASTREAM), including variables such as company size measured in number of employees, Total Shareholder Return (TSR) and Beta. Further, due to the lack of information about compliance with the CCCG, content analysis was used to identify the level of compliance with the CCCG for each of the corresponding companies. More details about the questionnaires and the content analysis are discussed in the following sections.

4.5.1 Questionnaire

The questionnaire is one of the most commonly used data collection methods within the survey methodology, as each respondent answers the same set of questions provided in an efficient way from a large sample before conducting quantitative analysis (Saunders et al., 2009). In addition, it is cheaper and quicker to conduct, more convenient for participants than interviews, and allows respondents to answer questions freely, without the potential of interviewer bias (Bryman and Bell, 2007).

Therefore, this study adopted the self-completion questionnaire method for data collection to achieve the research objectives which require data from a large number of companies. Postal questionnaires were selected for this study, as it is more formal and relevant, especially when the target key informants are senior managers in quoted companies.

4.5.1.1 Constructing the Questionnaire

Designing and constructing a good questionnaire is not an easy task, as the researcher needs to make sure that the questionnaire accurately collects all the required data and

achieves the research objectives, especially as data ise collected only once (Saunders et al., 2009). The design of the questionnaire also has a significant influence on the response rate, validity and reliability of the collected data (Saunders et al., 2009). Some strategies are recommended to improve response rates, validity and reliability, including õcareful design of questions, clear and pleasing layout of the questionnaire, lucid explanation of the purpose of the questionnaire, pilot testing, carefully planned and executed administrationö (Saunders et al., 2009: p.362).

Therefore, a considerable effort was exerted in selecting the appropriate measures for constructs, designing and pre-testing the questionnaire used in this study. The final draft of this questionnaire is designed for this study in six pages (A4 sized), including the front and back covers. According to Saunders et al. (2009), the acceptable length of self administrated questionnaire ranges from four to eight A4 pages. The shorter the questionnaire the better the response rate, given the salience of the topic (Bryman and Bell, 2007). The questionnaire comprises 10 questions in three sections. The questions of the first section cover the characteristics of the companyøs PMS to identify the level of VBM implementation. The questions of the second section cover some contingency factors (uncertainty, strategy and decentralisation), CE and the perceived performance. The last section covers some personal information. For more details about the questionnaire please see Appendix 1.

4.5.1.2   Question Types and Format

Two main types of questions are commonly used in the questionnaire: open questions and closed questions (Saunders et al., 2009). However, closed questions, which permit choosing from predetermined answers, are commonly used in the positivist approach (Collis and Hussey, 2009). Closed questions are õquicker and easier to answer, as they require minimal writing. Responses are also easier to compare as they have been predeterminedö (Saunders et al., 2009: p.375).

In this study most questions are closed. A few open questions were used taking the form of õothers (pleases specify)ö at the end of some questions (e.g. questions 1, 2, 3, 4 and 6), to give respondents the chance to express their opinions or to use their own words (Collis and Hussey, 2009), should the list of answers not be inclusive. Closed questions can be constructed using different formats; however, the questionnaire developed for the current study mostly used rating questions (e.g. questions 1, 2, 7, 8 and 11) and some category questions (e.g. questions 3, 4, 5 and 6).

Rating questions are commonly used in questionnaires for opinion data collection and õmost frequently use the Likert-style rating scale in which the respondent is asked how strongly she or he agrees or disagrees with a statement or series of statements, usually on a four, five, six or seven-point rating scaleö (Saunders et al., 2009: p. 378). A seven-point Likert-scale was used in all rating questions to allow the respondents more choices and to add more sensitivity for the measurements (Roberts, 1999). The advantages of the rating questions include making economical use of the space through providing a number of different statements in one list, in addition to the ease of answering the questions by the respondent (Collis and Hussey, 2009). Rating questions in the questionnaire mainly use positive statements and some negative statements (e. g. question 10-n) to make sure that respondents read the statements carefully (Saunders et al., 2009).

Another variant of rating questions used in this study is the semantic differential rating scale (e.g. question 10), where õthe respondent is asked to rate a single object or idea on a series of bipolar rating scales. Each bipolar scale is described by a pair of opposite adjectives designed to anchor respondentsø attitudes towards serviceö (Saunders et al., 2009: p.378). The second type of question used in the questionnaire is category questions. They are designed in a way that makes each respondentøs answer fit only one category; however, the categories should be mutually exclusive and its number depends on the type of questionnaire (Saunders et al., 2009).

4.5.1.3   Questionnaire Layout

Questionnaire layout or design is important to achieve two objectives, which are reduction of non response and avoiding or reducing non-response error (Dilman, 2007). Therefore, much effort is needed to design the questionnaires in a way that makes reading questions and filling in responses easy (Saunders et al., 2009). The questionnaire layout should be attractive to persuade the respondent to answer the questions (Saunders et al., 2009). According to Dillman (2007), constructing good questionnaires is not only about questions, it is also about other important aspects, such as general appearance, clear instructions and ordering the questions.

Therefore, the questionnaire was printed out using high quality colour papers (A4), to make it more appealing and attractive to the respondents (Dillman, 2007). In addition, the printing was made on both sides of the page to make it look shorter (only three pages), which would motivate respondents to answer the questions (Dillman, 2007).

In addition, the matrix style for rating questions was used to save spaces (Saunders et al., 2009) and grid line format was adopted to make it easier for the reader to follow the questions. The message contained in the covering letter is an important determinant of the response rate (Dillman, 2007). Therefore, more attention was given to the covering letter design to gain the respondentøs interest in the survey. For instance, the Brunel University logo and name was printed in blue at the top right corner of the covering letter, followed by the title of the study and a summary of the studyøs objectives.

The second paragraph emphasised the importance of participation in the survey and offered sending a summary report of the findings as a motive for participation in the survey. The last paragraph assures the respondents that their answers or any information provided will be treated as strictly confidential and will be used only for academic purposes in the current study. The covering letter was personalised and individually signed, as recommended by Dilman (2007), to gain a better response rate. Additionally, the return address and researcherøs contact details were also included in the covering letter, to enable respondents to return the questionnaire or to contact the researcher for any questions.

4.5.1.4   Ethical Consideration

This study followed the Code of Research Ethics in Brunel University. According to this code, the university represented by the schooløs research ethics committee, does not provide researchers with any letters of support for data collection outside its premises without ethical approval. Accordingly, the research ethics forms were completed and submitted to the research ethics committee in Brunel Business School, to obtain ethical approval before starting the process of data collection.

The first step was reading the Universityøs Code of Research Ethics, which is available on the website of the Research Ethics Committee. The second step was downloading and completing the student part of the BBS research ethics form, which is available on U-Link. The third step was submitting the filled in forms, including the data collection plan to the research ethics committee via U-Link after being approved by the supervisor. In addition, the final version of the questionnaire was attached to the research ethics form.

Based on the answers to the questions in the research ethics form, the research ethics committee decides the appropriate form(s) that should be used by the researcher to

collect data. For instance, provided that human participation is needed in data collection, the researcher may need to use one of these forms:

1- Participant Information Sheet: all participants will need to receive written or verbal information about the nature of the research so they can provide consent. This sheet provides a template of such information and is only needed if the research involves direct data collection from people (e.g. survey). This sheet should be approved by the supervisor before disseminating it to potential participants and there is no need to get the participantsø consent to the research prior to receiving this information.

2- Participant consent form: the researcher will need to provide participants with a form to sign for consent for the following situations (or similar): long term research where you will be asking the same participants to take part more than one time; research in organisations with gatekeepers (e.g. schools and prisons); participants who do not have the capacity to give their consent (mentally disabled); when dealing with vulnerable participants (e.g., children, people with learning disabilities, your own students); or discussing sensitive topics (e.g. sexual activity, drug use).

3- Company confidentiality agreement form: only needed if your research involves a company that is concerned about information being public.

Consequently, the questionnaire and the research ethics form were reviewed and approved by the Research Ethics Committee, which decided that only the participant information sheet was required for potential respondents. This sheet (see appendix 2) was attached to the questionnaire and showed the title of the research, the researcherøs details, the purpose of the research, what it involves and, finally, a statement ensuring confidentiality and the voluntary nature of participation.

4.5.1.5   Questions Flow

Questions flow is as important as the layout in constructing a questionnaire. According to Dilman (2007), to acquire clear responses to questions the simplicity of wording and visual appearance of questions is very important. The questionnaire should start with the most important questions, especially the first question, taking into consideration what has been explained to the respondent in the covering letter (Dilman, 2007).

Therefore, the questionnaire starts with questions about the characteristics of PMS in companies to measure the level of VBM implementation, which is the most salient theme in this study. The least important questions, like personal details, are left to the end of the questionnaire and answering these questions is optional. In addition, questions which are related to one theme are grouped under one section and in a logical order, to make it easier to the respondents to answer these questions (Dilman, 2007).

4.5.1.6 Questionnaire Pre-testing Procedures

The pretesting of the questionnaire is an important step to obtain feedback about the questionnaire before starting an extended survey, for many reasons (Dilman, 2007). For instance, it helps to evaluate the procedures that should be made in the extended survey through sending some questionnaires to a small sample or several people to fill it out and discover whether any problems may arise. It helps also to detect any mistakes made in printing the questionnaire or any misunderstanding of questions by the respondents (Dilman, 2007). Moreover, it enables evaluating the questionsø validity and the likely reliability of the data that will be collected (Saunders et al., 2009).

This process requires exploring expert or a group of expertsø views on the representativeness and suitability of the questions to the purpose of the study, which allows suggestions to be made on the structure of the questionnaire before pilot testing or collecting the data from the final sample (Saunders et al., 2009). According to Dilman (2007), pre-testing the questionnaire normally starts with reviewing questions by knowledgeable colleagues and analysts. In the current study, the pre-testing procedures were performed in three stages.

In the first stage, feedback was received from ten PhD researchers in Brunel Business School on a first draft from the questionnaire. The first draft was distributed to PhD researchers from different academic backgrounds (e.g. accounting, marketing, information systems and management) to gain feedback from people with diverse expertise. Most of the PhD researchers had been involved in the process of constructing questionnaires for their research. The feedback received from the PhD researchers was very useful and resulted in some improvements in the question wording (such as rephrasing some questions, making them shorter and clearer) and

the questionnaire layout (such as using shaded grid lines) and the draft was amended accordingly.

In the second stage, a second draft from the questionnaire was sent to five staff members from different academic backgrounds in Brunel Business School. Useful feedback was received from the academic staff including for instance, changing the wording of some unclear statements; adding titles and several statements to the covering letter, adding clear instructions to the respondents in some questions, leaving more spaces between questions and adding õother, please specifyö to some questions. The second draft was amended accordingly and a third draft was prepared for the next stage.

In the third stage feedback was received from persons who are similar to the real participants in the target sample on a third draft from the questionnaire. Feedback was received from two chartered management accountants working in two large quoted companies based in London. Changes were suggested to the wording of some questions. The questionnaire was amended accordingly and a final version was prepared.

4.5.1.7 The Participants

Chief Finance Officers (CFOs) or controllers were used in the current study as key participants. CFOs or controllers are responsible for designing PMSs in their companies (Chenhall and Langfield-Smith, 1998). Therefore, they are likely to provide precise and useful information concerning the characteristics of PMSs and the level of VBM implementation in their companies. Furthermore, new regulations and laws have been extending the regulatory framework for CG to the finance function and CFOs. These regulations added to their responsibilities, reassessing the nature of governance and compliance with governance regulations (Busco et al., 2005).

4.5.1.8 Questionnaire Administration

After the questionnaire was designed, pre-tested and amended, it was ready for collecting data at the final stage (administrating questionnaire) (Saunders et al., 2009). However, the questionnaire on its own is only one part of a well-designed survey. õImplementation procedures have a much greater influence on response rates. Multiple contacts, the contents of letters, appearance of envelopes, incentives, personalization, sponsorship and how it is explained, and other attributes of the

communication process have a significantly greater collective capability for influencing response rates than does questionnaire designö (Dilman, 2007: p.149).

To improve the response rate this study follows the multiple contacts strategy, as a part of the Total Design Method (TDM) (Dilman, 2007). At the first stage, 750 questionnaires were posted to the CFOs of 750 companies in the UK (all the companies that meet the sample selection criteria) on 23 September 2010, using the first class Royal Mail service. Each questionnaire was sent with the covering letter, participant information sheet and prepaid return envelope. Within the four weeks, 82 valid responses and 30 non-valid responses had been received. The non-valid responses included unreachable participants and some companies that were out of scope (for example, no longer trading or not a quoted company), apologies for non-participation due to lack of time or company policy, and incomplete questionnaires.

At the second stage, after approximately four weeks the first follow up was posted to the non- respondents including a reminder letter dated 23 October 2010 (see appendix 3), a copy of the questionnaire and prepaid return envelope. As a result, during the following three weeks 25 valid responses were received and 14 non-valid responses as unreachable, refused to participate or ineligible.

At the third stage, a second follow up by phone was undertaken for the majority of the non-respondents to emphasise the importance of responding to the questionnaire. However, the majority of participants were not accessible or were unable to participate because of lack of time or company policy. However, after the second follow up only six valid responses were received taking the total response rate up to 15%. More details about the responding companies are presented in table 4.3.

According to Saunders et al. (2009), in a recent examination for response rates of business surveys, the response rate is as low as 10-20% for postal questionnaires. Therefore, the response rate in the current study is acceptable, given the recent trend of decreasing response rate to mail questionnaires (Saunders et al., 2009), and the difficulty of business and organisation surveys compared with other forms of survey (Dilman, 2007), especially when the participants are very busy peopole, such as senior managers in large public companies. Further, low response rate is argued to be less significant in studies based on convenience sample (Bryman and Bell, 2007).

Table 4.3: Response Rates

	First Request	Second and Third requests	Total
Usable Response	82	31	113
Refusal Response	12	8	21
Ineligibility (non-quoted/non-active/incomplete)	10	6	15
Unreachable (non-location/non-contact)	8	-	8
Total	112	45	157
*Response rate	11%	4%	15%

*Response rate = total number of responses/total number in sample - (ineligible + unreachable).

4.5.1.9   Responding Companies

The responding companies to the survey represent a wide range of business sectors. Table 4.4 outlines the classification of the responding companies into different sections, according to the standard industrial classification SIC (2007) in the UK.

Table 4.4: Sample Classification by Business Sectors

SIC (2007)	Section Name	Frequency	Percentage
A	Agriculture, forestry and fishing	5	4.4 %
B	Mining and quarrying	6	5.4 %
C	Manufacturing	21	18.6 %
F	Construction	11	9.7 %
G	Wholesale and retail trade, repair of motor vehicles and motorcycles	12	10.6 %
I	Accommodation and food service activities	4	3.5 %
H	Transport and storage	5	4.4 %
J	Information and communication	7	6.2 %
L	Real estate activities	15	13.3 %
M	Professional, scientific and technical activities	8	7.1 %
N	Administrative and support service activities	7	6.2 %
Q	Human health and social work activities	5	4.4 %
R	Arts, entertainment and recreation	3	2.7 %
S	Other service activities	4	3.5 %
	Total	113	100%

The profile of the responding companies reveals that the sample represents the main sections (sectors), except some sections that have been excluded from the population,

such as the financial sector. The sample does not represent some other sectors with special nature or regulations or small size such as education, electricity, gas and water supply, public administration and defence. In addition, no single sector dominates the sample. Therefore, the sample, to a large extent, is representative to the population. Table 4.5 and 4.6 outline the classification of the responding companies, according to company size and type of stock market.

Table 4.5: Sample Classification by Company Size

Company size	Number of Companies	
(Number of Employees)	Frequency	Percentage
Medium (51-250)	43	38.1%
Large (> 250)	70	61.9%
Total	113	100%

Table 4.6: Sample Classification by Stock Market

Stock Exchange	Number of Companies	
	Frequency	Percentage
Main Market	60	53%
AIM	53	47%
Total	113	100%

4.5.1.10   Checking Non-Response Bias

To be able to generalise findings from a survey, the sample should represent the entire population. However, non-response threatens the representativeness of samples and the generalisability of findings. õNon-response is a problem for any survey, because it raises the question of whether those who did respond are different in some important way from those who did not respondö (Churchill and Peter, 1995: p.662). Non-response may cause bias in findings as a result of respondentsø refusal to take part in the research or answer a question (Saunders et al., 2009). The best way to protect against non-response bias is minimising the non-response itself, through using appropriate procedures (Armstrong, 1977). However, non-response bias can be assessed using extrapolation methods, which assume that subjects who respond late are more like non respondents (Armstrong, 1977). The most frequently used type of

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extrapolation is carried over successive waves (follow-up procedures) of a questionnaire (Armstrong, 1977).

To assess the non-response bias, a t-test was used to identify whether there was any significant difference between early and late respondents in terms of some characteristics such as company size (number of employees), type of stock market, compliance with the CCCG and market-based performance (TSR). However, the results in table 4.7 show no significant differences between the two groups of respondents regarding any of these characteristics. Therefore, the results suggest that non-response bias is not applicable to the findings of the current study.

Table 4.7: Check for Non response Bias

Variables	Groups	N	Mean	Standard deviation	Standard error	Levene's test for equality of variance	
						F	Sig.
No. of Employees	Early respondents	82	13022	62266	6876.19	1.201	0.275
	Late respondents	31	7086	18400	3304.74		
Stock Market	Early respondents	82	.524	.502	.055	0.253	0.616
	Late respondents	31	.548	.505	.090		
Compliance	Early respondents	82	80.48	20.14	2.22	2.023	0.158
	Late respondents	31	79	24.20	4.34		
TSR	Early respondents	82	.429	1.09	.120	0.413	0.522
	Late respondents	31	.135	.555	.099		

4.5.2 Content Analysis

õContent analysis is an approach to the analysis of documents and texts (which may be printed or visual) that seeks to quantify content in terms of predetermined categories and in a systematic and replicable mannerö (Bryman and Bell, 2007: p.302).Though it is originally an approach to analyse documents and texts and not to generate data, it is commonly used as a research method because of its unique approach to analysis (Bryman and Bell, 2007). Furthermore, it is a flexible method so that it can be applied not only to documents and texts, but also to a wide range of media (Bryman and Bell, 2007).

Content analysis can be defined as õa research technique for the objective, systematic and quantitative description of the manifest content of communicationö (Berlson, 1952: p.18). The most important feature of content analysis is to have predetermined clear rules for the assignment of the material examined to categories, so that transparency in the assignment process is achieved and the analystøs bias is kept to a minimum (Bryman and Bell, 2007). In simple words, the content analysis is the process of applying the rules in questions in a systematic way (Bryman and Bell, 2007).

4.5.2.1 Documents and Unit of Analysis

As a result of the lack of information about the level of compliance with the CCCG in the quoted companies in the UK, this study uses content analysis to examine the level of compliance of the study sample. To achieve this objective the CG report, as a part of a companyøs annual report, was analysed as a main document to identify which provisions a company already complies with and which provisions are not. In addition, governance information available on a companyøs website was used in some situations when the disclosure in the CG report was not clear or sufficient. The CG report was used as a main document in the analysis because the listing rules in the LSE require CG disclosure within the annual report.

After identifying the documents used in the analysis it is important to identify the unit of analysis, which could be any of the following: word, sentence or page (Milne and Adler, 1999). However, the sentence has been selected as a unit of analysis, as it is far more reliable than the word and page size (Stiles, 2001).

4.5.2.2 Sampling

The sample used in the content analysis is the same sample used in the questionnaire survey. Therefore, the content of annual reports of all responding companies in the survey were analysed to complement the information provided in the questionnaire. The full annual reports (PDF) for the year ending 2010 were downloaded from the companiesø websites. The annual reports were selected for 2010, the period on which the survey was undertaken.

The sample used in the current study includes companies either listed on the Main Market of the LSE or listed on the Alternative Investment Market (AIM) of the LSE. However, the governance requirements are different in each category of companies. For instance, the listing rules of companies listed on the Main Market require these

companies to comply with the principles and provisions of the CCCG or to explain why they did not comply with any of its principles or provisions. A statement of compliance must be included in the annual report according to Paragraph 9.8.6 R of the Listing Rules (Combined Code, 2008).

AIM is a leading sub-market of the LSE for smaller and growing companies. AIM allows smaller companies to float shares within a more flexible regulatory system than is applicable to the Main Market. The most important feature of AIM is the simplified regulatory environment designed to fit smaller companies (Mallin and Ow-Yong, 2008). While compliance with the CCCG is mandatory for companies listed on the Main Market of the LSE, it is voluntary for AIM companies (LSE, 2010). However, compliance with the CCCG by AIM companies is broadly considered as good practice and has become expected, especially from larger AIM companies (Mallin and Ow-Yong, 2008; LSE, 2010). The main reason is the cost of full compliance with the CCCG, as for many AIM companies would outweigh the benefits to the average shareholder (LSE, 2010). Therefore, õsome organisations, notably the Quoted Companies Alliance (QCA) and the National Association of Pension Funds (NAPF), have produced guidelines which are designed to help AIM companies to understand how to achieve code compliance within the scope of resources available to them, both are based on the provisions of the codeö (LSE, 2010: p. 66).

AIM companies are required to include in their annual reports statement of how they achieve good CG practices (LSE, 2010). According to Rule 26 of the AIM Rules, õAIM companies should publish or make available on their website the terms and conditions of appointment of non-executive directors and the terms of reference of the audit committee, remuneration committee and, if appropriate, the nominations committeeö (LSE, 2010: p. 68).

4.5.2.3 Coding and Coding Schedule

Coding is a central stage in the content analysis process, on which two important elements should be designed, the coding schedule and the coding manual (Bryman and Bell, 2007). The coding schedule is the structure into which all the data relating to a coded item will be entered (Bryman and Bell, 2007). The coding manual is õa statement of instructions to codes that specifies that categories that will be used to

classify the text based on a set of written rules that define how the text will be classifiedö (Bryman and Bell, 2007: p. 312).

Because the sample comprises two different groups of companies with different compliance requirements two sets of coding schedules are used in the content analysis. The first schedule is used for companies listed on the Main Market (see table 4.8), based on the provisions of Section 1 from the CCCG issued in 2008, the applicable version to the period of the study (see appendix 4 for more details). The listed companies are required to provide a statement of how they apply the main principles set out in Section 1 of the Combined Code, in a way that would assist shareholders to evaluate how the principles have been applied (Combined Code, 2008).

The second schedule is used for AIM companies (see table 4.9), based on the QCA guidelines published by the QCA in 2007, the applicable version to the period of the study (see appendix 5 for more details). These guidelines are basically adapted from the CCCG to suit the small companies in AIM (QCA, 2007).Though compliance with these guidelines is not compulsory for AIM companies, shareholders expect these companies to comply with most if not all these guidelines to ensure that they are properly governed (QCA, 2007).

The coding schedule and manual for each set are combined in one table as all provisions in the schedule have the same categories (compliance/non compliance). The coding process requires identification of decision rules or coding rules. The coding rules in this study are very simple and straightforward. Each provision is coded as either 0 or 1 in case of non-compliance or compliance with the provision, respectively.

When the coding process is completed, the codes are added up for each company to obtain the total compliance score of this company. The maximum compliance score, in case of full compliance with all the provisions, is 49 for companies listed on the Main Market and 29 for AIM companies. Finally, to make the compliance scores comparable between companies in the two markets, a compliance percentage is calculated for each company. The compliance percentage relates the actual compliance score of each company to the maximum total score in case of full compliance.

Table 4.8: Coding Schedule of Compliance with the CCCG

No.	Features of the Provision	Code	Categories
1-49		0/1	0 = No Compliance
			1= Compliance with
			Provision
Maximum Total Score		49	

Table 4.9: Coding Schedule of Compliance with the QCA Guidelines

No.	Features of the Provision	Code	Categories
1-28		0/1	0 = No Compliance
			1= Compliance with
			Provision
Maximum total score		28	

4.5.3 Secondary Data

Secondary data analysis is õthe analysis of data by researchers who will probably not have been involved in the collection of those dataö (Bryman and Bell, 2007: p. 326). Secondary data include both raw data and published summaries, which have been collected by other organisations (e.g. consumer research organisations), government departments and quality daily newspapers (Saunders et al., 2009).

In certain types of studies, such as those including national or international comparisons, secondary data are primarily used as the main source to answer the research questions (Saunders et al., 2009). However, most research questions are answered using some combination of secondary and primary data (Saunders et al., 2009). Secondary data offer high quality data at low cost and less time for data collection (Bryman and Bell, 2007). However, some problems may confront researchers using secondary data such as data complexity, lack of familiarity and control over data quality (Bryman and Bell, 2007).

Different types of secondary data can be used in research, such as documentary secondary data and survey-based secondary analysis or both (Saunders et al., 2009). The current study uses archive data in databases such as (FAME, Thomson One Banker and DataStream). FAME and Thomson One Banker databases were used to

obtain some data (e.g. company size) regarding the participating companies in the survey for the financial year ending 2010. The two databases were used to complement each other should the data not be available in one, and as a check where data are available in both. Data available in only one database were checked against the company annual report to ensure accuracy and reliability. DataStream was used to collect data related to the market-based performance (e.g. TSR) for the year ending to 2010, using the DataStream Return Index.

4.6 Statistical Techniques

The field of management accounting research has recently witnessed a significant development in using multiple disciplinary perspectives and methods to examine a wide range of research topics (Luft and Shields, 2007; Henri, 2007). However, these developments require better model specification that unequivocally represents relationships derived from the theory being tested (Ittner and Larcker, 2001) and more methodological rigour in instrument validation and model testing (Shields and Shields, 1998; Ittner and Larcker, 2001; Chenhall, 2003).

One of the advances in statistical techniques used to enhance theory development and testing is Structural Equation Modelling (SEM) (Hair et al., 2010). SEM has been used more frequently in recent business research (Henri, 2007). Therefore, many studies in the field of management accounting (e.g. Shields et al., 2000; Ittner and Larcker, 2001; Smith and Langfield-Smith, 2004; Henri, 2007) have called for more use of Structural Equation Modelling (SEM) to õprovide simultaneous tests of measurement reliability and structural relations, which may overcome some of the limitations that have been levelled at the way that management accounting has used more traditional statistical techniquesö (Smith and Langfield-Smith, 2004: p.49).

However, very few studies in the field of management accounting (e. g. Sheilds et al., 2000; Van der Stede, 2000, 2001; Davila, 2005) have used SEM compared with other disciplines in the social sciences (Smith and Langfield-Smith, 2004). The low use of SEM in management accounting research has been attributed to the lack of awareness with the technique, the tradition of strict confirmatory approaches to research design and model testing and the large sample required to apply SEM (Smith and Langfield-Smith, 2004). In an attempt to respond to the increasing number of calls for using SEM in testing models in the management accounting research, this study adopts SEM to test the conceptual model developed in the current study.

4.6.1 Structural Equation Modeling

SEM was first used in marketing research in the early 1980s, but recently, its application has become quite common (Hair et al., 2011a). It can be defined as õa set of multivariate techniques that allow for the simultaneous study of the relationship between directly observable and/or unmeasured latent variables, while incorporating potential measurement errorsö (Henri, 2007: p. 76). It is remarkably useful in developing and testing theories that contain multiple equations comprising dependence relationships, where a hypothesised dependent variable becomes an independent variable in a subsequent dependence relationship (Hair et al., 2010). None of the other multivariate techniques (e.g. multiple regression, factor analysis, analysis of variance and discriminant analysis) permit testing both measurement prosperities and the main theoretical relationships in one technique (Hair et al., 2010).

Unlike traditional methods of data analysis (e.g. multiple regression and pathway analysis), SEM allows estimating the multiple and interrelated dependent relationships between variables simultaneously and estimating the measurement error for the latent variables involved in these relationships (Smith and Langfield-Smith, 2004; Hair et al., 2010). SEM addresses the major limitations of multiple regression analysis in theory development and testing including the free-error measurement of constructs and the inability to test the interrelated dependent relationships between variables simultaneously (Smith and Langfield-Smith, 2004). While path analysis addresses the second limitation through incorporating sets of relations in the analysis, it has at least two limitations (Smith and Langfield-Smith, 2004). Path analysis, as multiple regression, assumes unidirectional flow of relations between variables and fails to examine reciprocal relations between variables. In addition, path analysis does not adjust the coefficient of independent variables for estimated measurement error.

The measurement error is the degree to which the measured variables do not exactly describe the latent variable of interest (Hair et al., 2010). Potential sources of measurement errors range from simple errors in data entry to construct definition, choice of inappropriate set of measures of a latent variable and different interpretations between the researcher and respondent (Smith and Langfield-Smith, 2004; Hair et al., 2010). However, failing to account for the measurement error can lead to bias in the estimate of the regression coefficients for both independent and dependent variables (Smith and Langfield-Smith, 2004; Hair et al., 2010).

One of the important features of SEM is that it includes both a measurement model and a structural model. While the measurement model identifies relations between observed variables and latent variables, the structural model tests relationships between latent variables, and incorporated identified measurement error variances (Smith and Langfield-Smith, 2004). The measurement model utilises the confirmatory factor analysis in identifying the loading of each observed variable on the latent variable and the reliability of the measurement of each latent variable (Smith and Langfield-Smith, 2004). The structural model utilises regression analysis to test the hypothesised relationships between latent variables with explicit recognition of the error associated in measuring the observed variables (Smith and Langfield-Smith, 2004). Similar to path analysis, a path diagram can be used to show the relations in the structural model (Smith and Langfield-Smith, 2004). In this way, SEM comprises the features of factor analysis, regression analysis and path analysis in one technique.

However, SEM can be regarded as a family of techniques (Smith and Langfield-Smith, 2004), including covariance-based SEM (CB-SEM) and variance-based SEM or Partial Least Squares SEM (PLS-SEM). The main characteristics and differences between the two streams will be discussed in the following section.

4.6.2 Comparison between CB-SEM and PLS-SEM

SEM, for many academics, is equivalent to implementing CB-SEM analyses using well-known software, such as AMOS and LISREL (Chin, 1998; Hair et al., 2011a). However, SEM includes another unique and very useful but less popular approach, which is PLS-SEM (Hair et al., 2011a). Though both techniques share the same roots, previous research, especially in marketing, focused principally on CB-SEM (Hair et al., 2011b).

õPLS-SEM is a causal modelling approach aimed at maximising the explained variance of the dependent latent constructs. This is contrary to CB-SEMøs objective of reproducing the theoretical covariance matrix, without focusing on explained varianceö (Hair et al., 2011a: p.139). The main focus of CB-SEM is on estimating a set of model parameters making the difference between the theoretical covariance matrix and the estimated covariance matrix at minimum (Hair et al., 2011a).

Conversely, PLS-SEM aims at predicting the values of latent variables that minimise the variance of all dependent variables (Chin, 1998). In other words, the main objective of CB-SEM is to use the model for explaining the covariance of all the

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indicators; however, under PLS-SEM the main objective is obtaining parameter estimates based on the ability to minimise the residual variances of dependent variables (latent and observed) (Chin, 1998).

CB-SEM model estimation requires a set of assumptions to be satisfied, such as the multivariate normality of data and large sample size (Hair et al., 2011a). However, if these assumptions are not applicable or the research objective is prediction rather than confirmation of structural relationships, PLS-SEM is the preferred method of analysis because of the minimal demands on measurement scales, sample size and residual distributions (Chin, 1998; Hair et al., 2011a).

Table 4.10: Rules of Thumb for Choosing between CB-SEM and PLS-SEM

Criterion	CB-SEM	PLS-SEM
Theory	Strong	Less developed
Research Goals	Theory testing and confirmation	Theory development and prediction
Sample Size	Large (Minimum 5-10 times the number of indicators)	Small (Min.10 times the largest number of structural paths directed at a reflective construct)
Distributional Assumption	Parametric (normal distribution)	Non-parametric (free distribution)
Measurement Model	Basically reflective constructs. Large number of indicators per construct (at least 3)	Reflective/formative constructs. Small and large number of indicators per construct (1 or more)
Structural Model	Less complex	Complex (many constructs and many indicators)
Global Goodness of Fit measures	Yes	No (new global measures were suggested but not recommended)

Source: Adapted from Hair et al. (2011a, p. 144)

In comparison with CB-SEM, PLS-SEM is more robust when there are identification issues; it can handle very small, as well as very large samples, and readily integrates formative, as well as reflective constructs in the model (Hair et al., 2011b). Unlike

CB-SEM, PLS-SEM avoids some critical problems, such as inadmissible solutions and factor indeterminacy (Fornell and Bookstein, 1982; Chin, 1998). This is mainly because the iterative algorithm used in PLS-SEM comprises a series of ordinary least squares, therefore, identification is neither a problem for recursive models nor does it assume any form of distribution for measured variables (Chin, 1998).

According to Hair et al. (2011b), most researchers, including the founders of CB-SEM and PLS-SEM (Joreskog and Wold, 1982) regard the two approaches to SEM as complementary because the weaknesses of one approach are the strengths of the other and none of the approaches is superior to the other. Rather, the choice between the two approaches depends on the research objective, sample size, model complexity and data characteristics (Hair et al., 2011b). For instance, õwhen CB-SEM assumptions are violated with regard to normality of distributions, minimum sample size, and maximum model complexity, or when related methodological matters emerge.... PLS-SEM is a good methodological alternative for theory testingö (Hair et al., 2011a: p.143).

Table 4.10 illustrates the rules of thumb that can be used to choose between the two approaches. The current study used PLS-SEM as a main approach for data analysis for the following reasons: the complexity of the theoretical model being tested, the relatively small sample size given the complexity of the model and the number of indicators used, and violating the normality assumption in measuring some constructs.

4.6.3 PLS-SEM

According to Hair et al. (2011b), PLS-SEM was initially developed by Wold (1975) under the name NIPALS (Non-linear Iterative Partial Least Squares), and was extended further by Lohmoller (1989), as an alternative to CB-SEM that focuses on prediction, meanwhile the requirements of data distribution and specification of relationships are relaxed. Though PLS-SEM is less popular than CB-SEM, its application has recently expanded in marketing research and other business disciplines (Henseler et al., 2009). The increasing application of PLS-SEM can be partly attributed to the recent improvement in the technique itself (Hair et al., 2011b), such as analysing moderating effects (Henseler and Chin, 2010), segmentation techniques such as Finite Mixture Partial Least Squares (FIMIX-PLS), and non-linear effects (Rigdon et al., 2010).

Despite the increasing popularity of PLS-SEM in other disciplines, very few studies in management accounting research utilise PLS-SEM. In two surveys regarding the application of SEM (Smith and Langfield-Smith, 2004; Henri, 2007) in management accounting research, only five studies (Ittner et al., 1997; Vandenbosch, 1999; Anderson et al., 2002; Chenhall, 2004, 2005) used PLS-SEM during the period from 1980 to 2005. This is fairly surprising given the great advantages of PLS-SEM that seem to be tailor-made for management accounting research (Smith and Langfield-Smith, 2004).

PLS-SEM provides a good opportunity for statistical modelling to move forward without being restricted by large sample size, strong underlying theory and normally distributed data (Smith and Langfield-Smith, 2004). Obviously, there are many areas in management accounting research where theory is underdeveloped or models being tested are very complex, which makes PLS-SEM the appropriate technique for this type of research (Smith and Langfield-Smith, 2004). PLS-SEM is mainly designed for predicting causal relationships in situations of high complexity and low theoretical information (Smith and Langfield-Smith, 2004).

4.6.3.1 Overview of PLS-SEM

As the CB-SEM, the PLS-SEM comprises two components for testing models with latent variables, measurement (outer) model and structural (inner) model (Hair et al., 2011a). The measurement model relates observed (manifest) indicators to their own latent variables, while the structural model relates the endogenous latent variables to other latent variables, including exogenous latent variables (Tennhaus et al., 2005). Endogenous latent variables refer to variables that are explained by other variables through structural model relationships, while exogenous latent variables represent variables that are not explained by any of the model variables and do not have any structural path relationships pointing at them (Hair et al., 2011a).

The measurement model comprises the unidirectional predictive relationship between each latent variable (construct) and its associated observed measures (Hair et al., 2011a). Two possible forms of measurement models can be used in PLS-SEM, reflective and formative models. õReflective indicators are seen as functions of the latent variables and changes in the latent variable are reflected in changes in the indicator (manifest) variable.... In contrast, formative indicators are assumed to cause a latent variable, and changes in the indicators determine changes in the value of the

latent variableö (Hair et al., 2011a: p. 141). However, all indicators used in the current model are reflective, not formative, and the procedures followed in evaluating the reflective measurement models are used in this study. The PLS-SEM algorithm uses a two-stage approach in data analysis (Lohmoller, 1989; Hair et al., 2011a). In the first stage, the latent variablesø scores are estimated. In the second stage the outer weights and loadings are finally estimated (Hair et al., 2011a).

4.6.3.2 Assessing the Measurement Model

Before testing the structural model, the reflective measurement model should be first assessed in terms of reliability and validity. The literature suggests some important measures of reliability, such as internal consistency (composite reliability) and indicator (item) reliability (Hair et al., 2011a). Similarly, validity can be assessed through using nomoloigical, convergent and discriminant validity (Hair et al., 2011a). These measures will be discussed in detail in the measurement model analysis (chapter 5).

4.6.3.3 Assessing the Structural Model

As the main goals of PLS-SEM are predicting and maximising the explained variance in the latent endogenous variable, the primary criteria of evaluating the structural model should be R^2, path coefficients and the significance levels of path coefficients (Hair et al., 2011a). The significance of path coefficients can be assessed using resample techniques such as bootstrapping or jackknifing, as PLS-SEM puts no distribution assumption for the data used in the analysis. This study uses bootstrapping, as it is regarded as more efficient than jackknifing (Chin, 1998).

Further, assessing the structural model entails assessing its ability to predict the endogenous latent variables (Hair et al., 2011a). One of the important measures used in assessing the predictive relevance in a model is the Stone-Geisser Q^2 value (Geisser, 1974; Stone, 1974). This value can be calculated using the blindfolding technique, that omits part of the data in a systematic way and uses the resulting estimates in predicting the omitted part (Hair et al., 2011a).

Further, assessing the heterogeneity of observations is an important step in evaluating the structural mode. Failure to assess the heterogeneity of data risk damaging the validity of the PLS-SEM results as different parameters estimates may be obtained for different subpopulations (Hair et al., 2011a). Several tools have been developed in

PLS-SEM to assess the unobserved heterogeneity, such as FIMIX-PLS (Ringle et al., 2010).

In contrast with CB-SEM, there is no overall goodness of fit measure in the PLS-SEM, as its main objective is different from the CB-SEM (Hulland, 1999; Hair et al., 2011b). Some scholars introduced global measures of fit (e.g. Tenenhaus et al., 2004). However, these measures are not widely accepted and thought to be inconsistent with PLS-SEM assumptions and objectives (Hulland, 1999; Hair et al., 2011b).

4.6.3.4 PLS-SEM Software

While the basic algorithms used in PLS-SEM were developed in the 1970s, the first software packages such as LVPLS (Lohmoller, 1984) and PLS Path (Sellin, 1989) were not publically available before the 1980s (Temme et al., 2010). The limited use of PLS-SEM in the last few decades can be partly attributed to the lack of progress concerning the software's development in terms of availability, user-friendliness and methodological options (Temme et al., 2010).

However, this situation has recently changed and many alternative software solutions are now available to choose from, such as PLS-GUI, Visual-PLS, PLS-Graph, Smart PLS, SPAD-PLS (Temme et al., 2010). Moreover, each software package has different features in terms of requirements, methodology, options and ease of use (Temme et al., 2010). This study uses both Warp-PLS and Smart-PLS, as each software package has its distinguished features. Warp-PLS is the most recent available software package (Kock, 2011). It offers a number of features, which are largely absent from most, if not all PLS-based SEM software packages currently available (Kock, 2011):

1. It estimates p values for path coefficients automatically, instead of providing only standard errors or t values, and leaves the user to figure out what the corresponding p values are.
2. It estimates several model fit indices, which have been designed to be meaningful in the context of PLS-based SEM analyses.
3. It automatically builds the indicators' product structure underlying moderating relationships, and goes a little further. It shows those moderating relationships, related path coefficients and related p values in a model graph as they should be shown.

4. It allows users to view scatter plots of each of the relationships among latent variables (when they are connected through arrows in the model), together with the regression curves that best approximate those relationships, and save those plots as .jpg files for inclusion in research reports.

5. It calculates variance inflation factor (VIF) coefficients for latent variable predictors associated with each latent variable criterion. This allows users to check whether some predictors should be removed due to multicolinearity (this feature is particularly useful with latent variables that are measured based on only one or a few indicators).

However, Warp-PLS does not include tools for assessing predictive relevance (such as blindfolding procedures) or unobserved heterogeneity (such as FIMIX-PLS). These tools are embedded in the Smart-PLS software. Therefore, this software was used in the current study for double checking the results obtained by Warp-PLS and using both the blindfolding procedure and FIMIX-PLS.

4.7 Summary

This chapter discussed in detail the research philosophy and methodology underpinning the current study. After exploring the research paradigms and methodologies used in social sciences in general and accounting research in specific, the study adopted the positivist paradigm and the cross-sectional survey methodology to test the research hypotheses that were previously developed based on the theoretical model in the previous chapter. The chapter also addressed the key issues related to identifying the research context and population, sampling process, data collection using different methods (questionnaire, content analysis and archive data) and, finally, the proposed statistical techniques to be used in the data analysis (e.g. SEM).

Chapter 5

Measurement Model Analysis

5.1 Introduction

As explained in the previous chapter, the questionnaire was used as the main data collection method, complemented by content analysis and archive data analysis. Operationalising and measuring the theoretical constructs are crucial not only to achieve the research objectives, but also to ensure the validity and reliability of the results. However, measuring theoretical constructs normally entails measurement error, which threatens the validity of the used measures and the derived results. As failing to account for measurement error can lead to bias in the estimate of the regression coefficients for both independent and dependent variables (Smith and Langfield-Smith, 2004; Hair et al., 2010). Therefore, this study adopts PLS-SEM for data analysis to account for measurement error and to test relationships between constructs, taking into consideration the identified measurement error variances (Smith and Langfield-Smith, 2004). The measurement model used in PLS-SEM provides a thorough assessment of measurement reliability and validity, and control for measurement error.

This chapter provides a detailed discussion of the indicators used in measuring the theoretical constructs, the development of the measurement model, and the procedures used to assess the measurement model, including validity and reliability testing. The second section will briefly outline the procedures of developing and assessing the measurement model, including a five-step approach to develop and assess the measurement model. The third section will discuss in detail the selected measures for each of the research constructs based on prior studies, in addition to the process of assessing the reliability and convergent validity of each construct. The discriminant and nomological validity for all constructs will be assessed in the fourth and fifth sections respectively. Finally, a summary will be provided in the sixth section.

5.2 Procedures of Measurement Model Assessment

This study follows the two-step approach of the PLS-SEM, i.e. measurement (outer) model and structural (inner) model to test the theoretical framework. The measurement model identifies and relates the measures (indicators or observed variables) for each construct (latent variable) and assesses the validity and reliability of these constructs before estimating the structural model. According to Hair et al. (2010, 2011b), developing and assessing the measurement model comprises five main steps (see figure 5.1). These steps will be explained in detail in the following sections.

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│   Conceptual Definition and Assessing Content Validity of │
│                        Constructs                         │
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┌─────────────────────────────────────────────────────────┐
│         Assess the Unidimensionality of Constructs        │
│               (Exploratory Factor Analysis)               │
└─────────────────────────────────────────────────────────┘
                             │
                             ▼
┌─────────────────────────────────────────────────────────┐
│              Assess the Construct Reliability             │
│  (Item reliability, Cronbach's alpha and Composite reliability) │
└─────────────────────────────────────────────────────────┘
                             │
                             ▼
┌─────────────────────────────────────────────────────────┐
│               Assess the Construct Validity               │
│      (Convergent, Discriminant, and Nomological validity) │
└─────────────────────────────────────────────────────────┘
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                             ▼
┌─────────────────────────────────────────────────────────┐
│   Use Latent Variable Measurement Model with Indicators in │
│               Estimating the Structural Model             │
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Figure 5.1: Procedures of Measurement Model Assessment

Source: Adapted from Hair et al. (2010, 2011b)

5.2.1 Conceptual Definition and Content Validity

The conceptual definition identifies the theoretical foundation of a construct by defining the concept being represented in terms relevant to the research context (Hair et al., 2010). In academic research theoretical definitions should be derived from prior research that defines the spirit and nature of a construct (Hair et al., 2010).

Content (face) validity refers to the association of the measures (indicators) to be included in a construct and its conceptual definition (Hair et al., 2010). Content validity can be ensured õthrough ratings by expert judges, pre-tests with multiple subpopulations, or other meansö (Hair et al., 2010: p. 125). The objective of this process is to ensure that the selection of measures extends past empirical studies and also to include theoretical and practical considerations (Hair et al., 2010). Addressing the content validity of the constructs used in the current study, including the detailed conceptual definitions and measures adopted for each construct will be discussed in detail in section (5.3).

5.2.2 Assessing Construct Dimensionality

The underlying assumption of creating a summated scale of a construct comprising multiple indicators, as used in SEM, is that the indicators are unidimensional, which means that the indicators are strongly associated with each other and represent a single construct (Hair et al., 2010). The unidimensionality of a construct can be assessed using either Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA) (Hair et al., 2010). Factor analysis, in general, plays a crucial role in assessing the dimensionality of a set of indicators, by identifying the number of factors and the loading of each indicator on the factor(s) (Hair et al., 2010).

This study uses EFA to assess the unidimensionality of the theoretical constructs, using the software package of SPSS. The results of EFA will be refined or confirmed, using the measurement model assessment procedures in PLS-SEM, which can be used as a CFA. These procedures will be explained in more detail in the following two steps. EFA is conducted using the principal component method for each construct, as it considers the total variance including common, specific and error variances (Hair et al., 2010). In addition, the Varimax orthogonal rotation method is used, as in most cases the un-rotated solutions are not sufficient (Hair et al., 2010). Orthogonal rotation methods are more widely and frequently used compared to oblique rotation methods (Hair et al., 2010).

Communalities ($\times$ 0.5), Eigen values ($\times$1) and variance extracted ($\times$ 0.5) are used to identify the number of factors to be extracted for each construct (Hair et al., 2010). After running the EFA, items exhibiting low factor loadings < 0.40 and/or high cross-loadings > 0.40 and/or low communalities < 0.50 are removed (Hair et al., 2010). Factors are also assessed using the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy, the Bartlettøs test of sphericity and Cronbachøs alpha (Hair et al., 2010).

5.2.3 Assessing Construct Reliability

Reliability is an assessment of the extent of consistency between multiple measurements of a construct (Hair et al., 2010). Reliability also relates to õthe degree to which the measures provide consistent results if used in different studies or contexts.... the degree to which a scale is free from measurement erroröö (Cooper and Schindler, 1998, p. 171).

Reliability can be assessed using different methods (Hair et al., 2010). However, the most commonly used measure of reliability is internal consistency, which assesses the consistency among the multiple indicators used in measuring a construct (Hair et al., 2010). Internal consistency can be assessed using different measures, such as indicators reliability, Cronbachøs alpha and composite reliability. These measures can be explained as follows:

5.2.3.1 Indicator Reliability

Indicator (item) reliability is assessed by examining the loadings (correlations) of measures with their respective constructs (Hulland, 1999) or the standardised indicator loadings (Hair el., 2011b). This measure considers the correlation of an indicator to the summated scale score of construct and the correlation among indicators. While loadings of 0.5 or more is acceptable for exploratory studies (Hair et al., 2011b), the threshold of 0.7 or more is commonly used between researchers to assess the indicatorøs reliability (Hulland, 1999). Having loadings of at least 0.5 implies that 50% of the variance in the observed variable is due to the construct (Hulland, 1999).

5.2.3.2 Cronbach's alpha

Cronbachøs alpha is the most commonly used reliability coefficient that assesses the consistency among multiple-measures of a construct (Hair et al., 2010). In general, the lower acceptable limit for this coefficient is 0.70 (Hair et al., 2010). The minimum

acceptable level could be lowered to 0.6 (Hair et al., 2010) or 0.5 (Nunnally, 1978), especially in exploratory research (Hair et al., 2010).

However, Cronbach's alpha has been criticised for being sensitive to the number of indicators used in measuring a construct, i.e. the value of Cronbach's alpha increases with the increase in the number of indicators used in measuring a construct, even with the same degree of inter-correlation (Hair et al., 2010). Furthermore, it assumes that all indicators are equally reliable (Hair et al., 2011a). According to Hair et al. (2011), using Cronbach's alpha to assess reliability in PLS-SEM is not recommended; instead composite reliability measure is preferred.

5.2.3.3 Composite Reliability (Internal Consistency)

Composite reliability has been developed by Froner and Larcker (1981) and is used to assess the reliability of a construct that comprises a number of indicators. "Unlike Cronbach's alpha, composite reliability does not assume that all indicators are equally reliable, making it more suitable for PLS-SEM, which prioritises indicators according to their reliability during model estimation" (Hair et al., 2011a). Composite reliability values between 0.6 and 0.7 can be accepted in exploratory research and values between 0.7 and 0.9 are satisfactory in more advanced research (Hair et al., 2011a: p. 45).

5.2.4 Assessing Construct Validity

After ensuring conformance between the conceptual definition of a construct and its measures, and ensuring construct reliability, one final assessment of validity should be performed (Hair et al., 2010). Construct validity can be defined as "the extent to which a scale or set of measures accurately represent the concept of interest" (Hair et al., 2010: p. 126), or "the extent to which the construct is successfully operationalised in the research" (Abernethy et al., 1999, p. 8). Different forms of construct validity can be measured and empirically examined including convergent validity, discriminate validity and nomological validity (Hair et al., 2010).

Convergent validity confirms that each measure is correlated with other known measures of the same construct (Hair et al., 2010). Discriminant validity ensures that the measures used for each construct are sufficiently different and distinct from the other measures of other constructs (Hair et al., 2010). Nomological validity reveals whether the measures demonstrate the relationships shown to exist, based on theory or prior research (Hair et al., 2010). These forms of validity can be explained as follows:

5.2.4.1 Convergent Validity

Convergent validity assesses the extent to which indicators used in measuring a construct converge with each other in measuring that construct. Assessing the convergent validity is an important step when a construct is measured using multiple-indicators as õthe researcher should be concerned not only with individual indicator reliability, but also with the extent to which the measures demonstrate convergent validityö (Hulland, 1999: p.199).

Convergent validity can be measured using Average Variance Extracted (AVE), which should be × 0.5 to indicate a sufficient level of convergent validity (Hair et al., 2011a). Keeping the AVE, as high as 0.5 or more, means that a construct or latent variable explains at least half of its indicatorøs variance (Hair et al., 2011a).

5.2.4.2 Discriminant Validity

Discriminant validity assesses the degree to which measures of different concepts are distinct (Bagozzi, 1994, p. 20). According to Hair et al. (2011b), two criteria can be used to assess the discriminant validity: Fornell-Larckerøs criterion (Fornell and Larcker, 1981) and the cross loadings criterion (Chin, 1998).

Fornell-Larckerøs criterion requires the AVE for each construct to be higher than the squared inter-correlation between this construct and any other construct (Fornell and Larcker, 1981). Alternatively, comparison can be made between the square root of AVE for each construct and the inter-correlations with other constructs (Hair et al., 2010). The second criterion is cross loadings. According to Chin (1998), a latent construct exhibits satisfactory discriminant validity when the loadings of items used in measuring this construct are higher than their loadings with all the remaining constructs (cross loadings).

5.2.4.3 Nomological Validity

Nomological validity denotes the extent to which the summated scale of a construct makes accurate predictions of other constructs in a theoretically based model (Hair et al., 2010). To ensure the nomological validity of constructs, the researcher must propose theoretically supported relationships from prior research or accepted principles and then assess whether the developed summated scale has corresponding relationships (Hair et al., 2010). In other words, õnomological validity examines whether the correlations between the constructs in measurement theory make sense. Construct correlation can be useful in this assessmentö (Hair et al., 2010: p.691).

Nomological validity is different from content (face) validity. While face validity is established prior to any theoretical testing to ensure understanding of every construct's meaning or content before using measurement theory, nomological validity is tested by examining whether the correlations among the constructs in measurement theory make sense (Hair et al., 2010). Nomological validity can be tested using the correlation matrix between constructs measured by multiple-indicators developed in previous research (Hair et al., 2010).

5.2.5 Estimating the Structural Model

After checking the construct reliability and validity, and assessing the measurement model, a structural model can be estimated to test the structural relationships hypothesised in the theoretical model, providing the assessment of the measurement model provides satisfactory results. This step will be explained in detail in the next chapter.

5.3 Development and Assessment of the Measurement Model

This section presents in detail the instruments used in this study to measure the research constructs (VBM, contingency factors, CG, CE and organisational performance), and the procedures of assessing their reliability and validity.

5.3.1 VBM

A large number of previous studies (e.g. Stewart, 1991, 1994; Dodd and Chen, 1996; Grant, 1996; Chen and Dodd, 1997; Biddle et al., 1997; Lehn and Makhija, 1997; Bao and Bao, 1998; Ryan and Trahan, 1999, 2007; Young and O'Byrne, 2001; Lovata and Costigan, 2002; Athanassakos, 2007; Rapp et al., 2011) classify companies into two groups, namely VBM adopters and non-adopters, for the purpose of comparing their performance.

However, the results of some previous studies suggest that VBM practices are too complicated to be categorised into only two groups, i.e. VBM adopters and non adopters. For instance, companies can implement VBM differently in terms of the wide range of measures used, the comprehensiveness of the implementation process (all or part of the processes) and the depth of implementation (organisation-wide use or business unit use) (Malmi and Ikäheimo, 2003).

Therefore, some recent studies classify companies into more than two groups according to the VBM implementation stages, to capture the sophistication in VBM practices. For instance, Ittner et al. (2003) follow the Krumwiede's (1998) taxonomy and measure VBM implementation, through classifying companies into six categories (not considered, implemented and abandoned, considering, implementing now, used and used extensively).

5.3.1.1 Measures of VBM

Unlike previous studies VBM implementation is measured in the current study on a continuum, rather than a categorical measure, based on the level of VBM implementation in five main areas, as suggested by Cooper et al. (2001). The five implementation areas include: the company mission, formulating strategy and objectives, strategic and significant decisions, performance measurements, and management rewarding schemes.

Measuring VBM implementation on a continuum helps to capture the wide range of variation in VBM practices by assigning high scores for companies, which implement VBM comprehensively in different areas and at different organisational levels. Conversely, it assigns a lower score for companies which implement VBM less extensively or at a limited organisational scale. To capture the level of VBM implementation using the five main dimensions, the following measures are adapted from Cooper et al. (2001) and used in the current study (see table 5.1). These measures can be classified into five main dimensions.

The first dimension relates to prioritising the shareholder's interest compared to other stakeholders. This dimension contains only one measure, asking the respondents to rate the importance of shareholders to a company mission on a 7 point Likert-scale.

The second dimension relates to the importance of value-based measures to a company strategy and objectives. This dimension comprises three measures, asking the respondents to rate the importance of each of the following items (EP/EVA, CFROI and TSR) to the formulation of a company strategy and objectives on a 7 point Likert-scale. The average rating of these measures, ranging from 1 to 7, was used as the overall measure for the importance of value-based measures in formulating strategy and objectives.

The third dimension relates to the extent of using value-based measures in strategic and significant decisions, such as acquisition and investments.

Table 5.1: Measures of VBM

Construct	Dimensions	Dim. No.	Source	Measure No.	Measure Description	Scale
VBM	Mission	VM1	Cooper et al. (2001)	VM11	Importance of shareholders to a company mission	1-7
	Strategy and objectives	VM2	Cooper et al. (2001)	VM21	Importance of EP/EVA to a company strategy and objectives	1-7
				VM22	Importance of CFROI to a company strategy and objectives	1-7
				VM23	Importance of TSR to a company strategy and objectives	1-7
	Strategic decisions	VM3	Cooper et al. (2001)	VM31, VM32	Using DCF in strategic and significant decisions (corporate/business unit levels)	0-1
				VM33, VM34	Using EP/EVA in strategic and significant decisions (corporate/ business unit levels) respectively	0-1
				VM35, VM36	Using CFROI in strategic and significant decisions (corporate/business unit levels	0-1
				VM37, VM38	Using TSR in strategic and significant decisions (corporate/business unit levels	0-1
	Performance measurement	VM4	Cooper et al. (2001)	VM41, VM42	Using EP/ EVA in performance measurements (corporate/business unit levels respectively)	0-1
				VM43, VM44	Using CFROI in performance measurements (corporate/business unit levels respectively)	0-1
				VM45, VM46	Using TSR in performance measurements (corporate/business unit levels respectively)	0-1
	Management rewarding	VM5	Cooper et al. (2001)	VM51, VM52	Using EP/ EVA in rewarding managers (corporate/business unit levels respectively)	0-1
				VM53, VM54	Using CFROI in rewarding managers (corporate/business unit levels respectively)	0-1
				VM55, VM56	Using TSR in rewarding managers (corporate/business unit levels respectively)	0-1

This dimension comprises eight measures, asking the respondents to rate, on a 0-1 scale, the extent of using each of the following items (Discounted Cash Flow (DCF), EP/EVA, CFROI and TSR) in taking strategic and significant decisions at both corporate and business unit levels. The sum of ratings of these measures, ranging from 0 to 8, was used as the overall measure of the extent of using the value-based measures in strategic and significant decisions.

The fourth dimension relates to the extent of using the value-based measures in performance measurements. This dimension includes six measures, asking the respondents to rate, on a 0-1 scale, the extent of using each of the following measures (EP/EVA, CFROI and TSR) in evaluating and measuring performance at both corporate and business unit levels. The sum of ratings of these measures, ranging from 0 to 6, was used as the overall measure of the extent of using the value-based measures in performance measurement.

The last dimension relates to the extent of using the value-based measures in management rewarding schemes. This dimension contains six measures, asking the respondents to rate, on a 0-1 scale, the extent of using each of the following measures (EP/EVA, CFROI and TSR) in rewarding managers at both corporate and business unit levels. The sum of ratings of these measures, ranging from 0 to 6, was used as the overall measure for the extent of using the value-based measures in management rewarding schemes.

5.3.1.2   EFA of VBM

EFA is implemented to assess the unidimensionality of VBM, using the principal component method (see table 5.2). The initial results of the EFA of VBM indicate a low level of communality (less than 0.5) for VM1 (Importance of shareholders to the company mission) and VM2 (Importance of value-based measures to company strategy and objectives). As a result, VM1 and VM2 were removed in the first two rounds of the analysis respectively. A third round of analysis was performed using the remaining variables (VM3, VM4 and VM5).

The results of the EFA, as presented in table 5.2, confirm the unidimensionality of the VBM construct. One factor has emerged from this analysis, explaining 71.74% from variability in VBM. All loadings were high, greater than 0.40, ranging from 0.76 to 0.91. The Bartlett's test of sphericity (121.90, *p* Ö 0.05) and Kaiser's measure of

sampling adequacy (0.648) indicated that EFA is appropriate and within the acceptable levels (Hair et al., 2010).

Table 5.2: EFA of VBM

Measures	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlettøs Test (sig.)	Construct
VM3	0.743	0.862	2.152	71.74%	0.648	0.00	VBM
VM4	0.823	0.907					
VM5	0.586	0.765					

Excluding VM1 and VM2 for less communality with other measures can be explained as follows: while prioritising the shareholdersø interest in formulating the company mission and objectives is an essential pillar of the VBM approach, high rating of shareholder interest to a company mission does not necessarily mean that this company is adopting VBM. Many companies believe that other competing approaches and PMSs, such as balanced scorecard, are also consistent with this mission.

Furthermore, many companies may think that VBM can be implemented by simply prioritising the shareholdersø interest to the company mission and objectives without real change to the decision making and performance measurement process (Cooper et al., 2001). This explanation can be supported with the high mean (over the average) of VM1 and VM2, in comparison with other measures (VM3-VM5), which implies that companies highly rate the importance of shareholdersø interest to their missions, objectives and strategies than their ratings of using value-based measures in taking decisions, evaluating performance and rewarding managers.

5.3.1.3   Reliability of VBM

To assess the construct reliability of VBM, the indicator reliability was assessed by examining the outer loadings of the measures with their respective constructs using PLS-SEM. Exploring the results of indicator loadings in table 5.3 reveals that all measures have high reliability, as they highly load (greater than 0.7) on the VBM construct.

Table 5.3 Indicator Reliability of VBM Measures

Measures	Outer weight	Loadings	Construct
VM3	0.401	0.862	VBM
VM4	0.421	0.907	
VM5	0.356	0.765	

Further, to assess the construct reliability of VBM, Cronbach's alpha and composite reliability were calculated using PLS-SEM (see table 5.4). Cronbach's alpha was 0.781, indicating an acceptable level of reliability (Hair et al., 2010). Exploring the composite reliability value (0.815) in table 5.4 reveals that the VBM construct is internally consistent in its measurement and has satisfactory reliability (greater than 0.7). The results of the reliability tests in general suggest that VBM can be measured adequately using VM1, VM2 and VM3.

Table 5.4: Reliability Coefficients of VBM

Construct	Cronbach's alpha	Composite Reliability	Average Variance Extracted
VBM	0.781	0.815	0.597

5.3.1.4 Convergent Validity of VBM

To assess the construct validity of VBM the convergent validity of the VBM construct AVE was examined, which should be $\times$ 0.5, to indicate a sufficient level of convergent validity (Hair et al., 2011a). The results in table 5.4 reveal that the AVE of VBM (0.597) indicates a satisfactory level of convergent validity (AVE $\times$ 0.5). Discriminant validity and nomological validity will be assessed for all constructs at the end of this chapter.

5.3.2 Agency Conflicts

Agency conflicts stem from separation of ownership and control and the possible conflict of interests between principal (shareholder) and agent (management). Potential sources of agency conflicts include moral hazard (Jensen and Meckling, 1976), earning retention, risk aversion (Jensen, 1986) and time horizon (Healy, 1985). However, õmeasuring the agency conflicts in a firm is challenging because there

exists a variety of firm-specific situations where the managers have the incentives and the ability to engage in maximizing their own utilities at the cost of shareholders. Moreover, there is no widely accepted measure of agency conflictsö (Dey, 2008).

The literature suggests different variables to be used as a proxy for the magnitude of agency conflicts. For instance, Lovata and Costigan (2002) use risk, insider ownership and the interaction effect between insider ownership and company size as surrogates for agency conflicts in relation to the use of EVA as a performance measure. In the governance context, Dey (2008) suggests six variables to proxy for agency conflicts, namely company size, organisational complexity, volatility in operating environment measured by risk, insider ownership, leverage and free cash flow.

5.3.2.1   Measure of Agency Conflicts

This study operationalises the agency conflicts in terms of risk, to be measured using Beta (see table 5.5) as suggested by Lovata and Costigan (2002). Using risk as a surrogate for agency conflicts is justified as the increased level of risk makes it difficult for the principal to decide whether changes in shareholder value are related to agentøs actions or outside reasons, thus the need for monitoring becomes imminent (Bloom and Milkovich,1998; Lovata and Costigan, 2002). Beta is adopted in this study, as the most commonly used measure of the systematic risk that cannot be eliminated through diversification (Cooper et al., 2001). Beta is provided by the DataStream database through conducting a least squares regression between adjusted prices of the stock and the related DataStream market index.

Table 5.5: Measure of Agency Conflicts

Construct	Source	Measure no.	Description of the Measure
Agency Conflicts	(Cooper et al., 2001; Lovata and Costigan (2002)	AG1	Beta (Risk Measure)

None of the EFA, reliability and convergent validity tests have been performed for the construct of agency conflicts, as it has been measured using a single indicator. However, the discriminant and nomological validity of this construct, along with other constructs will be tested at the end of this chapter.

5.3.3 Company Size

Company size has been an important factor in explaining VBM implementation (Cooper and Petry, 1994; Ryan and Trahan, 1999), CG structure (Gompers et al., 2003) and CE (Rauch et al., 2009). Company size has been measured in the literature using different measures such as number of employees (Bruns and Waterhouse, 1975), total sales (Ryan and Trahan, 1999, 2007), total assets (Lovata and Costigan, 2002) and market capitalisation (Cooper et al., 2001).

5.3.3.1 Measure of Company Size

This study used the number of employees as a measure of company size (see table 5.6), as it is the most common measure of size in organisational research (Bruns and Waterhouse, 1975; Merchant, 1981, 1984; Ezzamel, 1990; Libby and Waterhouse, 1996). In addition, number of employees is an indication of organisational complexity. As the number of employees is a continuous variable and comprises a wide range of values, it has been transformed using the logarithm term to minimise the variation in this variable and to avoid violations of some statistical assumptions (such as normality) underlying the multivariate techniques (Hair et al., 2010).

Table 5.6: Measure of Company Size

Construct	Source	Measure no.	Description of the Measure
Size	(Bruns and Waterhouse, 1975; Merchant, 1981, 1984; Ezzamel, 1990)	SZ1	Log (Number of Employees)

None of the EFA, reliability and convergent validity tests have been performed for company size as it has been measured using a single indicator. However, the discriminant and nomological validity of this construct, along with other constructs will be tested at the end of this chapter.

5.3.4 Perceived Environmental Uncertainty (PEU)

Contingency theory research emphasises the importance of uncertainty as a critical factor in management control systems studies and the most commonly researched aspect of environment (Chenhall, 2007). The literature suggests several instruments to measure perceived environmental uncertainty (PEU) in management control

contingency studies. For instance, Miles and Snow (1978) develop an instrument comprising 24 questions, on a seven-point Likert scale, to capture the changes in external environments including suppliers, competitors, customers, financial markets, governmental regulations, laws and policies and labour union actions.

Similar to Miles and Snow's (1978), Govindarajan (1984) use an instrument to capture the changes in the main aspects of external environments using a smaller number of questions (only eight). On a five-point Likert scale, the instrument measures the predictability of changes in manufacturing technology, competitors' actions, market demand, product attributes, raw material availability, raw material price, government regulation and labour union actions. This instrument has also been used in other MC contingency studies (e.g. Gul, 1991; Gul and Chia, 1994).

5.3.4.1 Measures of PEU

This study measured PEU using the instrument of Govindarajan (1984) because it is concise, simple and covers the main aspects of the external environment (see table 5.7). Unlike the five-point Likert scale used in the original instrument, this study adopted a seven-point Likert scale to allow a wide range of choices to the respondents and to ensure consistency with other scales used throughout the questionnaire. The respondents were asked to rate the unpredictability level of changes, from highly predictable to highly unpredictable rate of change, in the following aspects of the external environment: manufacturing technology, competitors' actions, market demand, product attributes and design, raw material availability and prices, government regulation and labour union actions.

Table 5.7: Measures of PEU

Construct	Source	Measure no.	Description of the Measure (Predictability of change in ...)
Perceived	Govindarajan	UN1	Customer's demand and taste
Environmental	(1984)	UN2	Product attributes and design
Uncertainty		UN3	Competitors' actions
		UN4	Government regulations
		UN5	Labour union actions
		UN6	Manufacturing technology
		UN7	Raw material availability

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5.3.4.2   EFA of PEU

EFA is implemented to assess the unidimensionality of PEU, using the principal component method (see table 5.8) for the first four measures (UN1-UN4). The remaining measures (UN5-UN7) are removed from the analysis due to the high rate of missing data (more than 10%) to avoid measurement bias (Hair et al., 2010). Missing data analysis will be discussed in detail in the next chapter. However, the high level of missing data in these measures (UN5-UN7) can be explained, as these measures may not be applicable to some companies in the sample. For instance, manufacturing technology (UN6) and raw material availability (UN7) are basically related to manufacturing companies. However, the sample is not limited to manufacturing companies.

The initial results of EFA for PEU indicate a low level of communality (less than 0.5) for UN4 (unpredictability of changes in government regulation). As a result, UN4 was removed from the analysis and another round of analysis was performed using the remaining variables (UN1, UN2 and UN3). The results of the second round of EFA presented in table 5.8 confirm the unidimensionality of PEU. One factor has emerged from this analysis, explaining 59.27% from the variability in the construct. All the factor loadings were high, greater than 0.40, ranging from 0.81 to 0.88. Bartlettøs test of sphericity (47.67, p Ö 0.05) and Kaiserøs measure of sampling adequacy (0.634) indicate that EFA is appropriate and within acceptable levels (Hair et al., 2010).

Table 5.8: EFA of PEU

Measures	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlettøs Test (sig.)	Construct
UN1	0.657	0.811	1.778	59.27%	0.634	0.00	PEU
UN2	0.782	0.884					
UN3	0.788	0.888					

5.3.4.3   Reliability of PEU

To assess the construct reliability the indicator reliability is assessed, through examining the outer loadings of the measures with their respective constructs using PLS-SEM. Exploring the results of indicators loadings in table 5.9 reveals that all measures have high reliability as they highly load (greater than 0.7) on the PEU construct.

Table 5.9: Indicator Reliability of PEU Measures

Measures	Outer weight	Loadings	Construct
UN1	0.470	0.842	PEU
UN2	0.425	0.761	
UN3	0.396	0.708	

Further, to assess the construct reliability of the PEU, Cronbach's alpha and composite reliability were calculated using PLS-SEM (see table 5.10). Cronbach's alpha was 0.65, indicating an acceptable level of reliability (Nunnaly, 1978; Hair et al., 2010). Exploring the composite reliability value in table 5.10 reveals that PEU is internally consistent in its measurement and has satisfactory reliability (greater than 0.7). The results of the reliability tests in general suggest that PEU can be measured adequately using UN1, UN2 and UN3.

Table 5.10: Reliability Coefficients of PEU

Construct	Cronbach's alpha	Composite Reliability	Average Variance Extracted
PEU	0.659	0.815	0.597

5.3.4.4 Convergent Validity of PEU

To assess the construct validity the convergent validity of the PEU construct AVE is examined, which should be × 0.5 to indicate a sufficient level of convergent validity (Hair et al., 2011a).The results in table 5.10 reveal that the AVE of PEU (0.597) indicates a satisfactory level of convergent validity (AVE × 0.5). In addition, discriminant validity and nomological validity will be assessed for all the constructs at the end of this chapter.

5.3.5 Strategy

The role of strategy is critical in MCS studies, as it tackles the criticism levelled at the assumption of the contingency-based research that MCS is determined by context and managers are constrained by their operating circumstances (Chenhall, 2007). õCorporate strategy is concerned with decisions about the types of businesses to

operate in, including what businesses to acquire or divest, and how best to structure and finance the companyö (Johnson and Scholes, 1989, p. 9).

Three common taxonomies have been used in studying the strategy-MCS relationship: prospectors/analysts/defenders (Miles and Snow, 1978), build/hold/harvest (Gupta and Govindarajan, 1984) and product differentiation/cost leadership (Porter, 1980). Arguably, these taxonomies are not significantly different and can be reconciled with prospectors/builders/product differentiators at one end of a continuum, and defenders/harvesters/cost-leaders at the other (Abdel-Kader and Luther, 2008).

Different instruments have been used to capture the different aspects of strategies in MCS empirical studies. One approach uses instruments that measure strategies through directly asking respondents if they use differentiation/cost-leadership strategies. For instance, Govindarajan and Fisher (1990) use an instrument asking respondents to indicate the percentage of their business unitøs total sales accounted for by products representing use of either cost-leadership or differentiation. Similarly, Snow and Hrebiniak (1980) use self-typing instruments asking respondents to read a short unlabelled description of four strategic types, based on Miles and Snow's (1978) typology of prospector and defender, and to select the paragraph which best describes their strategies.

Another approach uses instruments that indirectly infer the strategy type through asking respondents to position their companies in comparison with competitors. For instance, Govindarajan (1988) used an instrument to measure strategy based on Porter's (1980) typology of differentiation and low cost strategies, asking respondents to position their companies relative to leading competitors in different areas, including product-selling price, percentage of sales spent on research and development and marketing expenses, product quality, brand image and product features.

5.3.5.1   Measures of Strategy

This study adopts the indirect approach suggested by Govindarajan (1988). This instrument (see table 5.11) allows strategy to be measured based on a continuum, whereas a high score on the continuum reflects differentiation strategies and a low score reflects cost leadership strategies. Using a continuum allows respondents to flexibly position their companies on the continuum, as it is not necessary for companies to be positioned at one of the extremes. On a seven-point Likert scale ranging from significantly lower to significantly higher, respondents were asked to

position their companies, relative to their leading competitors in product-selling price, percentage of sales spent on research and development, percentage of sales spent on marketing expenses, product quality, brand image and product features.

Table 5.11: Measures of Strategy

Construct	Source	Measure no.	Description of the Measure (Company relative position to competitors in ...)
Strategy	Govindarajan (1988)	ST1	Brand image
		ST2	Product features
		ST3	Product quality
		ST4	Product sales price
		ST5	Percentage of sales spent on research and development (R&D)
		ST6	Percentage of sales spent on marketing expenses

5.3.5.2   EFA of Strategy

To assess the unidimensionality of the strategy construct, EFA was implemented using the principal component method (see table 5.12) for the first four measures ST1-ST4. The rest of measures (ST5-ST6) were removed from the analysis due to the high rate of missing data (more than 10%), to avoid measurement bias (Hair et al., 2010). Missing data analysis will be discussed in detail in the next chapter. However, the high level of missing data in these measures (ST5-ST6) can be attributed to the wide range of companies represented in the sample, for which some costs, such as research and development, may not be applicable.

The initial results of EFA for strategy indicate a low level of communality (less than 0.5) for ST4 (company relative position to competitors in sales price). As a result, ST4 was removed from the analysis and another round of analysis was performed using the remaining variables (ST1, ST2 and ST3). The results of the EFA presented in table 5.12 confirm the unidimensionality of the strategy construct. One factor has emerged from this analysis, explaining 74.22% from the variability of strategy. All loadings were high, greater than 0.40, ranging from 0.85 to 0.91. Bartlettøs test of sphericity (128.77, p Ö 0.05) and Kaiserøs measure of sampling adequacy (0.719) indicate that EFA is appropriate and within acceptable levels (Hair et al., 2010).

Table 5.12: EFA of strategy

Measures	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlett's Test (sig.)	Construct
ST1	0.719	0.848	2.227	74.22%	0.719	0.00	Strategy
ST2	0.825	0.908					
ST3	0.830	0.911					

5.3.5.3 Reliability of Strategy

To assess the construct reliability of strategy, indicator reliability was assessed by examining the outer loadings of the measures with their respective constructs using PLS-SEM. Exploring the results of indicator loadings in table 5.13 reveals that all measures have high reliability as they highly load (greater than 0.7) on the strategy construct.

Table 5.13: Indicator Reliability of Strategy Measures

Measures	Outer weight	Loadings	Construct
ST1	0.357	0.848	Strategy
ST2	0.388	0.908	
ST3	0.384	0.911	

Furthermore, Cronbach's alpha and composite reliability were calculated using PLS-SEM (see table 5.14). Cronbach's alpha was 0.817, indicating an acceptable level of reliability (Hair et al., 2010). The composite reliability value (0.919) in table 5.14 reveals that the strategy construct is internally consistent in its measurement and has satisfactory reliability (greater than 0.7). The results of the reliability tests, in general, suggest that the strategy can be measured adequately using ST1, ST2 and ST3.

Table 5.14: Reliability Coefficients of Strategy

Construct	Cronbach's alpha	Composite Reliability	Average Variance Extracted
Strategy	0.817	0.919	0.791

5.3.5.4   The Construct Validity of Strategy

To assess the construct validity of strategy the convergent validity of the strategy construct was examined using AVE, which should be × 0.5 to indicate a sufficient level of convergent validity (Hair et al., 2011a). The results in table 5.14 reveal that the AVE value of strategy (0.791) indicates a satisfactory level of convergent validity (AVE × 0.5). However, discriminant validity and nomological validity will be assessed for all constructs at the end of this chapter.

5.3.6 Decentralisation

Decentralisation, as an important feature of organisation structure, relates to the extent to which authority for taking decisions is delegated to relatively low levels in the organisation. Similar to other aspects of context in contemporary settings, structure is an important factor in understanding MCS design (Chenhall, 2007).

Decentralisation can be defined as the degree of autonomy delegated to managers (Chenhall and Morris, 1986). It provides business unit managers with greater responsibility over planning and control actions and greater access to information not available to the centre (Abdel-Kader and Luther, 2008).

5.3.6.1   Measures of Decentralisation

To capture the level of delegating decision making authority in a company, this study adopts the instrument developed by Gordon and Narayanan (1984). On a seven-point Likert scale, ranging from no delegation at all to full delegation, the instrument (see table 5.15) includes five questions.

Table 5.15: Measures of Decentralisation

Construct	Source	Measure no.	Description of the Measure (Delegation of authority in .....)
Decentralisation	Gordon and Narayanan (1984)	DC1	Development of new products
		DC2	Hiring and firing personnel
		DC3	Pricing of new products and significant price changes
		DC4	Selection of large new investments
		DC5	Budget setting

The respondents were asked to indicate the degree of authority delegated by the chief executives of their firms to make decisions related to development of new products, hiring and firing of managerial personnel, pricing of new products and significant price changes, selection of large new investments and budget setting.

5.3.6.2   EFA of Decentralisation

To assess the unidimensionality of the decentralisation construct EFA was implemented using the principal component method (see table 5.16). The initial results of EFA for decentralisation indicate a low level of communality (less than 0.5) for DC4 (delegating decision making in selection of large new investments) and DC5 (delegating decision making in budget setting). As a result, DC4 and DC5 were removed in the first two rounds from the analysis respectively. Another round of analysis was run using the remaining variables (DC1, DC2 and DC3).

The results of the EFA presented in table 5.16 confirm the unidimensionality of the decentralisations construct. One factor has emerged from this analysis, explaining 76.79% from variability in decentralisation. All loadings were high, greater than 0.40, ranging from 0.75 to 0.86. Bartlettøs test of sphericity (89.61, p Ö 0.05) and Kaiserøs measure of sampling adequacy (0.664) indicate that EFA is appropriate and within acceptable levels (Hair et al., 2010).

Table 5.16: EFA of Decentralisation

Measures	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlettøs Test (sig.)	Construct
DC1	0.730	0.855	2.034	76.79%	0.664	0.00	Decent.
DC2	0.561	0.749					
DC3	0.743	0.862					

5.3.6.3   Reliability of Decentralisation

To assess the construct reliability of decentralisation, indicator reliability was assessed by examining the outer loadings of the measures with their respective construct using PLS-SEM. Exploring the results of indicator loadings in table 5.17 reveals that all the measures have high reliability as they highly load (greater than 0.7) on the decentralisation construct.

Table 5.17: Indicator Reliability of Decentralisation Measures

Measures	Outer weight	Loadings	Construct
DC1	0.420	0.855	Decentralisation
DC2	0.368	0.749	
DC3	0.424	0.862	

Additionally, to assess the construct reliability of decentralisation Cronbachøs alpha and composite reliability were calculated using PLS-SEM (see table 5.18). Cronbachøs alpha was 0.760, indicating an acceptable level of reliability (Hair et al., 2010). The composite reliability value was 0.760, revealing that the decentralisation construct is internally consistent in its measurement and has satisfactory reliability (greater than 0.7). The results of the reliability tests in general suggest that decentralisation can be measured adequately using DC1, DC2 and DC3.

Table 5.18: Reliability Coefficients of Decentralisation

Construct	Cronbachøs alpha	Composite Reliability	Average Variance Extracted
Decentralisation	0.760	0.760	0.678

5.3.6.4 Convergent Validity of Decentralisation

To consider the construct validity the convergent validity of the decentralisation construct was examined using AVE, which should be × 0.5 to indicate a sufficient level of convergent validity (Hair et al., 2011a). The results in table 5.18 reveal that the AVE of decentralisation (0.678) indicates a satisfactory level of convergent validity (AVE × 0.5). However, discriminant validity and nomological validity will be assessed for all constructs at the end of this chapter.

5.3.7 Compliance with the CCCG

CG codes aim at õimproving the quality of companiesø board governance and increasing the accountability of companies to shareholders while maximizing shareholder or stakeholder valueö (Aguilera and Cuervo-Cazurra, 2004: p.420). Therefore, compliance with CG codes has the potential to improve organisational performance. The literature suggests different approaches to measure the level of compliance with CG codes. One approach is to classify companies into compliant and

non-compliant with some provisions, separated by box-ticking (Aguilera and Cuervo-Cazurra, 2004). Another approach is to develop a CG index to proxy for the overall level of compliance with the code provisions, similar to Gompers et al. (2003) methodology.

5.3.7.1   Measure of Compliance with the CCCG

This study adopts the methodology of Gompers et al. (2003) in developing the CG index (see table 5.19). The CG index approach, as a holistic approach, has the advantage of capturing multiple CG mechanisms rather than focusing on a single or small subset of CG mechanisms, taking into consideration the complementarities between these mechanisms. Due to the lack of information regarding the overall level of compliance with the CCCG in the quoted companies in the UK, this study uses content analysis to assess the level of compliance with the code provisions in the sampled companies.

The CG report, as a part of the annual report, has been analysed to identify which provisions a company has complied with and which provisions has not. To develop a compliance index for a company, the level of compliance to each provision in the code has been assessed and a value has been assigned to each provision accordingly. Each provision is to be rated 1 if a company complies with it and 0 if not. The total compliance score is to be calculated as a summation of values assigned to all provisions with equal weights given.

Table 5.19: Measure of Compliance with the CCCG

Construct	Source	Measure no.	Description of the Measure
Compliance with the CCCG	Content analysis developed by this study following Gompers et al. (2003) methodology	CM	Percentage of compliance with the CCCG provisions

Because the sample comprises two different groups of companies with different compliance requirements, two sets of provisions have been examined. The first set is used for the companies listed on the Main Market, based on the provisions of section 1 from the CCCG (Combined Code, 2008). The second set is used for AIM companies, based on QCA guidelines (QCA, 2007). The maximum score on the

compliance index, in case of full compliance with all provisions, is 49 for companies listed on the Main Market and 29 for AIM companies.

However, to achieve comparability to the compliance scores for companies in the two markets a compliance percentage is calculated for each company. The compliance percentage relates the total compliance score for each company to the respected maximum score in the case of full compliance.

None of the EFA, reliability and convergent validity tests have been performed for compliance with the CCCG, as it has been measured using a single indicator. However, the discriminant and nomological validity of this construct, along with other constructs will be tested at the end of this chapter.

5.3.8 Corporate Entrepreneurship

CE has been recognised in the literature as an important element of successful companies, as it can help in the acquisition of new capabilities, development of new venture streams and improving performance (Lumpkin and Dess, 1996; Rauch et al., 2009). CE is a multi-dimensional construct; therefore different typologies have been used in the literature to capture the different dimensions of entrepreneurship (Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996; Short et al., 2010).

One of the earliest and the most commonly used typologies in the literature was developed by Miller (1983), which assumes three dimensions of CE namely, innovativeness, risk taking and proactiveness. More recently, Lumpkin and Dess (1996) suggest autonomy and competitive aggressiveness dimensions as additional components of the CE construct. However, there is no agreement in the literature on what constitutes CE. The lack of consensus has encouraged researches towards building and testing a broader theory of entrepreneurship, which makes it difficult for them to investigate the relationship between entrepreneurship and performance (Lumpkin and Dess, 1996).

5.3.8.1 Measures of CE

This study adopts a comprehensive instrument that contains the five main dimensions of CE (see table 5.20). These dimensions include three dimensions (innovativeness, risk-taking and proactiveness), based on Miller's (1983) conceptualisation of CE, and the two dimensions (autonomy and competitive aggressiveness), as suggested by Lumpkin and Dess (1996).

Table 5.20: Measures of CE

Construct	Dimensions	Dimension no.	Source	Measure No.	Description of measure
CE	Innovation	CE1	Covin and Slevin (1989)	CE11	Emphasis on R&D and innovation
				CE12	New lines of products
				CE13	Change in product lines
	Proactiveness	CE2	Covin and Slevin (1989)	CE21	Initiatives in dealing with competitors
				CE22	Introducing new products, administrative techniques and operating technologies
				CE23	Competitive posture
	Competitive Aggressivenes	CE3	Lumpkin and Dess (2001)	CE31	Aggressiveness and intense competition
	Risk taking	CE4	Covin and Slevin (1989)	CE41	Tendency to accept high risk projects
				CE42	Bold, wide-ranging acts to achieve firmøs objectives
				CE43	Aggressive posture to exploit potential opportunities
	Autonomy	CE5	Lumpkin et al. (2009)	CE51	Supporting individuals/teams to work autonomously
				CE52	Individuals/teams decide themselves business opportunities
				CE53	Individuals/team take decisions without constantly referring to supervisors
				CE54	Employee initiatives and input play important role in deciding entrepreneurial opportunities

Innovativeness, risk taking and proactiveness have been measured in the current study using the most commonly used instrument in CE literature. The instrument was developed by Covin and Slevin (1989), based on previous instruments developed by Khandwalla (1977) and Miller and Friesen (1982). The instrument comprises a nine-item scale that measures a company tendency toward innovation, proactiveness and risk-taking, using a seven-point semantic scale. The first three items of this instrument

measure a company's tendency toward innovation, the second three items measure a company's proactive orientation and the last three items measure a company's risk-taking tendency (Covin and Slevin, 1989). Competitive aggressiveness was measured using a one-item scale adopted from Lumpkin and Dess (2001), and autonomy was measured using four-item scale adopted from Lumpkin et al. (2009).

5.3.8.2 EFA of CE

To assess the unidimensionality of the CE construct EFA was implemented using the principal component method (see table 5.21). EFA for CE, as a second order latent variable comprising a number of first order latent variables was performed in two stages. At the first stage EFA was performed for each of the CE dimensions separately. Therefore, loadings of measures (CE11-C54) were checked for their respected first order latent variables or dimensions (innovativeness, proactiveness, competitive aggressiveness, risk taking and autonomy).

Table 5.21: EFA of the CE Dimensions

Measure	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlett's Test (sig.)	Cronbach's alpha	Dimensions
CE11	0.626	0.791	2.073	69.11%	0.690	0.00	0.774	Innovativeness
CE12	0.726	0.852						
CE13	0.722	0.850						
CE21	0.633	0.796	1.935	64.49%	0.681	0.00	0.722	Proactiveness
CE22	0.633	0.795						
CE23	0.639	0.818						
CE31								Competitive aggressiveness
CE41	0.764	0.874	2.145	71.49%	0.698	0.00	0.80	Risk taking
CE42	0.718	0.847						
CE43	0.663	0.814						
CE51	0.552	0.743	1.811	60.38%	0.651	0.00	0.671	Autonomy
CE52	0.664	0.815						
CE53	0.595	0.771						

The initial results of EFA indicate that all variables, as assumed, loaded highly on their respected first order latent variables except for CE54, which was removed for low communalities with other variables (CE51-CE53) in the autonomy dimension. Further, to assess the reliability of each dimension, Cronbach's alpha was calculated using SPSS (see table 5.21). Cronbach's alpha was greater than 0.70 for all dimensions except autonomy which was equal to 0.67, indicating an acceptable level of reliability (Hair et al., 2010).

At the second stage, loadings of all first order latent variables (dimensions) were checked for the second order latent variable (CE). However, risk taking CE4 and autonomy CE5 were removed because of low communality (less than 0.5) and EFA was performed using the remaining first order latent variables or dimensions (Innovativeness (CE1), proactiveness (CE2) and competitive aggressiveness (CE3).

The results of the EFA presented in table 5.22 confirm the unidimensionality of CE. One factor has emerged from this analysis explaining 69.11% from the variability of CE. All loadings were high, greater than 0.40, ranging from 0.79 to 0.85. Bartlett's test of sphericity (111.90, p Ö0.05) and Kaiser's measure of sampling adequacy (0.69) indicate that EFA is appropriate and within acceptable levels (Hair et al., 2010).

Table 5.22: EFA of the CE Construct

Dimensions	Measures	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlett's Test (sig.)	Construct
Innovativeness	CE11	0.626	0.791	2.073	69.11%	0.690	0.00	CE
Proactiveness	CE12	0.726	0.852					
Competitive aggressiveness	CE13	0.722	0.850					

5.3.8.3 Reliability of CE

To assess the construct reliability of CE, indicator reliability was assessed by examining the outer loadings of the measures with their respective constructs using PLS-SEM. Exploring the results of indicator loadings in table 5.23 reveals that all measures have high reliability as they highly load (greater than 0.7) on the CE construct.

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Table 5.23: Indicator Reliability of CE measures

Measures	Outer weight	Loadings	Construct
CE1	0.355	0.725	Decentralisation
CE2	0.433	0.904	
CE3	0.409	0.861	

To assess the construct reliability of CE, Cronbach's alpha and composite reliability were calculated using PLS-SEM (see table 5.24). Cronbach's alpha was 0.776, indicating an acceptable level of reliability (Hair et al., 2010). The composite reliability value (0.871) in table 5.24 reveals that the CE construct is internally consistent in its measurement and has satisfactory reliability (greater than 0.7). The results of the reliability tests, in general, suggest that CE can be measured adequately using CE1, CE2 and CE3.

Table 5.24: Reliability Coefficients of CE

Construct	Cronbach's alpha	Composite Reliability	Average Variance Extracted
CE	0.776	0.871	0.695

5.3.8.4 Convergent Validity of CE

To assess the construct validity, the convergent validity of the CE construct was examined using AVE, which should be $\times$ 0.5 to indicate a sufficient level of convergent validity (Hair et al., 2011a). The results in table 5.24 reveal that the AVE of CE (0.695) indicates a satisfactory level of convergent validity (AVE $\times$ 0.5). However, discriminant validity and nomological validity will be assessed for all constructs at the end of this chapter.

5.3.9 Organisational Performance

Performance is a multidimensional construct and it is not an easy task to find an instrument that captures the multiple-aspects of organisational performance. Generally speaking, organisational performance can be measured using objective or subjective measures. However, each set of measures has its advantages and disadvantages.

Objective performance measures (e.g. profit, ROI, market-based measures) are more reliable than subjective performance measures. However, these measures of performance have been criticised for narrow focus on some aspects of performance (e.g. financial performance) and ignoring other important aspects (e.g. non-financial performance). Furthermore, comparing these measures across different companies with different objectives and strategies could provide misleading results. Subjective performance measures are less reliable than objective performance. However, these measures of performance are multi-dimensional, contain financial and non-financial measures and can be compared across companies.

5.3.9.1   Measures of Organisational Performance

In order to capture the multiple-aspects of organisational performance this study adopts both subjective and objective performance measures. According to Ittner and Larcker (2001), combining survey data (subjective performance measures) with hard performance data (objective performance measures) from publicly available sources helps to enhance the credibility of performance tests. However, õobjective and subjective performance measures perhaps cannot, and should not, be used interchangeablyö (Van der Stede et al., 2005: p.675).

The main type of performance measures used in this study is the perceived performance as it includes the main aspects of performance (financial and non-financial). Besides, it is the most commonly used measure in survey studies in management accounting in general (Van der Stede et al., 2005) and in the contingency-based studies in particular. Because VBM and CG studies mainly depend on the market-based performance measures for shareholder value creation, this study adopted the market-based performance, as a complementary to the perceived performance measures.

The perceived performance was measured using an instrument adopted from Khandwalla (1977, p.657) and modified. This instrument (see table 5.25) has been selected because it comprises the main financial measures (e.g. profitability and sales growth), as well as non financial measures (e.g. public image). On a seven-point Likert scale, ranging from significantly lower to significantly higher, the instrument has six questions asking respondents to rate their performance relative to the major competitors in the following areas: profitability (measured by ROI for example), sales growth, development of new products, customer satisfaction and public image.

Table 5.25: Measures of Perceived Performance

Construct	Source	Measure no.	Description of the measure (Company relative position to competitors in...)
Perceived Performance	adapted from Khandwalla (1977)	PP1	Sales growth
		PP2	Development of new products
		PP3	Public image and goodwill
		PP4	Profitability
		PP5	Customer satisfaction

In addition, this study adopted Total Shareholder Return (TSR) to proxy for shareholder value (see table 5.26), as TSR is the most popular and cited measure for shareholder wealth (Cooper et al., 2001; Dulewicz and Herbert, 2004) and denotes õthe change in capital value of a company over a one-year period, plus dividends, stated as a percentage of the stock value at the beginning of the yearö (Ameels et al., 2002).

TSR captures the two sources of shareholder value creation, i.e. the increase in share price during the year and the dividends received in that year. Proponents of VBM (e.g. Rappaport, 1986) argue that stock price is the best measure of market expectations of a companyøs future performance and TSR is a good measure for shareholder value creation, as it can be used to estimate the stockøs future value and the expected risk

Table 5.26: Measure of Market-Based Performance

Construct	Source	Measure no.	Description of the Measure
Market-based Performance	(Cooper et al., 2001; Dulewicz and Herbert, 2004)	MP	Total Shareholder Return (TSR)

However, TSR is not without shortcomings. The main problems with this measure are being affected with unexpected and unexplained fluctuations in the stock market and failing to directly consider the efficiency of using assets to generate profits, regardless of how profits are delivered to shareholders in the forms of dividends or capital appreciation (Dulewicz and Herbert, 2004).

In the current study, to address these problems, TSR was not used as the only performance measure; perceived performance measures were used in addition to gauge the multiple-aspects of performance. TSR was measured using archive data rather than the perceived measure as asking the key informants of listed companies to estimate their actual stock returns ex-post while the historical data is publicly available from databases is questionable (Lueg and Schaffer, 2010).

According to Ittner et al. (2003), ex-post perceptive performance measures are, apparently, unrelated to quantitative performance measures from capital markets and, therefore, may not be an appropriate surrogate. In the current study TSR was obtained using DataStream index to measure the growth in value of a shareholding over the year ending 2010 for the responding companies.

None of the EFA, reliability and convergent validity tests have been performed for market-based performance, as it has been measured using a single indicator. However, the discriminant and nomological validity of this construct, along with other constructs, will be tested at the end of this chapter.

5.3.9.2   EFA of Perceived Performance

To assess the unidimensionality of the perceived performance construct EFA was implemented using the principal component method (see table 5.27). The initial results of EFA for VBM indicate a low level of communality (less than 0.5) for PP4 (profitability) and PP5 (customer satisfaction). As a result, PP4 and PP5 were removed in the first two rounds of the analysis respectively. Another round of analysis was carried out using the remaining variables, sales growth (PP1), development of new products (PP2) and public image and good will (PP3).

Table 5.27: EFA of Perceived performance

Measures	Communalities	Final Loadings	Eigen Value	Variance Extracted	KMO	Bartlett's Test	Construct
PP1	0.698	0.835	1.878	65.92%	0.652	0.00	Perceived
PP2	0.742	0.861					performance
PP3	0.538	0.734					

The results of the EFA presented in table 5.27 confirm the unidimensionality of the perceived performance construct. One factor has emerged from this analysis, explaining 65.92% from variability in the perceived performance. All loadings were

high, greater than 0.40, ranging from 0.73 to 0.86. Bartlettøs test of sphericity (79.97, *p* Ö 0.05) and Kaiserøs measure of sampling adequacy (0.652) indicated that EFA is appropriate and within acceptable levels (Hair et al., 2010).

5.3.9.3   Reliability of Perceived Performance

To assess the construct reliability, the indicator reliability was assessed by examining the outer loadings of the measures with their respective constructs using PLS-SEM. Exploring the results of indicator loadings in table 5.28 reveals that all measures have high reliability as they highly load (greater than 0.7) on the perceived performance construct.

Table 5.28: Indicator Reliability of Perceived Performance Measures

Measures	Outer weight	Loadings	Construct
PP1	0.422	0.835	Perceived performance
PP2	0.371	0.861	
PP3	0.436	0.734	

Further, to assess the construct reliability of the perceived performance, Cronbachøs alpha and composite reliability were calculated using PLS-SEM (see table 5.29). Cronbachøs alpha was 0.739, indicating an acceptable level of reliability (Hair et al., 2010). The composite reliability value (0.852) in table 5.29 reveals that the perceived performance construct is internally consistent in its measurement and has a satisfactory reliability (greater than 0.7). The results of the reliability tests, in general, suggest that the perceived performance can be measured adequately using PP1, PP2 and PP3.

Table 5.29: Reliability Coefficients of Perceived Performance

Construct	Cronbachøs alpha	Composite Reliability	Average Variance Extracted
Perceived performance	0.739	0.852	0.659

5.3.9.4   Convergent Validity of Perceived Performance

To assess the construct validity the convergent validity of the perceived performance construct was examined using AVE, which should be × 0.5 to indicate a sufficient level of convergent validity (Hair et al., 2011a). The results in table 5.29 reveal that

the AVE value of the perceived performance (0.659) indicates a satisfactory level of convergent validity (AVE × 0.5). However, discriminant validity and nomological validity of the perceived performance will be assessed for all constructs at the end of this chapter.

5.4 Discriminant validity

Discriminant validity assesses õthe degree to which measures of different concepts are distinctö (Bagozzi, 1994, p. 20). According to Hair et al. (2011b), two criteria can be used to assess the discriminant validity: Fornell-Larckerøs criterion, developed by Fornell and Larcker (1981), and cross loadings criterion, developed by Chin (1998).

5.4.1 Forner-Larcker's Criterion

The Fornell-Larcker criterion requires the AVE for each construct to be higher than the squared inter-correlation between this construct and any other constructs (Fornell and Larcker, 1981). Alternatively, comparison can be made between the square root of AVE for each construct and the inter-correlations with other constructs.

Table 5.30: Correlation Matrix of Constructs and Square Roots of AVE

	Size	Agen.	Uncert	Strat.	Dec.	VBM	Com.	CE	P. P.	M.P.	Com* VBM
Size	**1**										
Agen.	0.042	**1**									
Uncert	0.153	-0.055	**0.773**								
Strat.	-0.049	-0.082	0.244	**0.89**							
Dec.	0.099	0.169	0.191	0.256	**0.823**						
VBM	0.046	0.269	-0.039	-0.178	0.157	**0.847**					
Comp	0.148	0.389	-0.026	-0.003	0.289	0.226	**1**				
CE	0.16	-0.002	0.325	0.525	0.258	-0.021	0.114	**0.833**			
P. P.	0.095	-0.114	0.254	0.759	0.216	-0.116	0.016	0.616	**0.812**		
M. P.	0.023	0.19	0.037	0.117	0.125	0.032	0.351	-0.048	0.068	**1**	
Com.* VBM	-0.053	-0.073	-0.005	0.073	-0.046	0.071	-0.251	-0.173	-0.043	-0.062	**0.823**

To apply the Fornell-Larcker criterion a constructs correlation matrix was developed and average variances extracted (AVE's) were shown on the diagonal, as shown in table 5.30. The matrix shows the square roots of AVE on the diagonal and the inter-correlation between constructs off diagonal.

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Exploring the results indicates that the square root of AVE for any construct is greater than the correlation between this construct and any other construct in the same row or column. Accordingly, all the constructs have a satisfactory level of discriminant validity.

5.4.2 Cross Loadings

The second criterion of discriminant validity is cross loadings. According to Chin (1998), a latent construct exhibits satisfactory discriminant validity when the loadings of items used in measuring this construct are higher than their loadings with all the remaining constructs (cross loadings).

To check if there are any cross loadings a correlation matrix is prepared between the latent constructs and the indicators (observed variables) used in measuring these constructs, as shown in table 5.31. The correlation matrix shows the correlations (loadings) of each indicator to their respected constructs and to all the other constructs.

Exploring the results in table 5.31 indicates that all items have high loadings with their respected constructs compared with their loadings to the other constructs in the same row or column. In other words, there are no cross loadings for any of the measurement items. This means that all the constructs achieve satisfactory levels of discriminant validity and can be used in the structural model to test the hypothesised relationships between these constructs.

5.5 Nomological Validity

To ensure the nomological validity of constructs a theoretical support from prior research for the proposed relationships between the constructs has been provided in the theoretical framework chapter, to ensure that the correlations between the constructs in the measurement theory make sense. Further, the nomological validity has been examined based on the correlation matrix, as recommended by Hair et al. (2010).

The correlation matrix provided in table 5.32 and the *P* values of correlations in table 5.33 support the prediction that these constructs are related to each other and these relationships simply make sense.

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Table 5.31: Correlation Matrix of Constructs and Indicators

	Size	Agen.	Unc.	Strat.	Dec.	VBM	Comp	CE	P. P.	M. P.	Com.* VBM
SZ1	**1**	0	0	0	0	0	0	0	0	0	0
AG1	0	**1**	0	0	0	0	0	0	0	0	0
UN1	0.081	-0.127	**0.708**	0.383	-0.031	0.137	0.016	-0.053	-0.287	0.041	-0.102
UN2	-0.049	0.043	**0.761**	-0.185	-0.046	-0.042	0.022	0.171	-0.017	0.013	0.141
UN3	-0.024	0.068	**0.842**	-0.154	0.068	-0.077	-0.033	-0.109	0.257	-0.046	-0.042
ST1	0.026	0.09	0.086	**0.848**	-0.17	0.051	-0.045	0.024	-0.088	0.077	-0.035
ST2	-0.025	-0.117	-0.065	**0.908**	0.12	-0.047	0.021	0.073	-0.136	0.023	0.014
ST3	0.001	0.033	-0.016	**0.911**	0.038	-0.001	0.02	-0.095	0.218	-0.095	0.019
DC1	0.039	-0.01	0.049	-0.073	**0.855**	-0.103	-0.032	0.06	-0.005	0.069	-0.001
DC2	-0.018	-0.017	-0.121	-0.024	**0.749**	0.091	0.071	0.186	-0.178	-0.003	0.048
DC3	-0.023	0.024	0.056	0.093	**0.862**	0.023	-0.03	-0.221	0.159	-0.067	-0.041
VM3	-0.105	-0.01	-0.034	-0.147	0.054	**0.862**	-0.156	0.085	0.05	0.057	-0.136
VM4	0.057	0.087	-0.018	-0.048	0.049	**0.907**	-0.185	-0.075	0.041	0.005	-0.102
VM5	0.051	-0.092	0.06	0.223	-0.119	**0.765**	0.396	-0.007	-0.106	-0.07	0.274
CM	0	0	0	0	0	0	**1**	0	0	0	0
CE1	-0.107	-0.015	0.137	-0.056	-0.049	-0.037	-0.137	**0.725**	-0.193	0.101	-0.007
CE2	0.094	0.049	-0.129	0.076	0.005	0.039	-0.017	**0.904**	0.147	0.013	-0.017
CE3	-0.009	-0.038	0.021	-0.032	0.036	-0.009	0.134	**0.861**	0.008	-0.099	0.023
PP1	0.074	-0.029	-0.019	-0.291	-0.087	-0.078	0.187	-0.063	**0.835**	-0.115	0.105
PP2	-0.082	-0.025	0.003	-0.011	0.033	-0.057	0.017	0.152	**0.861**	0.108	0.012
PP3	0.012	0.062	0.017	0.345	0.061	0.155	-0.233	-0.107	**0.734**	0.004	-0.133
MP	0	0	0	0	0	0	0	0	0	**1**	0
CM* VM3	-0.036	0.064	0.005	-0.072	-0.095	-0.157	0.1	-0.061	0.135	-0.001	**0.894**
CM* VM4	-0.019	-0.039	-0.026	-0.186	0.06	-0.157	0.216	0.131	0.052	0.011	**0.908**
CM* VM5	0.078	-0.035	0.03	0.365	0.048	0.442	-0.446	-0.101	-0.263	-0.015	**0.639**

Regarding the direction of the relationships between the constructs, the signs of the correlation between the research constructs support most of the proposed directions. For instance, VBM is positively and significantly correlated with agency conflicts and compliance with the CCCG. However, the correlation signs between some other constructs were not as expected (e.g. VBM and uncertainty), which will be discussed in more detail in the next chapter. This means that the constructs, in general, achieve a satisfactory level of nomological validity and can be used in the structural model to test the hypothesised relationships between constructs.

Table 5.32: Correlations between Constructs

	Size	Agen.	Unc.	Strat.	Dec.	VBM	Com.	CE	P.P.	M.P.	Com.* VBM
Size	**1**	0.042	0.153	-0.049	0.099	0.046	0.148	0.16	0.095	0.023	-0.053
Agen.	0.042	**1**	-0.055	-0.082	0.169	0.269	0.389	-0.002	-0.114	0.19	-0.073
Unc.	0.153	-0.055	**1**	0.244	0.191	-0.039	-0.026	0.325	0.254	0.037	-0.005
Strat.	-0.049	-0.082	0.244	**1**	0.256	-0.178	-0.003	0.525	0.759	0.117	0.073
Dec.	0.099	0.169	0.191	0.256	**1**	0.157	0.289	0.258	0.216	0.125	-0.046
VBM	0.046	0.269	-0.039	-0.178	0.157	**1**	0.226	-0.021	-0.116	0.032	0.071
Com.	0.148	0.389	-0.026	-0.003	0.289	0.226	**1**	0.114	0.016	0.351	-0.251
CE	0.16	-0.002	0.325	0.525	0.258	-0.021	0.114	**1**	0.616	-0.048	-0.173
P. P.	0.095	-0.114	0.254	0.759	0.216	-0.116	0.016	0.616	**1**	0.068	-0.043
M. P.	0.023	0.19	0.037	0.117	0.125	0.032	0.351	-0.048	0.068	**1**	-0.062
Com.* VBM	-0.053	-0.073	-0.005	0.073	-0.046	0.071	-0.251	-0.173	-0.043	-0.062	**1**

Table 5.33: *p* values of Correlations between Constructs

	Size	Agen.	Unc.	Strat.	Dec.	VBM	Comp	CE	Per.P	M.P.	Com* VBM
Size	1	0.656	0.105	0.608	0.295	0.627	0.118	0.091	0.315	0.808	0.574
Agenc	0.656	1	0.56	0.385	0.073	0.004	<.001	0.985	0.229	0.044	0.444
Unc.	0.105	0.56	1	0.009	0.043	0.68	0.782	<.001	0.007	0.699	0.961
Strat.	0.608	0.385	0.009	1	0.006	0.059	0.978	<.001	<.001	0.218	0.44
Dec.	0.295	0.073	0.043	0.006	1	0.098	0.002	0.006	0.021	0.185	0.631
VBM	0.627	0.004	0.68	0.059	0.098	1	0.016	0.825	0.22	0.733	0.458
Comp	0.118	<.001	0.782	0.978	0.002	0.016	1	0.228	0.869	<.001	0.007
CE	0.091	0.985	<.001	<.001	0.006	0.825	0.228	1	<.001	0.616	0.068
Perc.P	0.315	0.229	0.007	<.001	0.021	0.22	0.869	<.001	1	0.472	0.648
M.P	0.808	0.044	0.699	0.218	0.185	0.733	<.001	0.616	0.472	1	0.517
Com* VBM	0.574	0.444	0.961	0.44	0.631	0.458	0.007	0.068	0.648	0.517	1

5.6   Summary

This chapter discussed in detail the measurements of the research constructs proposed in the theoretical framework, as an important step to test the hypothesised relationships in the structural model. To achieve this objective a five-step approach for developing and assessing the measurement model has been adopted. These steps

include conceptual definition and assessing content validity of constructs, assessing unidimensionality of constructs, assessing construct reliability, assessing construct validity, and finally using the measurement model to test the structural relationships between constructs as hypothesised in the theoretical model.

The results, in general, confirm the unidimensionality of research constructs. The indicators used in measuring the research constructs exhibit acceptable levels of reliability. In addition, all the research constructs meet the criteria of the nomological, convergent and discriminant validity. These results suggest that that the measurement model can be adequately used in testing the structural model, as will be discussed in detail in the next chapter.

Chapter 6

Structural model Analysis

6.1 Introduction

As discussed in the previous chapter the reliability and validity of the research constructs have been assured through assessing the measurement model, which ensured its adequacy to test the structural relationships proposed in the theoretical model. This chapter will present, in detail, the process of data analysis to assess the structural relationships between the research constructs, as a part of the hypotheses testing procedures.

The second section in this chapter will discuss the results of data examination and screening including missing value analysis and detecting outliers. The third section will present the descriptive statistics and the normality testing of the research constructs. The fourth section will describe the procedures and measures used in assessing the structural model and hypotheses testing using PLS-SEM, including path coefficients, coefficient of determination (R^2) and predictive relevance. The fifth section will present the results of hypotheses testing, based on path coefficients and their significance levels. In the sixth section the assessment of unobserved data heterogeneity and the multi-group analysis will be presented. The last section will include a summary of the chapter.

6.2 Data Examination

Data examination is a necessary initial step in data analysis to gain a better understanding of the data (Hair et al. 2010). According to Tabachnick and Fiddell (2007), data examination includes identifying and dealing with missing values, detecting outliers and testing the normality assumption of data. This section discusses in detail the procedures used in this study to screen and examine the data, including missing data analysis, procedures of detecting outliers and the normality testing.

6.2.1 Analysis of Missing Data

Missing values occur when the respondents fail to provide answers to one or more of the survey questions. As a result, valid values for one or more variables will be missing from the analysis, which requires assessing the pattern and the extent of the missing data, to understand the process that caused the missing data (Hair et al., 2010).

Understanding the reasons behind the missing data helps in selecting the correct way to deal with it (Hair et al., 2010). According to Hair et al. (2010), there are two types of missing data. First, ignorable missing data expected as part of the research design and inherited in the technique used, which do not need specific remedies. Second, non-ignorable missing data expected as a result of some procedural factors or some other factors related to the respondents, which require some remedies. To decide whether the missing data is ignorable, Hair et al. (2010) suggest assessing the extent and patterns of the missing data.

Generally speaking, missing data under 10% can be ignored (Hair et al. 2010). However, low levels of missing values between 10% and 15% are candidates for deletion to avoid biased measurement (Hair et al. 2010). õUltimately the researcher must compromise between the gains from deleting variables and/or cases with missing data versus the reduction in sample size and variables to represent the concepts in the studyö (Hair et al. 2010: p.48).

Checking the extent of missing data in the current study using SPSS reveals that the missing data percentage, in general, is less than 10% (the ignoring limit according to Hair et al., 2010) for all variables except for five variables. These variables (three are related to PEU and two are related to strategy) have a higher percentage of missing data ranging from 10.6% to 15.9%. The variables related to PEU are labour union actions (UN5), manufacturing technology (UN6) and raw material availability (UN7). The variables related to strategy are the percentage of sales spent on research and development (ST5) and the percentage of sales spent on marketing expenses (ST6).

One possible explanation of the relatively high percentage of missing data in these variables is that these variables might not be applicable to some companies (e.g. non-manufacturing companies) in the sample, especially that some of these variables are basically related to manufacturing companies (e.g. manufacturing technology and raw

material availability). Therefore, the researcher decided to remove these five variables to avoid any measurement bias resulting from including thee variables in the data analysis (Hair et al., 2010), especially when the other variables can adequately measure their respected constructs. Similarly, checking the cases with missing values reveals that only four cases have missing values over 10%, ranging from 11.4% to 22%, and they have been removed for the same reason.

In addition, deciding whether missing data occur completely at random (MCAR) is rather important, to assess the patterns of missing data, and to ensure that there is no systematic error (Hair et al., 2010). Therefore, Little's MCAR test has been performed using SPSS to assess the patterns of missing data in all variables. The null hypothesis of this test is that the data are MCAR. The results of Little's MCAR test (Chi-square 3427, df.3806, sig. 1.00, $p > 0.05$) support the null hypothesis and ensure the randomness of missing data (missing completely at random MCAR). This implies that there is no systematic error in the data, which allows a wide range of options in treating the missing data (Hair et al., 2010). Therefore, this study uses mean substitution for missing values, as one of the very common and best ways to impute missing values (Tabachnick and Fidell, 2007; Hair et al., 2010). This method is easily implemented using SPSS and, in general, is appropriate for relatively lower levels of missing data (Hair et al., 2010).

6.2.2 Detecting Outliers

Outliers represent õobservations with a unique combination of characteristics identifiable as distinctly different from the other observationsö (Hair et al., 2010: p. 64). Outliers can be viewed as beneficial as indicative for some unique or odd characteristics of populations that cannot be revealed in the normal course of analysis; meanwhile, it could be problematic as it distorts statistical tests (Hair et al. 2010).

In this study, both univariate and multivariate outliers were tested. Univariate outliers have been tested through transforming all the data into standardised scores. Typically, outliers are identified when the standard score is 2.5 or greater, for larger sample size (over 80) it can be extended up to 4 (Hair et al., 2010). In this study, the very common threshold value of 3 has been used (Hair et al. 2010) to detect outliers. The results revealed a few number of univariate outliers (e.g. PEU and some measures of VBM).

To detect multivariate outliers Mahalanobis D^2 analysis has been performed as a part of the regression analysis using SPSS. This analysis assesses the position of each

observation relative to the centre of all observations of a set of variables (Hair et al. 2010). In this analysis, a case can be considered as a multivariate outlier if the probability associated with D^2 is less than or equal to 0.001. After checking D^2 and the associated probability, few cases were classified as multivariate outliers (e.g. TSR), which is acceptable and expected (Tabachnick and Fidell, 2007), especially when the sample comprises a wide range of companies from different business sectors and sizes, as is the case in this study.

According to Hair et al. (2010), outliers should be retained unless they are not representative for the population or seriously deviate from the normal. Therefore, this study retained the outliers, especially as the main statistical technique used for data analysis in this study (PLS-SEM) is not sensitive to the normality of data.

6.2.3 Assessing Data Normality

Normality is an essential assumption in multivariate analysis, especially in SEM (Hair et al., 2010). Violating the normal distribution assumption can make the resulting statistical tests invalid, especially when the variation from the normal distribution is sufficiently large (Hair et al., 2010). Skewness and kurtosis tests were used in this study to test the normality of data. These tests compare the distributions of the research data with the normal distribution (Hair et al., 2010).

Kurtosis represents the õpeakednessö or the õflatnessö of distribution for a measure compared to the normal distribution (Hair et al., 2010). For a normal distribution, the value of the kurtosis statistic should be equal to zero. However, positive kurtosis values indicate a peaked distribution and negative kurtosis values indicate a flatter distribution (Hair et al., 2010). Skewness is a measure of the balance and asymmetry of distribution (Hair et al., 2010). Normal distribution is balanced, symmetric and has a skewness value of zero. If a distribution is unbalanced, it is skewed. Positive skew denotes a distribution shifted to the lift, whereas negative skewness reflects a shift to the right (Hair et al., 2010, p. 71). Skewness and kurtosis critical values can be identified from the Z distribution, based on the required significance level (Hair et al., 2010).

This study used the most commonly used critical value of $\pm$ 2.58 at the 0.01 significance level (Hair et al., 2010). The details of these statistics to the constructs and their measures will be presented in detail in the next section as a part of the descriptive statistics.

6.3 Descriptive Statistics

6.3.1 VBM

According to the measurement model, as discussed in the previous chapter, three main dimensions have been suggested to capture the main aspects of VBM practices. These dimensions include using value-based measures in strategic and significant decision making (VM3), performance measurements (VM4) and rewarding managers (VM5). In addition, a number of variables (indicators) were used to measure each of these dimensions. The descriptive statistics of the variables used in measuring VBM, including minimum and maximum values, mean, standard deviation, skewness and kurtosis are presented in table 6.1.

The descriptive statistics indicate a below average score of the overall use of value-based measures in strategic and significant decisions (2.84 out of 8). However, the results of the individual variables used in strategic and significant decisions indicate that DCF methods (such as the net present value method) are the most commonly used variables in strategic and significant decisions. The score of DCF was above the average (0.76 and 0.63 out of 1), at both corporate and business unit levels respectively. Other variables (such as CFROI and TSR) were less common in use (from 0.11 to 0.43 out of 1). Interestingly, EVA, the most popular value-based measure, was the least used measure (0.12 and 0.11 out of 1) at corporate and business unit levels respectively.

The results also indicate a lower score (1.14 out of 6) of the overall use of value-based measures, in performance measurements, than the overall use of these measures in strategic and significant decision making (2.84 out of 8). The most commonly used value-based measure in performance measurements at the corporate level was TSR (0.44 out of 1) and CFROI at the business unit level (0.20 out of 1). However, the least used measure was EVA at the corporate level (0.09 out of 1), and TSR at the business unit level (0.04 out of 1).

Finally, the results indicate, to a large extent, a lower score of the overall use of the value-based measures in management rewarding schemes (0.63 out of 6), than the overall use of these measures in performance measurements and strategic decision making. The most commonly used value-based measure in rewarding managers at the corporate level was TSR (0.44 out of 1) and CFROI at the business unit level (0.20

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out of 1). However, the least used measure was EVA at the corporate level (0.09 out of 1) and TSR at the business unit level (0.04 out of 1).

Table 6.1: Descriptive Statistics of VBM

Constructs	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
VBM*	*1.534*	*1.205*	*0*	*6.33*	*0.227*	*0.451*
Strategic decision making (VM3)	*2.84*	*1.830*	*0*	*8*	*.525*	*-.165*
DCF-Corporate level (VM31)	.76	.428	0	1	-1.241	-.469
DCF-Business unit level (VM32)	.63	.485	0	1	-.538	-1.741
EP/EVA- Corporate level (VM33)	.12	.320	0	1	2.446	4.052
EP/EVA-Business unit level (VM34)	.11	.309	0	1	2.591	4.798
CFROI-Corporate level (VM35)	.39	.490	0	1	.460	-1.821
CFROI-Business unit level (VM36)	.28	.453	0	1	.975	-1.068
TSR-Corporate level (VM37)	.43	.498	0	1	.271	-1.961
TSR-Business unit level (VM38)	.12	.331	0	1	2.314	3.415
Performance measurement (VM4)	*1.14*	*1.375*	*0*	*6*	*1.335*	*1.399*
EP/EVA- Corporate level (VM41)	.09	.285	0	1	2.937	6.744
EP/EVA-Business unit level (VM42)	.08	.272	0	1	3.147	8.046
CFROI-Corporate level (VM43)	.29	.457	0	1	.927	-1.161
CFROI-Business unit level (VM43)	.20	.404	0	1	1.493	.231
TSR-Corporate level (VM45)	.44	.499	0	1	.235	-1.980
TSR-Business unit level (VM46)	.04	.186	0	1	5.096	24.406
Management rewarding (VM5)	*0.63*	*1.009*	*0*	*6*	*2.215*	*6.976*
EP/EVA- Corporate level (VM51)	.03	.161	0	1	5.970	34.243
EP/EVA-Business unit level (VM52)	.04	.186	0	1	5.096	24.406
CFROI-Corporate level (VM53)	.04	.207	0	1	4.492	18.508
CFROI-Business unit level (VM54)	.05	.225	0	1	4.040	14.579
TSR-Corporate level (VM55)	.31	.464	0	1	0.834	-1.328
TSR-Business unit level (VM56)	.12	.320	0	1	2.446	4.052

*Descriptive data of VBM averaged across all measures for the sample (N=113) are shown in italic. Measures statistics are shown in regular font below the construct name.

These results imply that the comprehensive implementation of VBM, as suggested in the literature, is not very common practice in UK companies and some of its

applications are more popular than others (Cooper et al., 2001; CIMA, 2009). For instance, using value-based measures, especially DCF, in strategic and significant decision making is very common practice in comparison with using these measures in performance measurements and rewarding managers. Thus, many companies may implement a VBM approach partially or from a narrow perspective, as they may only adopt some VBM practices and fail to adopt others.

To assess the normality of the VBM construct the skewness and kurtosis statistics of VBM variables were examined. Though the skewness and kurtosis statistics of a number of variables (e.g. VM42, VM46) fall beyond the acceptable range ± 2.58 (Hair et al. 2010), the skewness and kurtosis statistics of the main dimensions of VBM fall within the acceptable range ± 2.58 (Hair et al. 2010) except for the kurtosis of the management rewarding dimension. These results suggest that data related to VBM variables are close to normal distribution but not normally distributed.

6.3.2 Contingency Factors

Five contingency factors have been used in the current study, namely agency conflicts, company size, PEU, strategy and decentralisation. The details of the variables used in measuring these constructs have been discussed in the previous chapter. The descriptive statistics of the variables used in measuring these constructs, including minimum and maximum values, mean, standard deviation, skewness and kurtosis are presented in table 6.2.

The descriptive statistics of the contingency factors that are measured on a seven-point Likert scale indicate either average score (e.g. PEU) or above average score (e.g. strategy and decentralisation). These results suggest that companies, in general, tend to experience a moderate level of PEU (3.45 out of 7) regarding the predictability of changes in their customersø demand and taste, product attributes and design and competitorsøactions.

Companies also tend to be more differentiators than cost leaders in formulating their strategies (4.7 out of 7), especially in their products quality. High scores on the strategy scale indicate differentiation strategies and low scores indicate cost leadership strategies. Moreover, companies tend to be more decentralised through delegating authorities in decision making, regarding the development of new

products, hiring and firing personnel, pricing of new products and significant price changes.

Table 6.2: Descriptive Statistics of Contingency Factors

Constructs	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
Agency conflicts						
Beta (AG1)	0.793	0.397	0.07	2.19	0.649	0.371
Company size						
Log (no. of employees) (SZ1)	6.5489	2.113	3.93	12.97	0.780	0.226
No. of employees	11394	53868	51	428202		
*Uncertainty**	*3.4543*	*.9397*	*1*	*6.33*	*-0.564*	*2.825*
Customerøs demand and taste (UN1)	3.389	1.175	1	6	0.002	0.484
Product attributes and design (UN2)	3.079	1.660	1	6	-0.226	0.667
Competitorsø actions (UN3)	3.893	1.318	1	7	-0.253	1.255
*Strategy**	*4.7987*	*.8797*	*1*	*6.67*	*-.326*	*0.026*
Brand image (ST1)	4.56	1.258	1	7	-.251	-.395
Product features (ST2)	4.82	.969	1	7	-.014	.022
Product quality (ST3)	5.01	.976	1	7	-.701	.295
*Decentralisation**	*4.551*	*1.369*	*1*	*7*	*-0.498*	*0.047*
Development of new products (DC1)	4.84	1.590	1	7	-0.846	1.134
Hiring and firing personnel (DC2)	4.41	1.678	1	7	-0.344	-0.661
Pricing of new products and significant price changes (DC3)	4.41	1.730	1	7	-0.441	-0.288

*Descriptive data of contingency factors averaged across all measures for the sample (N=113) are shown in italic.

Measures statistics are shown in regular font below the construct name.

The descriptive statistics of the other contingency factors that are measured using archive data reveal that company size, measured by the number of employees, ranges from 51 to 428,202 employees, with mean equal to 11,394 employees. This mean indicates that the company size in the sample tends to be large, which may be affected by the existence of several companies with extremely large numbers of employees (outliers). Finally, the risk measure (Beta), as a surrogate for agency conflicts, ranges from 0.07 to 2.19, with mean equal to 0.793. However, this variable varies from one industry to another.

Further to normality testing of the contingency factors, skewness and kurtosis statistics, in general fall within the acceptable range ± 2.58 (Hair et al. 2010) except for the kurtosis of PEU (2.825). These results suggest that data related to the contingency factors in general are normally distributed, except for PEU, which slightly violates the normal distribution assumption.

6.3.3 Compliance with the CCCG

Compliance with the CCCG has been measured as the percentage of compliance with the code provisions, based on content analysis of the annual report. The descriptive statistics of compliance with the CCCG, including minimum and maximum values, mean, standard deviation, skewness and kurtosis are presented in table 6.3.

The results indicate that most companies are highly compliant with the code provisions (mean 80%). Skewness and kurtosis statistics, in general, fall within the acceptable range ± 2.58 (Hair et al. 2010). These results suggest that the data related to compliance with the CG are normally distributed.

Table 6.3: Descriptive Statistics of Compliance with the CCCG

Construct	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
Compliance						
Percentage of compliance with the CCCG provisions (CM)	80.07	21.232	13.79	100	-1.030	0.155

The details of compliance with the code provisions are presented in the next section. The statistics are presented for the two main groups of companies (companies listed

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on the Main Market and AIM) as the code provisions and the compliance requirements are different in each group of companies.

6.3.3.1 Companies Listed on the Main Market

A summary of compliance with the provisions of the CCCG in the Main Market is presented in detail in appendix 6. The descriptive statistics, in general, indicate a high degree of compliance with the CCCG provisions. Though it is on a õcomply or explainö basis, most companies show a high degree of compliance with the code provisions.

For instance, the percentage of compliance with the code provisions ranges from 71.6% (provision A.3.2 that requires at least half of the board members to be non-executive and independent directors) to 100% (e.g. provision A.1.1 that requires a statement of how the board operates). In addition, 19 provisions (16.8% of the total code provisions) satisfy 100% compliance level and 41 provisions (84% of the total code provisions) satisfy more than 90% compliance level by the companies in the sample.

6.3.3.2 Companies Listed on AIM

A summary of compliance with the CG guidelines in AIM, published by the QCA, is presented in detail in appendix 7. The descriptive statistics indicate an average level of compliance to the CG guidelines. For instance, no single provision has satisfied 100% compliance level. The highest compliance level was 98.11% (provision number 22 that requires a statement of directorsø responsibilities). Only 8 provisions (28.5% of the total provisions) have scored above 90% compliance. The lowest compliance level was 15.09% (provision number 17 that requires describing directorsø independence). However, these results are expected, as the companies listed on the AIM are not required, but urged to comply with these guidelines.

6.3.4 Corporate Entrepreneurship

According to the measurement model, three main dimensions have been suggested to measure CE. These dimensions include innovativeness, proactiveness and competitive aggressiveness. Moreover, a number of variables have been suggested to measure each dimension. The descriptive statistics of the variables used in measuring CE, including minimum and maximum values, mean, standard deviation, skewness and kurtosis are presented in table 6.4.

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In general, the descriptive statistics indicate above average scores of CE (4.43 out of 7) and its dimensions, including innovativeness, proactiveness and competitive aggressiveness (from 4.1 to 4.7 out of 7). These results suggest that companies, in general, tend to be entrepreneurially oriented. In addition, skewness and kurtosis values are within the acceptable range ± 2.58 for all variables (Hair et al., 2010). These results suggest that data related to CE variables are normally distributed.

Table 6.4: Descriptive Statistics of Corporate Entrepreneurship

Construct	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
Corporate Entrepreneurship*	*4.433*	*1.035*	*1*	*7*	*-0.536*	*1.190*
Innovativeness	*4.10*	*1.40*	*1*	*7*	*-0.153*	*-0.639*
Emphasis on R&D and innovation	4.05	1.651	1	7	0.019	-1.059
New lines of products	4.45	1.707	1	7	-.0310	-.0769
Change in product lines	4.01	1.552	1	7	-0.041	-.652
Proactiveness	*4.49*	*1.099*	*1*	*7*	*-0.576*	*0.888*
Initiatives in dealing with competitors	4.63	1.115	1	7	-0.168	0.428
New products, techniques and technologies	4.66	1.386	1	7	-0.670	0.360
Competitive posture	4.34	1.425	1	7	-0.475	-0.172
Competitive aggressiveness						
Aggressiveness and intense competition	4.70	1.32	1	7	-0.651	0.991

*Descriptive data of CE averaged across all constructs for the sample (N=113) are shown in italic. Measures statistics are shown in regular font below the construct name.

6.3.5 Organisational Performance

Organisational performance was measured using two different sets of variables to capture the multiple aspects of performance. These measures include perceived performance and market-based performance. The descriptive statistics of the variables used in measuring organisational performance, including minimum and maximum values, mean, standard deviation, skewness and kurtosis are presented in table 6.5.

The descriptive statistics of indicate above average score of perceived performance (4.618 out of 7) and its measures (from 4.43 to 4.8 out of 7). These results suggest that companies tend to have high perceived performance. The market-based performance, measured by TSR, indicates a wide range of values from -217% to 334%, with mean value of 19.92%. However, this variable varies from one industry to another.

Table 6.5: Descriptive Statistics of Organisational Performance

Construct	Mean	Std. Dev.	Min.	Max.	Skewness	Kurtosis
*Perceived performance**	*4.618*	*0.867*	*1.67*	*6.33*	*-0.213*	*0.477*
Sales growth	4.43	1.209	1	7	-0.260	0.135
Development of new products	4.59	1.067	1	7	-.0179	0.674
Public image and goodwill	4.80	1.104	1	7	-0.431	0.754
Market-based performance						
Total Shareholder Return	19.92	67.13	-217.15	334	1.661	8.866

*Descriptive data of perceived performance averaged across all constructs for the sample (N=113) are shown in italic. Measures statistics are shown in regular font below the construct name.

The skewness and kurtosis values of perceived performance are within the acceptable range ± 2.58 (Hair et al. 2010). However, kurtosis value is well beyond the acceptable range for market-based performance because of the high degree of variation in this objective measure. These results suggest that data related to perceived performance measures are normally distributed, while the data related to market-based performance measures are not.

6.4 Structural Model Assessment

Traditional parametric based techniques for significance testing in general are not appropriate for PLS-SEM because it assumes a distribution free variance (Chin, 1998). Therefore, evaluating PLS-SEM models should be performed using non-parametric prediction-oriented measures, instead of measures which are based on fit (Chin, 1998).

According to Chin (1998) and Hair et al. (2011), the following measures can be used to assess PLS structural model: coefficient of determination (R-square), path coefficients and the Stone-Geisser test of predictive relevance. Resampling methods, such as bootstrapping and jackknifing, can be used to assess the significance and stability of path coefficient estimates. In addition, Tenenhaus et al. (2004) propose a global criterion for goodness of fit.

Finally, Hensler and Chin (2010) emphasise the importance of assessing observed and unobserved heterogeneity, considering the possibility of classifying the data into sub-groups. These proposed measures to assess the structural model can be explained in detail as follows:

6.4.1 Coefficient of Determination (R^2)

Coefficient of determination (R^2) is the primary criterion used to evaluate the inner model, as it represents the amount of variance explained of endogenous latent variable (Hair et al., 2011b). However, deciding which level of R^2 is high varies from one discipline to another (Hair et al., 2011a).

For instance, R^2 of 0.2 can be considered high in certain areas of research, such as consumer behaviour, while R^2 of 0.75 would be perceived as high in success driver studies (Hair et al., 2011a). In marketing research, for example, R^2 of 0.25, 0.5 and 0.75 for endogenous variable can be considered as weak, moderate and substantial respectively (Hair et al., 2011a).

In management accounting research, there is no specific threshold of high R^2 value. However, in the very few studies that have used PLS-SEM in management accounting research, the highest R^2 value was neither very low as consumer behaviour research (0.2), nor very high as marketing research (0.75 or more). For instance, in the study of Chenhall (2005), R^2 of the endogenous latent variables was between 0.17 and 0.32. In Vandenbosch's (1999) study, R^2 value was 0.42.

In the current study, exploring the values of R^2 of endogenous latent variables (dependent constructs) in table 6.6 reveals that R^2 value ranges from 0.12 and 0.40 .These values fall within the acceptable range compared with other studies in the field of management accounting research.

Table 6.6: Summary of R^2, Communality and Redundancy

Construct	R^2	Communality	Redundancy
Size		0.906	
Agency conflicts		0.659	
Uncertainty		0.795	
Strategy		0.791	
Decentralisation		0.678	
Compliance*VBM		0.667	
VBM	0.12	0.717	0.10038
Compliance	0.18	1.000	0.14000
Corporate Entrepreneurship	0.39	0.694	0.28454
Perceived Performance	0.40	0.659	0.25860
Market-based performance	0.13	1.000	0.12035

6.4.2 Path Coefficients

õThe individual path coefficients of the PLS structural model can be interpreted as standardised beta coefficients of ordinary least squares regressionsö (Hair et al., 2011a). Regression coefficient or beta ( ) is õthe estimated change in the dependent variable for a unit change of the independent variableö (Hair et al., 2010: p.163). The estimated regression coefficient represents both the type and strength of relationship between independent and dependent variables (Hair et al., 2010). While its sign indicates whether the relationship between the two variables is positive or negative, the value of the coefficient represents the degree to which the independent variable is associated with the dependent variable, providing that the regression coefficient is statistically significant (Hair et al., 2010).

To assess the significance of path coefficients, the *t* test and the calculated *p* value for each coefficient (Maruyama, 1998) can be used as a basis for testing the proposed relationships between variables in SEM (Hair et al., 1998). Assessing the significance of individual path coefficients and calculating the *p* value in PLS-SEM can be performed using resample methods of bootstrapping or jackknifing, as PLS-SEM does not make any assumptions regarding data distribution.

This study uses the bootstrapping resample method (100 resamples) to assess the significance of path coefficient, which is the default and recommended number of

resamples in the used software package of Warp-PLS. Using a number of resambles above 100 adds no or little to the reliability of the p value estimates (Kock, 2011). The jackknifing method was not used, as it is viewed in general as less efficient than bootstrapping, and is regarded as an approximation of the bootstrapping method (Chin, 1998).

One important feature of the Warp-PLS software, compared to the other PLS-based SEM software systems, is providing p values ready, instead of providing standard errors and t values, and leaving the users to discover what the corresponding p values are. Arguably, providing p values associated with path coefficients are more meaningful than t values for the purpose of hypothesis testing (Kock, 2011). This is because p values reflect not only the strength of the relationship, as provided by the path coefficient itself, but also the power of the test, which increases with sample size (Kock, 2011). The results of path coefficients and the p values calculated to assess the significance of path coefficients will be presented in detail in table 6.10, as a part of the hypotheses testing procedures. These results are based on a significance level of 10% (p Ö0.10).

6.4.3 Predictive Relevance

According to Chin (1998) and Hair et al. (2011b), assessing the predictive relevance is as important as evaluating the magnitude of path coefficients using R^2. The predictive relevance can be assessed using the Stone-Geisserøs Q^2 criterion developed by Geisser (1974) and Stone (1974). This criterion is a synthesis of cross-validation and function fitting (Chin, 1998; Hair et al., 2011b). The rationale of this criterion is that õthe prediction of observables or potential observables is of much greater relevance than the estimation of what are often artificial construct parametersö (Geisser, 1975, p.320). It has been argued that this criterion fits PLS-SEM õas hand in gloveö (Wold, 1982: p.30).

This criterion is calculated in the PLS-SEM using the blindfolding procedure that omits a part of the data (using omission distance D) for a specific group of indicators while the parameters are estimated, then it attempts to estimate the omitted part using the estimated parameters till every data point to be omitted and estimated (Chin, 1998). The omission distance (D) value is normally chosen between 5 and 10, so the number of valid observations divided by D should not be an integer (Hair et al., 2011a).

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According to Chin (1998), Stone-Geisser's Q^2 criterion can be calculated as follows:

$$Q^2 = 1 - (\hat{U}D \ ED \div \hat{U}D \ OD)$$

Where:

E   the sum of squares of prediction error when the omitted data points are predicted

D   the omission distance

O   the sum of squares of prediction error using the mean of prediction.

Two forms of Q^2 have been suggested in the literature (Chin, 1998; Hair et al., 2011a), namely cross-validated communality and cross-validated redundancy. õA cross-validated communality Q^2 is obtained if prediction of the data points is made by the underlying latent variable score, whereas a cross-validated redundancy Q^2 is obtained if prediction is made by those latent variables that predict the block in questionö (Chin, 1998: p.20). In other words, a cross-validated communality Q^2 predicts an observed variable of an endogenous latent variable using only the observed variables of this latent variable, while a cross-validated redundancy Q^2 indirectly assesses the model capacity to predict the observed variables from a prediction of their own latent variables using the related structural relation (Tenenhaus et al., 2005).

While CV-communality measures the quality of the measurement model, CV-redundancy, instead, measures the quality of the structural model (Tenenhaus et al., 2005). Generally speaking, CV-redundancy is more recommended for assessing the predictive relevance in PLS-SEM, as it uses both the estimates of the measurement model and the structural model for data prediction (Hair et al., 2011a). In general, Q2 > 0 indicates a predictive relevance of a model, whereas $Q^2 < 0$ indicates a lack of predictive relevance of a model (Chin, 1998).

In the current study, both CV-communality and CV-redundancy statistics were calculated using the blindfolding procedure in the Smart-PLS software. The results of CV-communality and CV-redundancy statistics (see table 6.7) indicate a positive Q^2 value for all constructs, suggesting a predictive relevance for the tested model in this study. These results imply that the structural relationships proposed in the tested model are not only limited to the current set of data, but also can be used to predict the endogenous latent variables using other sets of data.

Table 6.7: Cross-validated Communality and Redundancy

Construct	Cv-communality	Cv-redundancy
Size	0.4211	
Agency cost	0.0000	
Uncertainty	0.0881	
Strategy	0.5426	
Decentralisation	0.3366	
Compliance*VBM	0.2428	
VBM	0.4491	0.0747
Compliance	0.0000	0.1132
Corporate Entrepreneurship	0.3825	0.2125
Perceived Performance	0.3235	0.2014
Market-based performance	0.000	0.0492

6.4.4 Goodness of Fit

Unlike classic CB-SEM, there is no proper overall criterion for goodness of fit in PLS-SEM (Hulland, 1999; Hair et al., 2011b). While CB-SEM comprises parametric estimation procedures that attempt to reproduce, as closely as possible the observed covariance matrix, PLS-SEMøs main objective is to minimise the error or to maximise the explained variance in endogenous variables measured by R^2 (Hulland, 1999).

Some scholars provide goodness of fit criteria such as the Bentler-Bonett fit index (Bentler and Bonett, 1980) and the global criterion for goodness of fit (Tenenhaus et al., 2004). However, these criteria have been criticised for being meaningless as they assume that the estimated model parameters are selected in an attempt to minimise the difference between the observed and the reproduced covariance matrices (Hulland, 1999). Further, the global criterion for goodness of fit is based on the model average R^2 and average communality of reflective models, which is not applicable in the case of formative models or single indicator construct (Hair et al., 2011b). In addition, it is not easy to set a threshold for the acceptable level of goodness of fit measure, as there is no common acceptable threshold of R^2 (Hair et al., 2011b).

This study does not provide any goodness of fit measures because of the inappropriateness of goodness of fit measures to PLS-SEM, especially that some

constructs are measured using single measures (e.g. compliance with the CCCG and the market-based performance).

6.4.5 Multicollinearity

Multicollinearity arises from strong correlation between two or more predictors in the tested model. The best situation for a researcher would be to have high correlation between the independent variables and the dependent variable, but with little correlation among the independent variables (Hair et al., 2010). High level of multicollinearity threatens the validity of results extracted from the tested model, because it leads to incorrect estimation of the regression coefficients and probably its sign as well (Hair et al., 2010). õAs multicollinearity increases, the total variance explained decreases (estimation). Moreover, the amount of unique variance of independent variable is reduced to levels that make estimation of their individual effects quite problematic (explanation)ö (Hair et al., 2010: p.201).

One way to assess multicollinearity is to check the correlation matrix of independent variables. The existence of high correlations between independent variables (in general 0.90 or more) is an indication of a multicollinearity problem (Hair et al., 2010). In the current study the correlation matrix between independent variables (see table 6.8) has been examined, which indicates that there is no high correlation between independent variables (the maximum in the correlation matrix is 0.525).

Table 6.8: Correlation Matrix between Independent Variables (Constructs)

	Size	Agency	Uncert.	Strategy	Dec.	VBM	Comp	CE	Com* VBM
Size	1								
Agenc	0.042	1							
Uncert	0.153	-0.055	1						
Strat.	-0.049	-0.082	0.244	1					
Dec.	0.099	0.169	0.191	0.256	1				
VBM	0.046	0.269	-0.039	-0.178	0.157	1			
Comp	0.148	0.389	-0.026	-0.003	0.289	0.226	1		
CE	0.160	-0.002	0.325	0.525	0.258	-0.021	0.114	1	
Com* VBM	-0.053	-0.073	-0.005	0.073	-0.046	0.071	-0.251	-0.173	1

Multicollinearity can also be assessed using the Variance Inflation Factor (VIF) of independent variables, which indicates whether a predictor has a strong linear relationship with other predictors. The common cut-off threshold of VIF is 10, so if the VIF exceeds this limit it is an indication of a multicollinearity problem (Hair et al., 2010).

Table 6.9: Variance Inflation Factors (VIFs)

	Size	Agency	Uncert.	Strategy	Decent.	VBM	Comp.	CE	Comp*VBM
VBM	1.042	1.053	1.116	1.145	1.147	1.080			
Comp.	1.003	1.079				1.179			
CE	1.061	1.24	1.123	1.204	1.243	1.074	1.385		1.11
Perceived performance						1.074	1.147	1.037	1.11
Market-based Performance						1.08	1.147	1.037	1.11

In the current study the VIFs of independent variables (see table 6.9) have been checked, which indicates that the largest value of VIF is 1.385. These results of the correlation matrix and VIFs provide an assurance that there are no concerns over the mulitcollinearity in this study.

6.5 Hypothesis Testing

In this section the research hypotheses are tested and reported. For this purpose, the hypotheses are classified into four groups. The first group examines the association between contingency factors, VBM and organisational performance. The second group examines the association between contingency factors, compliance with the CCCG and organisational performance. The third group examines the association between contingency factors, CE and organisational performance. The fourth group examines the association between VBM, compliance with the CCCG and CE. In addition, it examines the indirect effect of VBM on performance acting through compliance with the CCCG and CE as intervening variables. Results are presented in table 6.10 and the path coefficients are superimposed on the path diagram in figure (6.1) for ease of interpretation.

Table 6.10: Path Coefficients-Whole Sample (*p* value of the *t* tests in parentheses)

Paths from	Predicted Sign	Paths to VBM	Compliance	CE	Perceived Performance	Market-based Performance
Agency Conflicts	+, +, -	0.223*** (0.008)	0.35*** (<0.001)	-0.008 (0.476)		
Company Size	+, +, -	0.012 (0.454)	0.127*** (0.005)	0.135* (0.071)		
PEU	+, +	-0.013 (0.372)		0.173** (0.049)		
Strategy	+, +	-0.20*** (0.004)		0.501*** (<0.001)		
Decentralisation	+, +	0.171** (0.026)		0.085 (0.213)		
VBM	+, +, +, +		0.125** (0.050)	0.071 (0.194)	-0.105* (0.082)	-0.057 (0.324)
Compliance	-, +, +			0.021 (0.444)	-0.015 (0.443)	0.380*** (<0.001)
CE	+, +				0.628*** (<0.001)	-0.089 (0.236)
VBM*Compliance	-, +, +			-0.199** (0.030)	0.068 (0.216)	0.022 (0.399)
R^2		0.123	O.184	0.391	0.396	0.134

  * *p* Ö0.10, 1 tailed

  ** *p* Ö0.05, 1 tailed

  *** *p* Ö0.01, 1 tailed
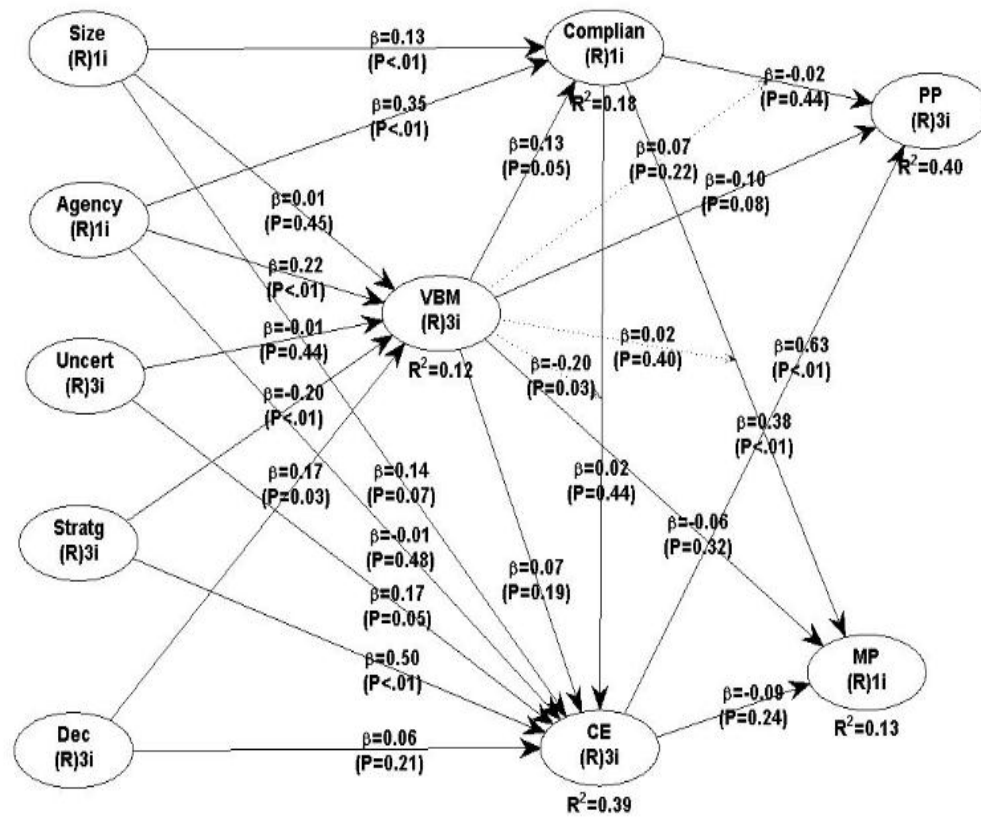
Figure 6.1: Path Diagram with Path Coefficients-Whole Sample

6.5.1 Contingency Factors, VBM and Performance

The study sought to establish that VBM would be associated significantly with company size, agency costs, PEU, strategy and decentralisation, which in turn increases organisational performance. A structural model was developed to examine the association between VBM, contingency factors and organisational performance. This section presents the results of the contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on the one hand, and VBM on the other. In addition, the effect of fit between the contingency factors and VBM on organisational performance will be highlighted.

6.5.1.1 VBM and Performance

Hypothesis (1) predicts that VBM is positively associated with organisational performance. However, the results indicate that VBM is negatively, but not

significantly, related to market-based performance (= -0.057 and *p* = 0.324). Meanwhile, the relationship between VBM and perceived performance is negative and significant (= -0.105 and *p* Ö0.10). Therefore, this hypothesis is not supported.

6.5.1.2 Agency Conflicts and VBM

Hypothesis (2) predicts a positive relationship between VBM and agency conflicts. The results suggest a significant positive association (= 0.223 and *p* Ö0.01) between VBM and agency conflicts, which supports the hypothesised relationship between agency conflicts and VBM. Accordingly, this hypothesis is supported.

6.5.1.3 Company Size and VBM

Hypothesis (3) predicts that VBM is positively associated with company size. However, the non-significant positive coefficient of company size (= 0.013 and *p* = 0.454) does not support the hypothesised relationship between company size and VBM. Therefore, this hypothesis is not supported.

6.5.1.4 PEU and VBM

Hypothesis (4) predicts a positive relationship between PEU and VBM. However, the non-significant negative coefficient of PEU (= -0.013 and *p* = 0.372) does not support the hypothesised relationship between PEU and VBM. Accordingly, this hypothesis is not supported.

6.5.1.5 Strategy and VBM

Hypothesis (5) predicts a positive association between VBM and differentiation strategies. Surprisingly and contrary to the hypothesised relationship, the significant negative coefficient of strategy (= -0.20 and *p* Ö 0.01) suggests that VBM is positively associated with low cost strategies but not with differentiation strategies, as low levels on the strategy scale can be interpreted as low cost strategies. As a result, this hypothesis is not supported.

6.5.1.6 Decentralisation and VBM

Consistent with hypothesis (6), which predicts a positive relationship between decentralization and VBM, a significant positive association (= 0.171 and *p* Ö0.05) was found between decentralisation and VBM. Consequently, this hypothesis is supported.

6.5.2 Contingency factors, Compliance and Performance

This section presents the results of the contingency relationships between agency conflicts, and company size on the one hand; and compliance with the CCCG on the other, in addition to the effect of fit between these contingency factors and compliance with the CCCG on performance.

6.5.2.1 Compliance and Performance

Hypothesis (7) predicts a positive relationship between compliance with the CCCG and organisational performance. Consistent with this hypothesis, the results suggest that compliance with the CCCG is significantly and positively associated (= 0.380 and p Ö 0.01) with market-based performance, but non-significantly associated (= -0.015 and p = 0.443) with perceived performance. Therefore, this hypothesis is partially supported.

6.5.2.2 Agency Conflicts and Compliance

Consistent with hypothesis (8), the results suggest a significant positive association (= 0.35 and p Ö 0.01) between agency conflicts and compliance with the CCCG. Consequently, this hypothesis is supported.

6.5.2.3 Company Size and compliance

Consistent with hypothesis (9) the results suggest a significant positive association (= 0.127 and p Ö 0.01) between company size and compliance with the CCCG. Accordingly, this hypothesis is supported.

6.5.3 Contingency Factors, CE and Performance

This section presents the results of the contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on the one hand, and CE on the other. In addition, it presents the effect of fit between the contingency factors and CE on organisational performance.

6.5.3.1 CE and Performance

Hypothesis (10) predicts a positive relationship between CE and performance. Consistent with this hypothesis, the results suggest that CE is significantly and positively (= 0.628 and p Ö 0.01) associated with perceived performance, but non-significantly associated (= -0.089 and p = 0.236) with market-based performance. Hence, this hypothesis is partially supported.

6.5.3.2 Agency Conflicts and CE

Hypothesis (11) predicts that CE is negatively associated with agency conflicts. However, the results show non-significant negative relationship (= -0.008 and p = 0.476) between agency conflicts and CE, which does not support the hypothesised relationship. As a result, this hypothesis is not supported

6.5.3.3 Company Size and CE

Hypothesis (12) predicts a negative relationship between company size and CE. Surprisingly and contrary to this hypothesis, the results suggest a positive association between company size and CE. This relationship is significant (= 0.135 and p Ö 0.10). Accordingly, this hypothesis is not supported.

6.5.3.4 PEU and CE

Hypothesis (13) predicts a positive association between PEU and CE. Consistent with this hypothesis, the results of the structural model suggest a significant positive relationship (= 0.173 and p Ö 0.05) between CE and PEU. Consequently, this hypothesis is supported.

6.5.3.5 Strategy and CE

Hypothesis (14) predicts a positive association between strategy and CE. Consistent with this hypothesis, the results of the structural model suggest a significant positive relationship (= 0.501 and p Ö 0.01) between strategy and CE. As a result, this hypothesis is supported.

6.5.3.6 Decentralisation and CE

Hypothesis (15) predicts that CE is positively associated with decentralisation. However, the non-significant positive coefficient of decentralisation (= 0.085 and p = 0.213) does not support the hypothesised relationship between decentralisation and CE. Thus, this hypothesis is not supported.

6.5.4 VBM, Compliance and CE

This section presents the results of the inter-relationships between VBM, compliance with the CCCG and CE. Besides, the results of the indirect effect of VBM on organisational performance through compliance with the CCCG and CE as intervening variables are also presented.

6.5.4.1 VBM and Compliance

Hypothesis (16) predicts that VBM is positively associated with compliance with the CCCG. Consistent with this hypothesis, the results suggest a significant positive association ($= 0.125$ and $p \ddot{O} 0.05$) between VBM and compliance with the CCCG. Accordingly, this hypothesis is supported.

6.5.4.2 VBM and CE

Hypothesis (17) predicts that VBM is positively associated with CE. However, the results of the structural model suggest a non-significant positive relationship ($= 0.071$ and $p = 0.194$) between VBM and CE, which does not support the hypothesised relationship between VBM and CE. Therefore, this hypothesis is not supported.

6.5.4.3 Compliance and CE

Hypothesis (18) predicts that compliance with the CCCG is negatively associated with CE, based on the argument that more focus on control and accountability may negatively affect enterprise and innovation (O'Sullivan, 2000). However, the non-significant positive coefficient of compliance with the CCCG ($= 0.021$ and $p = 0.444$) does not support the hypothesised relationship between compliance with the CCCG and CE. Consequently, this hypothesis is not supported.

6.5.4.4 VBM*Compliance and CE

Hypothesis (19) predicts that the interaction between VBM and compliance with the CCCG is negatively associated with CE. Consistent with this hypothesis, the results suggest that the interaction between VBM and compliance with the CCCG is significantly and negatively ($= -0.199$ and $p \ddot{O} 0.05$) associated with CE, which supports this hypothesis.

6.5.4.5 VBM*Compliance and Performance

Hypothesis (20) predicts that the interaction between VBM and compliance with the CCCG is positively associated with performance. However, no significant effect was found for the interaction between VBM and compliance with the CCCG on perceived performance ($= 0.068$ and $p = 0.216$), or even market-based performance ($= 0.022$ and $p = 0.399$). As a result, this hypothesis is not supported.

6.5.4.6 The Mediating Effect of Compliance with the CCCG

Hypothesis (16a) predicts a significant mediating effect of compliance with the CCCG on the relationship between VBM and performance. The mediating effect of

compliance with the CCCG was tested, using the procedures suggested by Baron and Kenny (1986). According to these procedures, to establish mediation effect three equations should be estimated and the following conditions must be satisfied:

õFirst, the independent variable must affect the mediator in the first equation; second, the independent variable must be shown to affect the dependent variable in the second equation; and third, the mediator must affect the dependent variable in the third equationö (Baron and Kenny, 1986: p.1177). To establish mediation, the direct effect of the independent variable on the dependent variable must be less when the mediator exists than its effect without having a mediator (Baron and Kenny, 1986). õPerfect mediation holds if the independent variable has no effect when the mediator is controlledö (Baron and Kenny, 1986: p.1177). Further, the mediation effect implies that the independent variable causes the mediator; therefore, they should be correlated (Baron and Kenny, 1986).

In the current study these conditions were examined using the path coefficients presented in table 6.10 and figure 6.1, as it comprises both the direct and the indirect effects of VBM on performance as follows:

When compliance with the CCCG (mediator) was added to the path between VBM (independent variable) and the market-based performance (dependent variable), the direct relationship between VBM and the market-based performance decreased and became non-significant ($= -0.057$, $p = 0.324$). However, the indirect path between VBM and market-based performance through compliance is all significant, as VBM significantly affects compliance ($= 0.125$, p Ö 0.05), which in turn significantly affects market-based performance ($= 0.380$, p Ö 0.01). This suggests a full mediation effect of compliance with the CCCG on the relationship between VBM and market-based performance.

However, there is no evidence to support any mediation effect of compliance with the CCCG on the relationship between VBM and the perceived performance, as compliance (mediator) is not significantly associated ($= -0.015$, $p = 0.443$) with perceived performance (dependent variable). According to Baron and Kenny (1986), this violates the third condition to establish the mediation effect. In summary, compliance with the CCCG mediates the relationship between VBM and market-based performance, but does not mediate the relationship between VBM and perceived performance. As a result, hypothesis 16a is partially supported.

6.5.4.7 The Mediating Effect of CE

Hypothesis (17a) predicts a significant mediating effect of CE on the relationship between VBM and performance. The mediating effect of CE was tested using the same procedures suggested by Baron and Kenny (1986). However, no evidence supports any mediation effect of CE on the relationship between CE and performance, as VBM (independent variable) is not significantly associated with CE (mediator). According to Baron and Kenny (1986), this violates the first condition to establish a mediation effect. Therefore, hypothesis 17a is not supported at all.

6.6 Assessing Unobserved Data Heterogeneity

ŏPLS-SEM applications are usually based on the assumption that the data stem from a single population. In many real world applications, however, this assumption of homogeneity is unrealistic, as different population parameters are likely to occur for different sub-populationsö (Hair et al., 2011b). Heterogeneity of data or observations can threaten the validity of PLS-SEM results, as different segments are likely to have different population parameters (Hair et al., 2011a). Therefore, assessing the potential sources of heterogeneity using multi-group analysis or moderator analysis is crucial for PLS-SEM results (Rigdon et al., 2010).

While taking the observed heterogeneity into consideration appears to be valuable from the theoretical perspective, heterogeneity is unobservable, in general, and cannot be reasoned to predetermined variables (Hair et al., 2011a). Failing to account for unobserved heterogeneity in data analysis can lead to misleading interpretation of results (Jedidi et al., 1997).

Therefore, a number of complementary techniques are proposed to deal with unobserved heterogeneity. Among these techniques, the Finite Mixture Partial Least Squares (FIMIX-PLS) approach can be considered as the main technique used to date (Hahn et al., 2002; Hair et al., 2011a). FIMIX-PLS approach joins a Finite Mixture procedure with the Expectation-Maximisation (EM), regarding the predictions based on ordinary least squares in PLS-SEM (Hahn et al., 2002).

6.6.1 Finite Mixture Partial Least Squares (FIMIX-PLS)

According to Ringle et al. (2011), FIMIX-PLS first identifies if there are any distinctive groups of observations in the overall data set that may cause heterogeneity in estimating the PLS structural model parameters, and provides indicators of possible

segmentation. In the second step, the researcher should identify an explanatory variable that leads to similar clustering of data, as suggested by FIMIX-PLS outcomes. The third step includes identifying separate sets of data used as new inputs for multi-group analysis using PLS-SEM. FIMIX-PLS does not suggest the number of segments, as the identification of an appropriate number of segments is not straightforward (Ringle et al., 2010) and identifying satisfactory solutions is not possible for several reasons (Wedel and Kamakura, 2000).

However, Hahn et al. (2002) suggest repeated operation of FIMIX-PLS using different numbers of classes and to compare the outcomes of different classes using a number of criteria, such as the lnL, Akaike Information Criterion (AIC), Consistent Information Criterion (CAIC) and the Bayesian Information Criterion (BIC), to provide indicators for identifying an appropriate number of segments (Ringle et al., 2010). In addition, the Entropy Statistic (EN), with value ranging from 0 to 1, indicates the degree of separation in the individually estimated class probabilities (Ramaswamy et al., 1993).The higher the EN (0.5 or above), the higher the quality of separation into number of classes (Ringle et al., 2010).

Table 6.11: Outcomes of FIMIX-PLS

Number of segments	2
Segment 1	58.41% (67 companies)
Segment 2	41.59% (46 companies)
Fit Indices	
AIC	1756.98
BIC	1945.17
CAIC	1945.77
EN	0.6131

In the current study the FIMIX-PLS technique was performed for the whole data set using the Smart-PLS software. The results (see table 6.11) indicate a value for EN equal to 0.6131 (greater than 0.5), which suggest heterogeneity in the data set. Therefore, the sample should be classified into two segments or clusters.

6.6.2 Segmentation and Ex-Post Analysis

The results of FIMIX-PLS suggest segmenting the data set into two groups (segments), as follows: 67 companies in the first segment and 46 companies in the

second segment. After identifying the two segments, the type of stock market was identified as a possible explanatory variable for clustering the data into two segments, as suggested by FIMIX-PLS outcomes.

The justification of selecting the type of stock market, as an explanatory factor for data clustering, is based on the statistics in table 6.12, which indicate that 87% of the companies in segment 1 are listed on the Main Market and 95% of the companies in segment 2 are listed on AIM. This implies that companies in segment 1 have some common characteristics, which are significantly different from the characteristics of companies in segment 2. The different characteristics of companies in the two segments are expected to affect the structural relationships proposed in the tested model.

Table 6.12: Statistics of Segmentation

	Segment 1		Segment 2		Total
	No. of Companies	%	No. of Companies	%	
Main Market	58	87%	2	5%	60
AIM	9	13%	44	95%	53
Total	67	100%	46	100%	113

AIM provides a mechanism for companies looking for access to capital to realise their growth and innovation potential. Since launch in 1995, it has helped over 3,100 companies raise capital of over £67 billion. AIM plays a vital role in the funding environment for small and medium-sized enterprises as they develop their businesses (LSE, 2010).

However, the main differences between the admission criteria and the continuing obligations for AIM and the Main market are presented in table 6.13. After identifying the possible explanatory variable for segmentation, two separate sets of data, as suggested by FIMIX-PLS, were used as new inputs for multi-group analysis using PLS-SEM.

Table 6.13: Comparison between AIM and the Main Market

Main Market	AIM
Minimum market capitalisation	No minimum market capitalisation
Normally three-year trading record required	No trading record requirement
Minimum 25 per cent shares in public hands	No prescribed level of shares to be in public hands
Prior shareholder approval required for substantial acquisitions and disposals (Premium Listing only)	No prior shareholder approval for most transactions
Sponsors needed for certain transactions (Premium Listing only)	Nominated Adviser required at all times
Compliance with the CCCG is compulsory	Compliance with the QCA, based on the CCCG is voluntary.

Source: LSE (2010, p. 6)

6.6.3 Multi-Group Analysis

Multi-group analysis was performed to test the research hypotheses for each segment (group) and to examine any differences between the two segments regarding the structural relationships between the research constructs. Therefore, two sets of data were analysed using PLS-SEM to test the same structural relationships that have been tested before for the whole sample. As suggested by the FIMIX-PLS, the first set of data (segment 1) comprises 67 companies, mostly listed on the Main Market, and the second set of data (segment 2) comprises 46 companies, mostly listed on AIM.

The results of the multi-group analysis are presented in table 6.14, which shows the path coefficients for the two segments in comparison with the whole sample. In addition, the path coefficients are superimposed on the path diagram in figures 6.2 and 6.3 for segment 1 and segment 2 respectively for ease of interpretation.

Table 6.14: Path Coefficients-Whole Sample and Segments (*p* value for the *t* tests in parentheses)

Hypotheses	Predicted Sign	Whole Sample		Segment (1)		Segment (2)	
			p		*p*		*p*
VBM-PP (H1)	+	-0.105*	0.082	-0.016	0.389	-0.224***	0.009
VBM-MP (H1)	+	-0.057	0.324	0.223	0.185	-0.277**	0.049
Agency-VBM (H2)	+	0.223***	0.008	0.069	0.319	0.645***	0.005
Size-VBM (H3)	+	0.012	0.454	0.280	0.445	-0.323*	0.055
Uncertainty-VBM (H4)	+	-0.013	0.372	0.137	0.471	-0.057	0.417
Strategy-VBM (H5)	+	-0.20***	0.004	-0.149	0.460	0.065	0.351
Decent.-VBM (H6)	+	0.171**	0.026	0.404***	<0.001	-0.035	0.439
Compliance-PP (H7)	+	-0.015	0.443	0.019	0.423	0.134	0.198
Compliance- MP (H7)	+	0.380***	<0.001	0.29**	0.031	0.546***	<0.001
Agency -comp. (H8)	+	0.35***	<0.001	0.439***	<0.001	-0.123	0.289
Size-compliance (H9)	+	0.127***	0.005	0.227***	0.001	0.391***	0.002
CE-PP (H10)	+	0.628***	<0.001	0.355***	0.010	0.819***	0.001
CE-MP (H10)	+	-0.089	0.236	-0.148	0.362	0.283***	0.004
Agency -CE (H11)	-	-0.008	0.476	-0.101	0.422	-0.002	0.473
Size-CE (H12)	-	0.135*	0.071	0.254**	0.025	0.093	0.399
Uncertainty-CE (H13)	+	0.173**	0.049	0.385**	0.030	-0.020	0.363
Strategy-CE (H14)	+	0.501***	<0.001	0.299***	0.005	0.748***	0.001
Decent.-CE(H15)	+	0.085	0.213	0.18**	0.033	-0.073	0.407
VBM-Comp (H16)	+	0.125**	0.050	0.237***	0.009	0.232	0.211
VBM-CE (H17)	+	0.071	0.194	-0.281	0.227	0.285**	0.043
Compliance-CE (H18)	-	0.021	0.444	0.376	0.156	-0.28**	0.037
VBM*Comp-CE (H19)	-	-0.199**	0.030	-0.047	0.405	-0.282*	0.074
VBM*Com.-MP (H20)	+	0.022	0.399	-0.128	0.288	0.271**	0.041
VBM*Comp-PP (H20)	+	0.068	0.216	-0.205	0.368	0.191	0.107

* *p* Ö0.10, 1 tailed, ** *p* Ö0.05, 1 tailed, *** *p* Ö0.01, 1 tailed
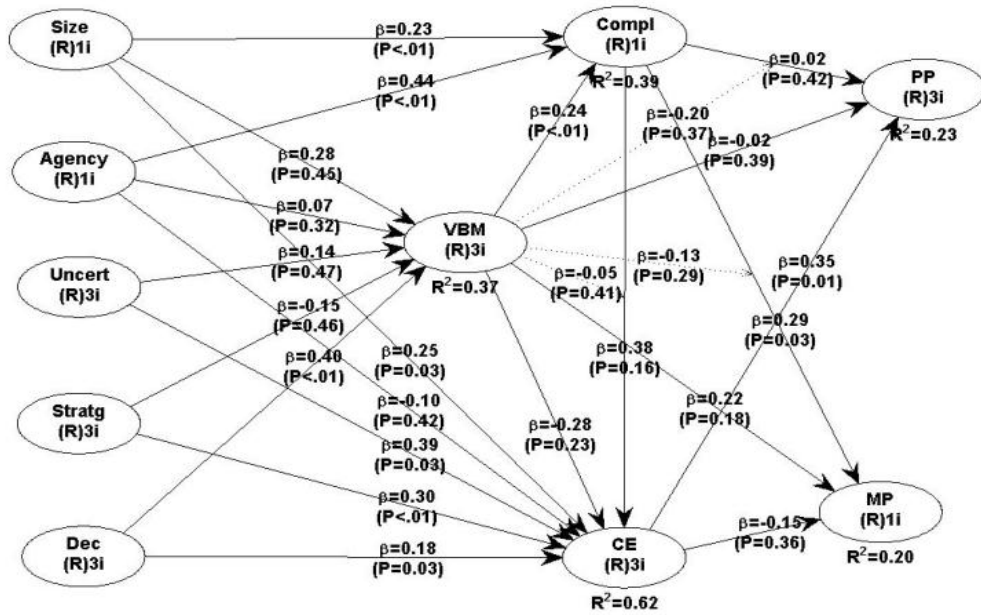
Fig. 6.2: Path Diagram with Path Coefficients- Segment 1
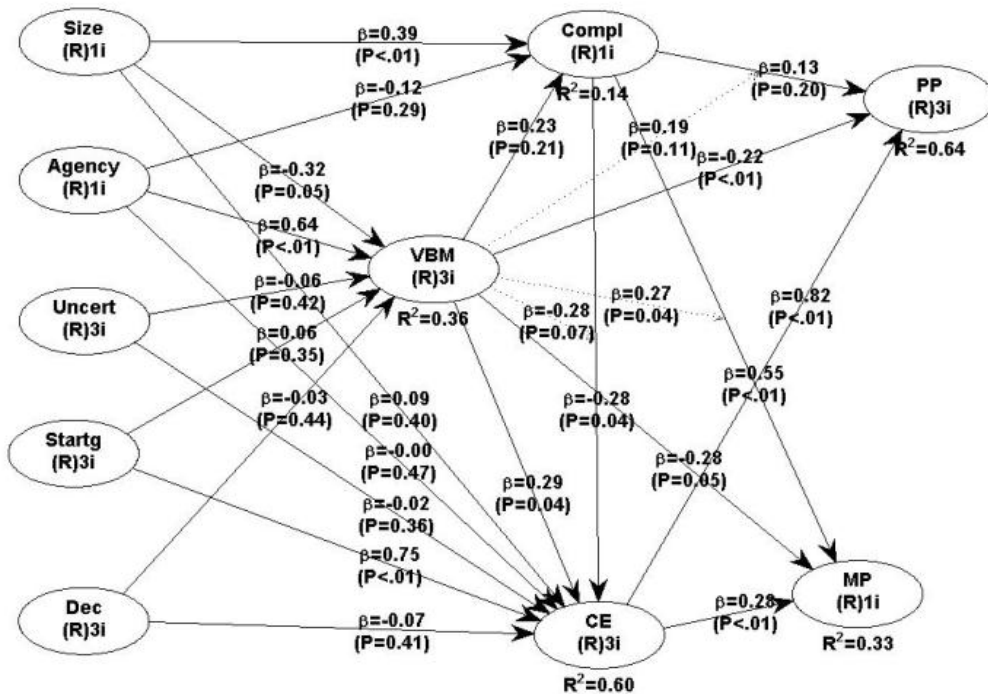
Fig. 6.3: Path Diagram with Path Coefficients- Segment 2

The results of the multi-group analysis, in general, suggest that a large number of the hypothesised relationships between the research constructs vary from one segment to another. Furthermore, the results at the segment level sometimes are different from the results at the whole sample level. These differences will be discussed in detail in the next chapter.

6.7 Summary

This chapter presented the procedures followed to assess the structural model and the results of hypotheses testing. These procedures started with data examination including checking the missing data, outliers and testing the normality assumption. In addition, the descriptive statistics were presented for the research constructs.

The rest of this chapter presented the results of the structural model analysis and hypotheses testing using PLS-SEM. The procedures of assessing the structural model results include path coefficients, R^2, t test, predictive relevance and FIMIX-PLS for assessing unobserved data heterogeneity. The assessment of unobserved data heterogeneity has suggested segmenting the sample data into two groups. Accordingly, data segmentation and multi-group analysis has been performed to examine how the results of hypotheses testing are different between the two groups. A number of the hypothesised relationships were supported (e.g. VBM is positively associated with agency conflicts and decentralisation, compliance with the CCCG is positively associated with agency conflicts and company size, CE is positively associated with PEU, differentiation strategies) and some others were not supported (e.g. VBM is not associated with PEU and company size, CE is not associated with agency conflicts and decentralisation). However, discussing these results will be provided in detail in the next chapter.

Chapter (7)

Discussion

7.1 Introduction

In the previous chapter the research hypotheses were tested and the results were reported. This chapter aims to interpret and discuss the demonstrated results, which can help to answer the research questions and achieve the research objectives. Further, this chapter aims to test two competing models for the direct and indirect relationships between VBM and organisational performance, acting through compliance and CE as intervening variables.

The discussion of results is classified into four main groups according to the groups of hypotheses. The second section of this chapter will discuss the results of hypotheses related to the relationships between contingency factors, VBM and performance. The third section will discuss the results of hypotheses related to the relationships between contingency factors, compliance with the CCCG and performance. The fourth section will discuss the results of hypotheses related to the relationships between contingency factors, CE and performance. The fifth section will discuss the results of hypotheses related to the relationships between VBM, compliance with the CCCG, CE and performance. In the sixth section further analysis for two competing models presenting direct and the indirect relationships between VBM and performance will be discussed. Finally, the seventh section will provide a summary of the chapter.

7.2 Contingency Factors, VBM and Performance

This section discusses in detail the results of the contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on one hand and VBM on the other, in addition to the effect of fit between the contingency factors and VBM on organisational performance.

7.2.1 VBM and Performance

The results indicate, unexpectedly, that VBM is non-significantly associated with market-based performance. Additionally, the relationship between VBM and perceived performance is negative and significant. These results, in general, failed to support hypothesis (1).

This non-significant relationship between VBM and market-based performance is consistent with the results of some previous studies which also failed to find a positive association between VBM and performance. For instance, Dodd and Chen (1996) conclude that other performance measures (e.g. ROA) outperform EVA in explaining the change of stock returns for a sample of US companies. Similarly, Biddle et al. (1997) provide evidence against the effectiveness of EVA in explaining changes in the stock returns compared with earnings before extraordinary items. Hogan and Lewis (2005) also found improvements in operating performance after adoption of EVA, but not statistically different from the non adopters. Interestingly, Cooper and Petry (1994) found a negative association between VBM and organisational performance. These unexpected results have been explained by industry and corporate life-cycle effects, reputation concerns and bureaucratic inefficiencies (Cooper and Petry, 1994).

However, few empirical studies have been conducted in the UK, and most of these studies fail to provide evidence of association between VBM and organisational performance. For instance, Cooper et al. (2001) conclude that VBM companies do not outperform other companies with traditional PMSs. These results have been partly attributed to the difficulty in classifying companies into pure VBM adopters and non-adopters, especially that a large number of companies use value-based measures along with other traditional performance measures. Moreover, other reasons are related to industry's effect, unrepresentative sample and inhomogeneous groups of companies that use different value-based measures.

Similarly, Ismail (2006) provides evidence that net operating profit after tax outperforms EVA and residual income in explaining changes in stock returns for a sample of UK companies. These results have been attributed to the limited ability of one factor (EVA), to explain variations in stock returns, as other factors that may cause changes in stock returns should be taken into consideration including

customers, employees, community satisfaction, product quality and market share growth (Chen and Dodd, 2001; Ismail, 2006).

The non-significant direct relationship between VBM and market-based performance can also be explained by the significant indirect effect of VBM on market-base performance acting through compliance with the CCCG as mediating variable. This implies that the indirect effect of VBM on market-based performance through compliance is more important than the direct effect (Baron and Kenny, 1986).

Further to the negative and significant relationship between VBM and the perceived performance, this can be explained by the emphasis of VBM on the shareholder value creation measured by EP. VBM is critical to the other performance measures (e.g. net profit, ROI) that do not take the cost of capital into consideration. Therefore, VBM implementation may not lead to improved performance measured in other measures (such as traditional financial measures and non-financial performance measures), as they are not among VBM priorities or objectives. Therefore, the negative association between VBM and perceived performance is not surprising, since VBM addresses the limitations of these measures for valuation and decision making (Copeland et al., 2000; Lueg and Schaffer, 2010).

Further to the multi-group analysis, the results, in general, fail to support any significant relationship between VBM and organisational performance at the level of segment 1. However, the negative association between VBM and organisational performance (both market-based and perceived performance) is significant only in segment 2. This can be explained as VBM implementation may not fit small companies, as suggested by prior studies, because its implementation is costly and may not be affordable for small companies. Accordingly, the negative effect of VBM implementation on organisational performance could be significant in small companies (segment 2), because its implementation does not fit this size of companies.

7.2.2 Agency Conflicts and VBM

As expected in hypothesis (2), the results confirm the significant positive association between VBM and agency conflicts. These results are consistent with the agency theory argument that agency conflicts can be resolved using incentive contracts that align the interest of managers and shareholders (Jensen and Meckling, 1976; Jensen and Murphy 1990; Denis, 2001). Outcome-based contracts possibly align the interests

of agents and principals, because the rewards for both groups depend on the same actions (Jensen and Meckling, 1976; Jones and Butler, 1992). Tying managersø incentives to shareholder value creation using the VBM approach is a good example of outcome-based contracts that can be used to align the interests of managers and shareholders. Therefore, the greater the agency conflicts, the more likely it is VBM will be be adopted to mitigate agency conflicts (Lovata and Costigan, 2002).

The results are also consistent with prior research, which argues that VBM reduces the moral hazard problem and aligns the managersø and shareholdersø interests (Stewart, 1991; Lovata and Costigan, 2002), through linking their compensations to shareholder value (Ryan and Trahan, 2007). Lovata and Costigan (2002) also provide empirical evidence on positive association between EVA adoption and agency conflicts, measured by the percentage of management ownership and the percentage of institutional investors, for a sample of US companies.

Further to the multi-group analysis, the results of the whole sample suggest a significant positive relationship between agency conflicts and VBM. However, the positive relationship is significant only for segment 2, and non-significant for segment 1. These differences can be explained as VBM acts not only as a PMS, but also as a CG mechanism to mitigate agency conflicts. The significant association between VBM and agency conflicts in segment 2 can be attributed to the relatively weak CG structure in these companies, due to the lack of compulsory compliance with the CCCG. Therefore, companies in segment 2, especially those with high agency conflicts, may adopt VBM to mitigate these conflicts, especially as most companies in this segment are small sized and cannot afford to comply with many of the CCCG provisions. However, companies in segment 1 can respond to the agency conflicts through compliance with the CCCG, especially they can comply with most, if not all, the CCCG provisions. Accordingly, the demand on VBM in these companies would be less than other companies in segment 2.

7.2.3 Company Size and VBM

Unexpectedly, the results do not support the proposed positive relationship between company size and VBM in hypothesis (3). These results do not support the view that the larger the company size, the more sophisticated the PMS (Haldma and Laats, 2002; Abdel-Kader and Luther, 2008), as the high cost of VBM implementation makes it only affordable to large companies (Boulos et al., 2001).

However, the results are consistent with the findings of some previous studies that fail to provide evidence on the association between VBM implementation and company size. For instance, Ryan and Trahan (2007) provide evidence of improvements in organisational performance after implementing VBM. However, large organisations show fewer improvements than small organisations, which has been explained by the large amount of monitoring costs that large companies may incur (Ryan and Trahan, 2007). Similarly, Garvey and Milbourn (2000) found no significant effect for company size on VBM adoption decision.

Further to the multi-group analysis, the results of the whole sample and segment 1 suggest a non-significant positive relationship between company size and VBM. However, the relationship was significantly negative between company size and VBM in segment 2. These differences can be explained building on the explanation provided in the last hypothesis that VBM may be demanded, as a CG mechanism in companies in segment 2, because of the weak CG structure in these companies.

7.2.4 PEU and VBM

Surprisingly, the results do not support the proposed positive relationship between PEU and VBM in hypothesis (4). These results do not support the view that VBM, as a sophisticated PMS (Abdel-Kader and Luther, 2008), is likely to be adopted in uncertain environments to reduce PEU and improve managerial decision-making (Chong and Chong, 1997).

One possible explanation of the insignificance association between VBM and PEU is that high level of PEU makes performance evaluation more subjective (Govindarajan, 1984), non-accounting style rather than a budget or profit constrained style is more appropriate (Ross, 1995). Therefore, decision makers are likely to seek external, non-financial and ex ante information (Gordon and Narayanan, 1984). In other words, PEU is likely to be associated with a more open, externally focused, non financial style of MCS (Chenhall, 2007).

Based on the above argument, organisations with a greater level of PEU may not adopt VBM because it is more focused on financial measures. Besides, estimating cash flow, as an essential part in calculating value-based measures, under these uncertain conditions is likely to be far from accurate, and managersøperformance will be assessed based on events out of their control, as these measures will not be accurately estimated (Chenhall, 2006). Similarly, Ittner and Larcker (1998) conclude

that VBM implementation may not be appropriate when value-based measures become regularly negative in cyclical industries.

Further to the results of the multi-group analysis, no significant relationship was found between PEU and VBM at any level either for the whole sample or for any segment. However, to the best of the researcherøs knowledge there is no empirical evidence in the VBM literature that can support either view. While the results of the present study provide evidence against VBM as a sophisticated management accounting practice, more empirical studies are needed in this area of research to develop a better understanding for the relationship between VBM implementation and PEU.

7.2.5 Strategy and VBM

Surprisingly, and contrary to the proposed relationship in hypothesis (5), the results suggest that VBM is positively associated with low cost strategies instead of differentiation strategies. These results contradict the view that VBM, as a sophisticated PMS, is likely to be adopted by prospectors/product differentiators/builders (Abdel-Kader and Luther, 2008). One possible explanation for these results is that VBM is based on financial measures.

In general, the financial measures are less relevant than other non-financial performance measures (e.g. developing new products and customer satisfaction) for prospectors/product differentiators/builders, where the main goal is to develop new products. Financial measures are more relevant to defenders/cost leaders/harvestersø, where the main goal is to increase efficiency (Lovata and Costigan, 2002). Therefore, VBM can be more relevant to companies that adopt conservative strategies (cost leadership), where there is less PEU and cash flows are more stable and predictable (Chenhall, 2006).

Interestingly, these results are in line with the findings of Lovata and Costigan (2002), who indicate that prospectors are less likely to use EVA in measuring performance compared with defenders. The findings were also unexpected by Lovata and Costigan (2002), as the proposed accounting adjustments to research and development (R&D) in EVA calculations are central to its contribution to performance measurement over traditional measures. Surprisingly, prospectors (high R&D to sales ratio), õwhose current earnings are less relevant to predict future success tend to use other performance evaluation measures insteadö (Lovata and Costigan, 2002: p. 226).

Accordingly, Lovata and Costigan (2002) conclude that identifying best incentives for managers seems to be more complex than inferred by proponents of EVA. However, the results of the relationships between VBM and both PEU and strategy, in general, cast doubt over the sophistication of VBM as a MAP.

Further to the multi-group analysis, while the results of the whole sample suggest positive association between low cost strategies and VBM, no significant relationship was found between strategy and VBM at the segment level. This may help to explain the unexpected results at the sample level, as the relationship between VBM and strategy is not clear enough at the segment level.

7.2.6 Decentralisation and VBM

As expected in hypothesis (6), the results confirm the positive association between decentralisation and VBM. These results are consistent with the argument that VBM can work only if decision making is decentralised (Bannister and Jesuthasan, 1997) and business units are empowered (Boulos et al., 2001). Empowering business units helps to evaluate the strategic options and subsequent investment, based on maximising the business unitøs long-term EP (Boulos et al., 2001). Further, õdecentralised organisation structure is recommended for value to happen, as this enables transparency and clear communicationö (Copeland et al., 2000: p.96).

The results are also consistent with the findings of McLarenøs (2005) case study of three organisations in New Zealand, commissioned by CIMA. The author points out how EVA cascade down the organisation at divisional, process and product levels. The findings also highlight the importance of decentralised decision making to implement EVA successfully, as its secondary measures (value drivers) lie at the lower levels of organisation, where the interface with customers, suppliers and employees exists. The study also concludes that EVA implementation may not be appropriate in countries with a culture of centralised decision making (McLaren, 2005).

The results are also consistent with the findings of Francis and Minchingtonøs (2002) survey of 258 companies in the UK, which point out the increasing popularity of new measures (e.g. value-based measures) at divisional level. The study also suggests using value drivers as a proxy of shareholder value analysis or EVA at divisional

level, to overcome the theatrical and technical problems of implementing these measures at divisional level and to build goal congruence within organisations.

Further to the multi-group analysis, the results of the whole sample suggest a significant positive relationship between decentralisation and VBM. However, the positive relationship is significant for segment 1 only and not for segment 2. These differences can be explained as decentralisation, in general, becomes important when the company size grows. Therefore, the association between decentralisation and VBM is only significant in the large companies in segment 1.

In summary, the results of the contingency relationships between agency conflicts, company size, PEU, strategy, decentralisation and VBM suggest that, in practice, VBM implementation does not always take place in a context that matches the one proposed in the literature. Further, some of the characteristics of this context seem to be contradictory at times. As predicted, the results provide support to the hypothesised positive association between agency conflicts, decentralisation and VBM. However, the results do not find a significant relationship between VBM and PEU and company size. Interestingly, the results suggest a positive association between VBM and low cost strategies, whereas a positive association has been hypothesised between VBM and differentiation strategies. Moreover, the results fail to find support for the hypothesised positive direct association between VBM and organisational performance.

7.3   Contingency factors, Compliance and Performance

This section discusses the results of the contingency relationship between agency conflicts and company size on one hand, and compliance with the CCCG on the other, in addition to the effect of compliance with the CCCG on organisational performance.

7.3.1 Compliance and Performance

As expected in hypothesis (7) the results confirm the positive association between compliance with the CCCG and market-based performance, but failed to find similar association with perceived performance. The results with respect to perceived performance are expected as CG mechanisms are normally connected in the literature to the investorsø reactions and stock market returns. However, the results with respect to the market-based performance are consistent with the argument of agency theory that monitoring agents (management) behaviour reduces the possible conflict of

interest between principals (shareholders) and agents, minimises agency costs and protects shareholdersø investments (Hendrey and Keil, 2004). Therefore, CG mechanisms are as effectives as they can reduce agency costs and achieve a high level of performance (Aguilera et al., 2008).

The results are also consistent with previous studies that suggest that CG structure is one of the critical factors in shaping firm value and development of financial markets across countries (La Porta et al., 2000). However, in the UK, most previous studies examine the effect of compliance with the Cadbury Report on performance (e.g. Vafeas and Theodorou,1998; Faccio and Lasfer, 1999; Dedman, 2002) with less empirical evidence on compliance with the recent versions of the CCCG (e.g. Arcot et al. 2010). Therefore, these results contribute to the literature and provide empirical evidence of the association between compliance with the CCCG and market-based performance.

The results of the multi-group analysis indicate a significant positive relationship between compliance with the CCCG and market-based performance, at both the sample level and segment level. Similarly, there is no difference between the sample and segments results regarding the non-significant relationship between compliance with the CCCG and perceived performance.

7.3.2 Agency Conflicts and Compliance

As expected in hypothesis (8) the results confirm the positive association between agency conflicts and compliance with the CCCG. These results are consistent with the agency theory argument that resolving agency conflicts require monitoring management (Denis, 2001) through selecting suitable monitoring and bonding control methods to align interests and optimise performance (Jones and Butler, 1992).

The results are in line with the findings of the survey conducted by Shleifer and Vishny (1997), which indicate that õcorporate governance deals with the agency problem: the separation of management and financeö (Shleifer and Vishny, 1997: p. 703). According to Aguilera et al. (2008), a great part of the literature is based on the agency theory premise that a wide range of CG mechanisms can be used to monitor management and restrict managerial opportunism. The literature also provides evidence on positive association between agency conflicts in a company and CG mechanisms that can mitigate these conflicts (Dey, 2008). However, the effectiveness of these mechanisms is determined by reducing agency costs and achieving a high

level of financial performance (Aguilera et al. 2008), which has been supported before in testing the relationship between compliance with the CCCG and performance.

The results of the multi-group analysis suggest a significant positive relationship between agency conflicts and compliance with the CCCG for the whole sample. However, the positive relationship is significant only for segment 1, and non-significant for segment 2. As previously explained in hypothesis (2), companies in the two segments may respond to agency conflicts differently. For instance, companies in segment 1 respond to agency conflicts through compliance with the CCCG due to its compulsory nature and their capabilities to comply with its provisions. Therefore, these companies are likely to have a strong CG structure making VBM implementation, as an additional CG mechanism, less appealing for these companies. This can explain why agency conflicts are significantly associated with compliance with the CCCG and not with VBM in these companies. However, companies in segment 2 respond to agency conflicts through implementing VBM due to the lack of capabilities and enforcement regarding the compliance with the CCCG. Therefore, these companies are likely to have a weak CG structure making VBM implementation, as a CG mechanism, more appealing for these companies. This can explain why agency conflicts are significantly associated with VBM and not with compliance with the CCCG for these companies.

7.3.3 Company Size and Compliance

As expected in hypothesis (9) the results support the proposed positive relationship between company size and compliance with the CCCG. These results are consistent with the agency theory argument that increased company size causes agency conflicts (Jones and Butler, 1992) which, in turn, leads to greater demand on CG mechanisms to mitigate these conflicts (Dey, 2008).

The results are also consistent with prior research, which finds a positive association between company size and CG mechanisms (Gompers et al. 2003). Further, compliance with some provisions of CG codes can be costly and not appropriate to small companies (Arcot et al., 2010). In addition, the fit between compliance with CG codes and company size is important in predicting performance (Haniffa and Hudaib, 2006), which has been supported before in testing the relationship between compliance with the CCCG and performance (hypothesis 7).

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The results of the multi-group analysis indicate a significant positive relationship between company size and compliance with the CCCG at all levels (both sample and segment levels). The results, in general, highlight the importance of company size in explaining the compliance with the CCCG, even within small companies.

In summary, the results of the second group of hypotheses suggest that compliance with the CCCG takes place, to a large extent, in a context that matches the one proposed in the literature. As predicted, the results provide support to the hypothesised positive association between agency conflicts, company size and compliance with the CCCG. Furthermore, the results support the hypothesised positive direct association between compliance with the CCCG codes and market-based performance.

7.4 Contingency Factors, CE and Performance

This section discusses the results of the contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on one hand and CE on the other, in addition to the effect of CE on performance.

7.4.1 CE and Performance

As expected in hypothesis (10), the results support the proposed positive relationship between CE and the perceived performance, but fail to find a similar association with market-based performance. These results are consistent with the view that CE is a key element of organisational success (Lumpkin and Dess, 1996) and prerequisite for yielding a high performance from a new entry (Covin and Slevin, 1991; Zahra, 1993b). This argument has been criticised for being normative (Lumpkin and Dess, 1996), however, the results of the current study provide evidence that support this argument.

Because performance is a multidimensional construct, the relationship between CE and organisational performance is sensitive, to a large extent, to the type of performance measures used (Lampkin and Dess, 1996; Rauch et al., 2009). However, performance measures used in the CE literature include financial performance measures (e.g. sales growth, profitability and wealth creation) (Antoncic and Hisrich, 2004) and non financial performance measures (e.g. satisfaction and overall success ratings by owners or business managers) (Rauch et al., 2009). For instance, previous studies provide evidence of positive association between CE and financial

performance measured by sales growth and profitability (Covin and Slevin, 1986; Zahra, 1991; 1993a; Zahra and Covin, 1995), sales growth but not profitability (Morris and Sexton, 1996), organisation wealth creation, or all of these measures (growth, profitability and wealth creation) (Antoncic and Hisrich, 2004).

In the current study, the positive association between CE and perceived performance can be attributed to the existence of financial and non-financial measures in perceived performance, which is consistent with the results of previous studies. Similarly, the results of multi-group analysis indicate a significant positive relationship between CE and perceived performance, at both sample and segment levels.

Interestingly, the positive relationship between CE and market-based performance is only significant at the level of segment 2. While compliance with the CCCG is the only significant predictor of market-based performance at both sample and segment 1 levels, CE is an important predictor of market-based performance at segment 2 level. While the stock market of segment 2 (AIM) still gives an important weight for compliance with the CCCG, not all companies are expected to comply with the code provisions. Therefore, the entrepreneurial orientation for these companies plays an important role in shareholder value creation.

7.4.2 Agency Conflicts and CE

The results fail to confirm the proposed negative relationship between agency conflicts and CE in hypothesis (11). These results do not support the view that agency conflicts cause agency costs (Jensen and Meckling, 1976) which, in turn, exhaust a company's resources and may constrain innovation and CE (Miller, 2011). The non-significant negative coefficient of agency conflicts can be explained as the negative effect of agency conflicts on CE may be ameliorated by VBM implementation and other CG mechanisms, which act as effective tools to mitigate agency conflicts. The agency conflicts can be partly solved through rewarding agents and increasing their equity stake in the company to bear uncertainty and to overcome risk aversion (Jensen and Meckling, 1976; Fama and Jensen, 1983a; Jones and Butler, 1992).

The results of the multi-group analysis also could not find any significant relationship between agency conflicts on CE at the segment level. However, more empirical studies are needed in this area of research to develop a better understanding of the

relationship between agency conflicts and CE, taking into consideration the CG mechanisms that may affect this relationship.

7.4.3 Company Size and CE

Surprisingly, and contrary to hypothesis (12), the results suggest a positive association between company size and CE instead of the proposed negative association. This contradicts the view that smaller companies may be more entrepreneurial (Mintzberg, 1973), as they are more flexible, and can quickly adapt to changes in environment to take new opportunities (Rauch et al., 2009). The results also contradict the results of some empirical studies, which suggest that company size is negatively associated with internal innovation (Hit et al., 1996). However, the results of some other studies suggest a positive association between CE and company size (Miles and Arnold, 1991). Therefore, some scholars call for further exploration of this relationship (e.g. Antoncic and Hisrich, 2004).

While the results of the current study fail to provide evidence on company size as an antecedent to CE, previous studies examine the moderation effect of company size on the relationship between CE and organisational performance, also with mixed results. For instance, Antoncic and Hisrich (2004) find no significant effect of company size as a control variable on the association between CE and performance. However, Rauch et al. (2009) provide empirical evidence, based on meta- analysis of previous studies, on the moderation effect of company size on the relationship between CE and performance.

According to Rauch et al. (2009), the effect of company size is significantly higher in micro companies (less than 50 employees) than small companies (50-499 employees), but no significant difference exists between small and large companies (more than 500 employees). Conversely, Covin and Covin (1990) found that õvery small firms may not generally benefit from aggressive behaviour in hostile environments the way slightly larger firms often doö (Covin and Covin, 1990: p. 43-44). These results were explained as small companies may need to have minimum size to be able to benefit from adopting aggressive strategies in hostile environments (Covin and Covin,1990).

The mixed results in the literature with regard to the size effect can be explained by the different operational definitions of company size in different studies and different contexts. For instance, small size companies in the US, where most of the empirical studies were conducted, are companies with less than 500 employees, while small

companies in the UK are companies with less than 50 employees. The wide range of small companies in the US allows the largest company, for example, in this group to be many times the size of the smallest company in the same group. Besides, the different ways of testing the size effect (e.g. antecedent or moderator) and different dimensions used to operationally define CE in previous studies have contributed to the inconsistent results.

The multi-group analysis results indicate that while the positive association between company size and CE is significant at the sample and segment 1 level, this association is non-significant at the level of segment 2. This can be explained as a great number of small companies in segment 2 may not generally benefit from the entrepreneurial orientation in hostile environments as larger companies in the same segment (Covin and Covin, 1990). These companies may need to have a minimum size to be able to benefit from entrepreneurial orientation implementing aggressive strategies in hostile environments (Covin and Slovin, 1990).

7.4.4 PEU and CE

As expected in hypothesis (13), the results support the proposed positive relationship between PEU and CE. The results are in line with the view that companies respond to challenging conditions in dynamic environments through innovative behaviour, risk taking and proactiveness (Khandwalla, 1987). According to Miller (1983), the more the dynamic and hostile the external environment, the more the companies will be entrepreneurial. The results are also consistent with prior research, which finds that PEU is positively associated with product innovation (Miller and Friesen, 1982). In another study, Miller (1983) provides evidence on the association between dynamism, hostility and environmental heterogeneity with entrepreneurship.

However, there is a debate in the literature on whether PEU acts as antecedent to CE or only acts as a moderator to the relationship between CE and performance. Many studies suggest a moderating effect of PEU to the relationship between CE and performance. For instance, the findings of Covin and Covinǿs (1990) study suggest a positive association between the aggressive competitive orientation and performance in a hostile environment. Similarly, Covin and Slevin (1989) provide evidence on the moderating effect of environmental hostility on the CE-performance relationship. Also, Dess et al. (1997) argue that PEU and heterogeneity positively moderate the performance of companies with entrepreneurial orientation.

Few studies suggest that PEU is an antecedent to CE which, in turn, mediates the relationship between PEU and performance. For instance, the findings of Zahra (1991) suggest that CE is positively associated with environmental characteristics of dynamism, heterogeneity and hostility. In addition, CE mediates the relationship between the environmental characteristics and performance. Similarly, Zahra (1993a) provides evidence on different combinations of CE (innovation, venturing and renewal) that companies choose from to fit their environmental characteristics (hostility and munificence). This fit is associated with performance.

However, the results of this study support the second stream of studies, which assumes that entrepreneurial orientation of a company is a reflection of the level of PEU that this company is already encountering. The results of this hypothesis together with hypothesis (10) support the notion that CE mediates the relationship between PEU and performance.

The results of the multi-group analysis indicate a significant positive relationship between PEU and CE at the level of the whole sample and segment 1only. However, a non-significant relationship was found at segment 2 level. The non-significant relationship between PEU and CE in segment 2 can be related to the previous hypothesis, as company size in this segment may not meet the minimum level that enables companies to benefit from CE in an uncertain environment.

7.4.5 Strategy and CE

As expected in hypothesis (14), the results support the proposed positive relationship between strategy and CE. These results support the view that CE is closer to differentiation strategies than low cost strategies (Dess et al., 1997). Differentiators rely on strong market abilities, creative flair, product engineering skills and effective coordination across functional areas, whereas low-cost leaders emphasise tight cost controls, process engineering skills, efficient distribution systems and structured sets of organisational responsibilities (Porter, 1980: pp.40-41).

These results are also consistent with prior studies. For instance, the findings of Covin et al. (1994) suggest that companies with build-oriented strategic missions (normally associated with differentiation strategies) outperform companies with hold and harvest-oriented strategic missions (normally associated with low cost strategies), when they adopt entrepreneurially strategic postures. Similarly, Gupta and Govindarajan (1984) found that greater willingness to take risks contributes to

performance in the case of build strategic mission, and hinder it in the case of harvest strategic mission.

However, some studies fail to support the hypothesised relationship. For instance, Dess et al. (1997) found positive association between cost leadership strategies and CE. Similarly, Zahra and Covin (1993), provide evidence of a positive association between cost leadership strategies and new product development. These results have been attributed to the narrow conceptualisation of entrepreneurial strategies and the increased global competition, which challenge managers to find new strategic combinations (Dess et al., 1997).

The results of the multi-group analysis indicate a significant positive relationship between differentiation strategies and CE, at both sample and segment levels. No difference was found between the results at any level, which provides strong support to the hypothesised relationship.

7.4.6 Decentralisation and CE

The results fail to support the proposed positive relationship between decentralisation and CE in hypothesis (15). These results, in general, do not support the view that organic organisation type is more appropriate than mechanistic organisation type for organisations with entrepreneurial orientation (Khandwalla, 1977). The results are also inconsistent with the findings of previous studies that provide evidence on the association between CE and decentralisation (e.g. Covin and Slevin 1991).

One possible explanation of these results is that the appropriate level of centralisation/decentralisation of decision making in an entrepreneurial context depends on the type of structure (simple, planning and organic) (Miller, 1983). For simple companies (small size companies with power centralised at the top), centralisation of decision making is likely to be associated with entrepreneurship, as the leader has the ultimate power to initiate innovations and entrepreneurial ventures (Miller, 1983). Planning firms are bigger, their objectives are smooth and their operations are efficient through the use of formal controls and plans. Like simple firms, power is centralised and the locus of control of the CEO is an important determinant of entrepreneurial orientation (Miller, 1983). In contrast, organic firms endeavour to adapt to their environments and stress expertise-based power and open communication. Unlike simple and planning firms, decentralisation of decision making in organic firms is positively associated with entrepreneurship (Miller, 1983).

Given the wide range of companies used in the current study, possibly with different types of structure, the association between decentralisation and CE is not that clear.

Another possible explanation is that the dimensions of CE, as a multidimensional construct, may vary independently (Lumpkin and Dess, 1996). For instance, organic structure is likely to be associated with the innovativeness dimension of CE, as it embeds decentralisation and low formalisation, which may encourage the autonomy and creativeness required for innovations (Lumpkin and Dess, 1996). However, this structure may negatively affect a firmøs ability to strongly focus on effective competition with industry competitors (competitive aggressiveness). This structure can add some difficulties in integrating and harmonising primary and support activities in a firmøs value chain (Porter, 1980). Therefore, Lumpkin and Dess (1996) hypothesise that in firms with high innovativeness more organic structure will be associated with higher performance, whereas in firms with strong competitive aggressiveness, more organic structure will be associated with lower performance.

The results of the multi-group analysis also provide another possible explanation, which indicate a non-significant relationship between decentralisation and CE, only at the sample and segment 2 levels. However, a significant positive relationship was found at segment 1 level. This can be explained as the decentralised structure, basically, becomes necessary in large companies, as is the case in segment 1. However, a decentralised structure becomes unnecessary and inappropriate in small companies, as is the case in segment 2.

In summary, the results of the structural model of the proposed relationships between the contingency factors and CE, in general, suggest that in practice, CE does not always take place in a context that matches the one proposed in the literature. As predicted, the results provide support to the hypothesised positive association between PEU, differentiation strategies and CE. However, the results could not find a significant relationship between agency conflicts, decentralisation and CE. Interestingly, the results suggest a positive association between company size and CE, whereas a negative association has been hypothesised. Further, the results support the hypothesised positive association between CE and perceived performance.

7.5 VBM, Compliance and CE

This section discusses the results of the inter-relationships between VBM, compliance with the CCCG and CE. Also, the results of the indirect effect of VBM on organisational performance through compliance with the CCCG and CE as intervening variables are also discussed.

7.5.1 VBM and Compliance

As expected in hypothesis (16) the results support the proposed positive relationship between VBM and compliance with the CCCG. The results are consistent with the agency theory argument that the interests of management and shareholders can be aligned through monitoring managers and providing them with incentives (Denis, 2001). Previous studies suggest that VBM can be used to mitigate agency conflicts, as it provides a set of metrics that measure and reward management performance, to align managers and shareholder interests (Ryan and Trahan, 2007). Therefore, VBM can be considered as a form of CG per se (Garvey and Milbourn, 2000; Lander and Reinstein, 2005; Ryan and Trahan, 2007) that works with other CG mechanisms to mitigate agency conflicts.

While equity-based managerial incentives can align the interests of agents and principals (Jensen and Murphy 1990), it may not be sufficient to mitigate agency conflicts (Healy, 1985; Shleifer and Vishny, 1997; Dey, 2008). Other CG mechanisms may be needed to complement VBM, such as board of directors (Fama and Jensen 1983a) and management ownership (Audretsch et al., 2009) to monitor management performance. The results of previous studies also suggest that some CG mechanisms such as managerial ownership can complement VBM and motivate managers making VBM implementation successful (Ryan and Trahan, 2007).

The results of the multi-group analysis indicate that VBM is positively associated with compliance with the CCCG at all levels except for segment 2, where the positive relationship is non-significant. This can be explained by the lack of resources and enforcement for compliance with the CCCG in the companies listed on the AIM.

These results also support the indirect positive association between VBM and organisational performance acting through compliance with CG, as predicted in hypothesis (16a). These results are consistent with the findings of El-Mir and Seboui

(2008) that the convergence or divergence between EVA and the created shareholder value are largely explained by CG practices.

7.5.2 VBM and CE

The results fail to support the proposed positive relationship between VBM and CE in hypothesis (17). These results do not support the view that creating shareholder value requires VBM adopters to exhibit more entrepreneurial orientation. The results imply that companies respond to agency problems through adopting VBM and other CG mechanisms, emphasising the control role of board of directors and paying less attention to CE and the strategy role. This view is consistent with the agency theory assumption that the major role of the board of directors is to monitor agentsø (executives) behaviour to ensure efficiency and safeguard principalsø (owners/shareholders) interests (Zahra and Pearce, 1989: p. 293).

According to Zahra and Pearce (1989), the board of directors undertakes three critical roles (service, strategy and control). From the agency theory perspective, control is the most important role for the board of directors, followed by service and strategy (Zahra and Pearce, 1989). While agency theory has very clear propositions on the monitoring and control role of the board of directors (Eisenhardt, 1989), its standpoint with regard to the strategy role is not as explicit (Hendrey and Keil, 2004). Though agency theorists (e.g. Zahra and Pearce, 1989; McNulty and Pettigrew, 1999) stress the importance of the strategy role of boards of directors, they acknowledge that there is little evidence to support this argument (Hendrey and Keil, 2004).

The results are consistent with the findings of the INSEAD survey of VBM, which suggests that VBM implementation has no impact on a companyøs innovation, but does not encourage seeking new opportunities in new markets or new product areas (Boulos et al., 2001). Similarly, Cooper et al. (2001) point out that the difference between VBM adopters and non-adopters is not statistically significant in terms of innovation capacity.

The results of the multi-group analysis indicate a non-significant relationship between VBM and CE at the levels of whole sample and segment 1. However, a significant positive relationship exists at the level of segment 2. This can be explained as VBM adopters overemphasise compliance with the CCCG at the expense of CE, especially in the Main Market, where the compliance is compulsory. Alternatively, at the level of smaller companies (AIM), CE would be overemphasised at the expense of

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compliance; especially that compliance with the CCCG is voluntary for these companies and may not be feasible.

However, these results also fail to support the indirect positive association between VBM and organisational performance acting through CE, as predicted in hypothesis (17a). However, as there is no evidence of significant association between VBM and CE, the indirect positive association between VBM and performance acting through CE cannot be supported.

7.5.3 Compliance and CE

The results fail to support the negative relationship between compliance with the CCCG and CE as proposed in hypothesis (18). These results do not support the notion of tension between conformance and performance, which is based on the argument that more focus on control and accountability may negatively affect enterprise and innovation (O'Sullivan, 2000). One possible explanation of these results is the flexible regulatory regime in the UK, which has been established and pioneered the principle-based approach to CG (Arcot and Bruno, 2005). Additionally, the code provisions in the UK are constantly subject to revisions and amendments to respond to any concerns raised by companies and any changes in the business environment. Therefore, many versions were issued from the CCCG in the last decade.

Unlike the mandatory regulatory regime, the voluntary nature of compliance with the code provisions allows companies to adopt CG mechanisms that fit these companies and provide disclosure and explanation for non-compliance with any other provisions. The literature suggests that non-compliance with the code provisions for genuine reasons, explained in the annual report, does not negatively affect the company performance (Arcot and Bruno, 2005).

The results also can be explained as compliance with some provisions in the code (e.g. outside directors) may negatively affect CE. Compliance with other provisions (e.g. stock ownership by outside directors) may positively affect CE, and can somewhat mitigate the negative impact of other mechanisms (Zahra, 1996). Therefore, the final effect of compliance with the code provisions may depend on the relative significance of each effect. This can justify the importance of examining the overall effect of compliance with the code provisions, compared with examining the effect of complying with single provisions.

The results of the multi-group analysis indicate a non-significant positive relationship between compliance with the CCCG and CE at the levels of the whole sample and segment 1. However, a significant negative relationship is found at segment 2 level. This can be explained as compliance with the CCCG in smaller companies in AIM may not be feasible or relevant because of limited resources available in these companies. Therefore, compliance with the code provisions at this level can seriously hinder their entrepreneurial activities.

7.5.4 VBM*Compliance and CE

As expected in hypothesis (19), the results support the proposed negative effect of the interaction between VBM and compliance with the CCCG on CE. These results support the notion of tension between accountability and enterprise. Combining VBM, which acts as a CG mechanism, with other CG mechanisms may emphasise more control and accountability at the expense of enterprise and innovation (O'Sullivan, 2000).

The results are in line with the argument of Aguilera et al. (2008) that the advantages of improving legal protection for shareholders through greater disclosure, auditing and control may be sacrificed by over regulating the CG environment in ways that divert it from flexibility and risk taking. The results are also consistent with the notion of complementarities between CG practices, which suggests interaction effects or clustering of characteristics into particular combinations, making some of these combinations more effective than others (Aguilera et al., 2008). However, to the best of the researcherøs knowledge, no empirical evidence was provided in the literature regarding the complementarities between VBM and CG mechanisms. Therefore, these results contribute to the literature by providing insights into the interaction effect of VBM and CG on CE.

The results of the multi-group analysis indicate that the negative effect of the interaction term between VBM and compliance with the CCCG on CE is significant at all levels, except for segment 1. This can be explained by the flexibility of the õcomply or explainö basis used in the UK, which makes compliance with the CCCG provisions possible for the large companies, without seriously damaging their entrepreneurial orientation. However, for small companies in segment 2, while it is not compulsory, compliance with the CCCG can hinder entrepreneurial orientation and offset the significant positive effect of VBM on CE.

7.5.5 VBM*Compliance and Performance

The results fail to support the proposed positive effect of the interaction between VBM and compliance with the CCCG on both market-based performance and perceived performance (hypothesis 20).

The non-significant positive effect of the interaction between VBM and compliance on market-based performance can be explained by the non-significant negative effect of VBM on market-based performance, which probably offsets the significant positive effect of compliance with the CCCG on market-based performance. This implies a possible trade-off between compliance with the CCCG and VBM, especially for companies in segment 1 because they have a strong CG structure. The literature suggests that CG mechanisms may have potential trade-offs in terms of their effectiveness and their effects on organisational performance (Crouch et al. 2005). These results can also be explained by the significant indirect effect of VBM on market-based performance through compliance with the CCCG as an intervening variable, which makes both the direct and interaction effects less significant in predicting market-based performance.

The results of the multi-group analysis indicate that the interaction between VBM and compliance has no significant effect on organisational performance at any level, except for a significant positive effect of the interaction on market-based performance at the level of segment 2. These results suggest that there is no trade-off between compliance with the CCCG and VBM for companies in segment 2, especially that they already have weak CG structure.

Further, the non-significant positive effect of the interaction between VBM and compliance on perceived performance is expected, as both VBM and compliance with the CCCG do not target these measures of performance. Also, the negative direct effects of both VBM and compliance with the CCCG on perceived performance are either non-significant or significant at level p Ö 0.10.

In summary, the results of the fourth group of hypotheses provide support to the hypothesised positive association between VBM and compliance with the CCCG, but not with CE. However, the results do find negative association between compliance with the CCCG and CE. Furthermore, the results support the positive indirect effect of VBM on market-based performance acting through compliance with the CCCG as an intervening variable, with less support to the other forms of effect (direct effect and

interaction effect). However, the results fail to support the indirect positive effect of VBM on performance acting through CE as intervening variable.

7.6 Further Analysis

Following the Shield et al. (2000) approach for testing competing models, two models were developed and tested on the effects of VBM on organisational performance using PLS-SEM. The direct model proposes tha VBM directly affects organisational performance, whereas the indirect model proposes that the effect of VBM on organisational performance is indirect acting through the mediating influence of compliance with the CCCG and CE.

Previous studies in the VBM literature assume that VBM directly affects organisational performance. Therefore, these studies investigate either the independent direct effect of VBM or the interaction direct effects of VBM with other moderator variables (e.g environmental and organisational factors) on organisational performance. However, to the best of the researcherøs knowledge, no previous studies have investigated the indirect effect of VBM on organisational performance. Unlike previous studies, this study examines the indirect effect of VBM on performance, in addition to the direct effect. õInvestigating the indirect and total effects can help to answer important questions that are not addressed by examining the direct effectsö (Bollen, 1989: p. 376), especially when the results of previous studies are equivocal.

7.6.1 The Direct Effect Model

The direct effect of VBM on performance has been investigated in many previous studies (e.g. Stewart, 1991, 1994; Dodd and Chen, 1996; Grant, 1996; Biddle et al., 1997; Chen and Dodd, 1997; Lehn and Makhija, 1997; Bao and Bao, 1998; Young and OøByrne, 2001). These studies rely on arguments of superiority of residual income variants over traditional performance measures (e.g. ROI), which are basically drawn from the finance theory (Seal, 2010). The evidence from these studies is, to a large extent, mixed and the majority of these studies fail to support a positive direct effect for VBM on organisational performance.
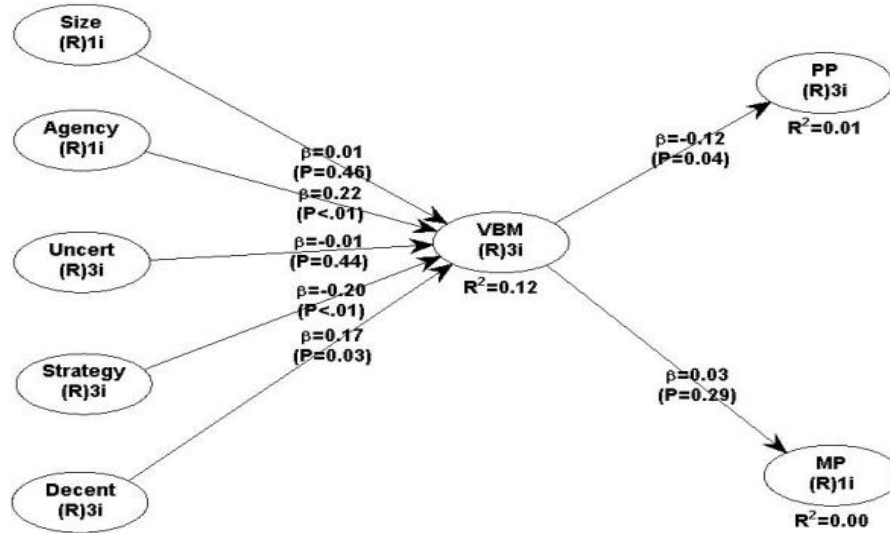
Figure 7.1: The Direct Effect Model

However, the direct model in the current study, as presented in figure 7.1, is not an exception. In line with a large number of previous studies, the results of the direct model fail to provide evidence of a significant direct effect of VBM on market-based performance. Unsurprisingly, the results suggest a significant direct and negative effect of VBM on perceived performance, as the theoretical foundation of VBM does not assume any positive association between VBM and perceived performance. Instead, VBM builds on the premise of the subjectivity and inappropriateness of traditional performance measures (e.g. net profit) for measuring shareholder value, as these measures do not take into consideration the cost of capital.

7.6.2 The Indirect Effect Model

Unlike previous studies, the indirect model proposes that the effect of VBM on organisational performance is indirect, acting through compliance with the CCCG and CE as intervening variables. The indirect model builds on the premise of the EG framework. The basic notion of the EG framework is that good CG or conformance on its own cannot make a company successful, the performance dimension that focuses on strategy and value creation is rather important, and achieving the balance between the two dimensions is crucial (Connell, 2004). Accordingly, the indirect model assesses the effectiveness of VBM in achieving the balance between conformance (compliance with the CCCG) and performance (CE) dimensions of EG.

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The results of the indirect model in the current study, as presented in figure 7.2, suggest that VBM has a significant indirect positive effect on market-based performance acting through compliance with the CCCG as an intervening variable. However, the results fail to support the mediating effect of CE on the relationship between VBM and organisational performance in general, because VBM is not associated with CE.
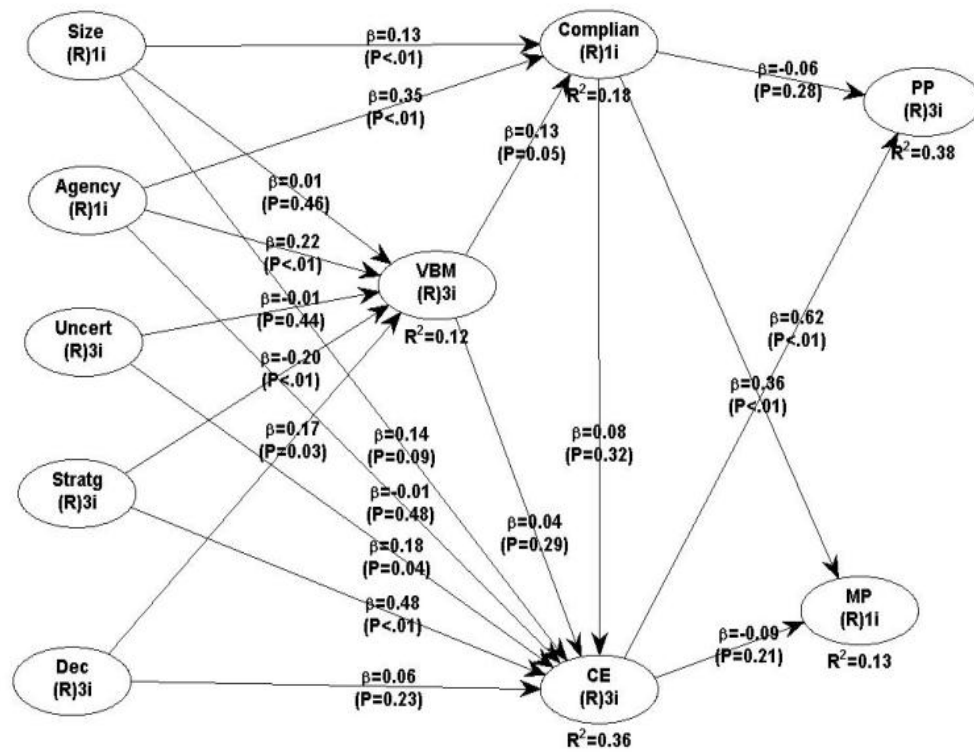
Figure 7.2: The Indirect Effect Model

The indirect model suggests that both compliance with the CCCG and CE are important in predicting organisational performance. While compliance with the CCCG is positively associated with market-based performance, CE is positively associated with perceived performance. However, the results suggest that VBM is only positively associated with compliance with the CCCG, but not with CE, which can help explain the mixed results in previous studies that assume only direct effect.

These results support the argument that VBM aims to mitigate agency conflicts and align the interests of management and shareholders. Therefore, VBM implementation is likely to be complemented with other CG mechanisms to acheive this objective which, subsequently, can lead to increased market-based performance. However,

VBM gives less attention to CE, which implies that VBM fails to balance the conformance and performance dimensions. These results diagnose and provide insights into some problems and weaknesses regarding VBM implementaion. Developing a better understanding of these problems and weaknesses can help to improve practice and clear some of the ambiguity from previous studies.

7.6.3 Testing the Competing Models

As this study uses PLS-SEM for statistical data analysis, where there is no generally accepted global measure of goodness of fit (Hair et al., 2011a), the comparison between the proposed models cannot be performed based on goodness of fit measures, as suggested by the studies based on CB-SEM (e.g. Shields et al., 2000). Therefore, the comparison will be based on the change in R^2, as a main evaluation criterion for models based on PLS-SEM.

This study used the change in R^2 to evaluate the competing models, as suggested by Chin (1998). This method, in general, can be used to examine whether a particular independent latent variable has a significant impact on a dependent latent variable in two steps (Chin, 1998). In the first step change in R^2 is calculated through comparing R^2 before and after adding a particular independent latent variable to the model. The second step is to relate the change in R^2 to (1- R^2) getting the effect size f^2, which can be of small, medium, or large effect on the structural model, if f^2 equal to 0.02, 0.15 and 0.35 respectively (Chin, 1998).

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1- R^2_{included}}$$

Applying this formula to both perceived performance and market-based performance gives the following results.

$$f^2 \text{ (Perceived Performance)} = \frac{0.38 \text{ó } 0.01}{1- 0.38}$$

$$= 0.60$$

$$f^2 \text{ (Market-based Performance)} = \frac{0.13 \text{ ó } 0.0}{1- 0.13}$$

$$= 0.15$$

The results suggest that including compliance with the CCCG and CE have a significant effect on predicting changes in organisational performance in general. The effect size on perceived performance is large (f^2 is greater than 0.35) and medium on market-based performance (f^2 equal to 0.15).

7.7 Summary

This chapter discussed the results of the hypotheses testing as suggested by the structural model in the previous chapter. The discussion included explanation of the results from the theory and prior literature. In addition, the chapter discussed the results of the multi-group analysis and the differences between the two segments in the study sample. Finally, the last part of this chapter presented a further analysis including assessment of the direct and indirect effect models to examine the indirect effect of VBM on organisational performance acting through compliance with the CCCG and CE.

Chapter 8

Conclusions

8.1 Introduction

This study addresses the tension between conformance and performance dimensions within the EG framework. This framework broadens the concept of governance beyond the compliance to a set of rules, to include the performance aspects of governance that focus on strategy, entrepreneurial orientation and value creation. So, the CG system focuses not only on monitoring managerial performance to ensure accountability of management to shareholders, but also on mechanisms that motivate management to create and optimise shareholder wealth. The main objective of the EG framework is to keep a balance between the conformance and performance dimensions of governance. However, few studies address this framework and the possible tension between conformance and performance. Further, there is little agreement on the relationship between conformance and performance in the governance context among the few studies that have addressed this issue.

To address the possible tension between conformance and performance, this study combines agency theory and contingency theory lenses to develop a theoretical model of EG. Agency theory is used because the research problem is basically based on the agency problem that results from the separation of ownership and control. Contingency theory, as a more contextualised theory, is used to explain the organisational performance as a fit between contingency factors and structure. The theoretical model is based on the notion that both conformance and performance dimensions are important predictors of organisational performance providing they fit with the context. Further, the effectiveness of PMS, such as VBM can be assessed through examining its association with the conformance and performance dimensions of EG, as important predictors of organisational performance. The conformance dimension is operationalised in the current study using CG structure, and the performance dimension is operationalised using CE. In addition, a number of contingency factors are examined including agency conflicts, company size, PEU, strategy and decentralisation.

To test the theoretical model a positivist approach is adopted, and a cross-sectional survey methodology is used for a sample of UK quoted companies. The UK is an interesting context to conduct this study, where the development of the regulatory framework of CG provides a good example of the debate on the accountability and enterprise aspects of governance. The data are collected using multiple methods including questionnaire, content analysis and archive databases. Further, PLS-SEM is adopted for data analysis and testing the research hypotheses.

The second section in this chapter will provide a summary of the research findings, based on the data analysis and the tested hypotheses. In the third section, the research questions will be recalled in an attempt to find answers to these questions, based on the findings of this study. The fourth section will present the main conclusions of this study, based on the main findings and the answers of the research questions. In the fifth section, the main contributions of this study will be outlined. The last section of this chapter will present the limitations of this study and the possible directions for future research.

8.2   Summary of Research Findings

Testing the proposed contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on one hand and compliance with the CCCG, CE and VBM on the other indicate the following results:

1- VBM is positively associated with agency conflicts, decentralisation and unexpectedly low cost strategies. However, VBM is not significantly associated with PEU and company size.
2- Compliance with the CCCG is positively associated with agency conflicts and company size.
3- CE is positively associated with PEU, differentiation strategies and company size. However, it is not significantly associated with agency conflicts and decentralisation.
4- The fit between compliance with the CCCG, agency conflicts and company size significantly predicts market-based performance, but not perceived performance.

5- The fit between CE, PEU, differentiation strategies and company size significantly predicts perceived performance, but not market-based performance.

6- The effect of fit between VBM, agency conflicts, decentralisation and low cost strategies on organisational performance shows mixed results. Further to the direct effect on organisational performance, the fit has a significant negative effect on market-based performance, but no significant direct effect on perceived performance is found. However, VBM indirectly has a significant positive effect on market-based performance, acting through compliance with the CCCG as an intervening variable.

7- VBM is significantly and positively associated with the compliance with the CCCG. However, VBM is not significantly associated with CE.

8- No evidence is found for significant association between compliance with the CCCG and CE.

9- Though the interaction term between VBM and compliance with the CCCG has no significant effect on organisational performance, it has a significant negative effect on CE.

The results, in general, support a number of contingency relationships between the proposed contingency factors on one hand and VBM, compliance with the CCCG and CE on the other. It also suggests that using both compliance with the CCCG and CE as intervening variables to the relationship between VBM and performance contribute to explaining the mixed results in the VBM literature. In terms of the objectives of the EG framework, no evidence is found to support that VBM can achieve the balance between the conformance and performance dimensions. VBM is likely to emphasise the compliance with the CCCG (conformance) at the expense of CE (performance). Based on these findings, the research questions can be recalled in an attempt to find some answers to these questions, as will be explained in the next section.

8.3 Restatement of Research Questions

This study addresses four main questions, as stated in the first chapter. These questions are as follows:

1- Is there any potential trade-off or tension between conformance and performance?

2- Does VBM achieve the objectives of EG, keeping the balance between conformance and performance?

3- Is there any contingency relationship between agency conflicts, company size, PEU, strategy and decentralization on the one hand, and VBM, the conformance and performance dimensions of EG on the other ?

4- Does the fit between contingency factors, VBM, and the conformance and performance dimensions of EG positively affect organisational performance?

To address the research questions a theoretical framework was developed and the proposed hypotheses have been tested based on the data analysis. This section discusses the possible answers to these questions based on the research findings.

8.3.1 The First Research Question

The study first questioned the tension between conformance and performance, as it is not clear from the literature whether this tension exists or not. Further, the debate on the tension between conformance and performance lacked empirical evidence. To address this question this study operationally defines the conformance and performance dimensions as CG and CE respectively. CG is measured using the compliance with the CCCG in the UK and CE is measured using innovation, proactiveness and competitive aggressiveness for the same companies.

The structural relationship between compliance with the CCCG and CE is assessed using PLS-SEM. The results suggest a non-significant association between compliance with the CCCG and CE. This relationship is particularly applicable to the companies listed on the Main Market, where compliance with the CCCG is compulsory. However, compliance with the CCCG in the companies listed on AIM (segment 2), which is voluntary, has a significant negative effect on CE.

The non-significant relationships between compliance with the CCCG and CE, for the companies listed on the Main Market, have been attributed to the flexible regulatory regime in the UK, as a pioneer to the principle-based approach to CG (Arcot and Bruno, 2005). The õcomply or explainö basis of the code provisions allows companies listed on the Main Market to flexibly adopt CG mechanisms that fit these companies and provide disclosure and explanation for non-compliance with any other provisions. More flexibility adds to the system through the continuous revisions and amendments to the code provisions that allow addressing any concerns raised by companies regarding their compliance with the code provisions.

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However, compliance with the CCCG by companies listed on AIM can significantly hinder their entrepreneurial orientation, because most of these companies are small sized and may not have enough resources to comply with many of the code provisions. Therefore, compliance with the code provisions is not compulsory in this type of company.

Accordingly, it can be concluded that, in general, there is no evidence either of association or conflict between conformance and performance in the companies listed on the Main Market. However, there is evidence of conflict between conformance and performance at the level of the companies listed on AIM. Further, more emphasis on conformance through adopting additional forms of governance (e.g. VBM) to the compliance with the CCCG can negatively affect the performance dimension, especially in the companies listed on AIM.

8.3.2 The Second Research Question

The second research question is related to the extent to which VBM can achieve EG objectives keeping the balance between conformance and performance. To address this question, this study examines the association between VBM and both the levels of CE and compliance with the CCCG in a sample of UK quoted companies. To examine the association between VBM, CE and compliance with the CCCG, the structural relationships between VBM, CE and compliance with the CCCG are tested.

The results suggest a significant positive relationship between VBM and compliance with the CCCG. However, no significant relationship is found between VBM and CE. These relationships between VBM, compliance with the CCCG and CE are particularly applicable to the companies listed on the Main Market, where compliance is compulsory.

These results imply that companies that adopt VBM are likely to be more compliant with the CCCG than other companies to mitigate agency conflicts and better align the interests of managers and shareholders. However, companies that adopt VBM may not pay similar attention to CE. Therefore, the results suggest that VBM adopters fail to keep a balance between conformance and performance, which may help to explain the conflicting results in the VBM literature. These results can be explained from the agency theory perspective, which assumes that the board of directors consider control as the most important role and the strategy role comes next in importance (Zahra and Pearce, 1989).

8.3.3 The Third Research Question

The third research question is related to the contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on the one hand, and VBM, compliance with the CCCG and CE on the other. To address this question this study examines the association between these contingency factors, VBM, compliance with the CCCG and CE.

To examine this association the structural relationships between VBM, compliance with the CCCG and CE are tested. The results, in general, suggest that VBM is likely to be associated with agency conflicts and decentralisation as expected. However, VBM implementation is not associated with PEU and company size. Surprisingly, VBM implementation is associated with low cost strategies, but not with differentiation strategies as hypothesised.

The results also suggest that compliance with the CCCG is likely to be associated with agency conflicts and company size, as predicted. Furthermore, the results suggest that CE is positively associated with PEU, differentiation strategies as predicted. However, CE is not associated with agency conflicts and decentralisation. Interestingly, CE is positively associated with company size and CE, whereas a negative association is hypothesised.

In summary, the results, in general, provide evidence of contingency relationships between agency conflicts, company size, PEU, strategy and decentralisation on one hand, and VBM, compliance with the CCCG and CE on the other. While not all the predicted relationships are supported, a large number of the proposed contingency relationships are. In addition, justification and explanation of the unsupported relationships has been provided in the previous chapter.

8.3.4 The Fourth Research Question

The fourth research question is related to the effect of the fit between the contingency factors, VBM, compliance with the CCCG and CE on organisational performance. To address this question the study examines the effect of the association between the contingency factors, VBM, compliance with the CCCG and CE on organisational performance. To examine these relationships, the structural relationships between VBM, compliance with the CCCG, CE and performance are tested.

The results support the basic assumption of the contingency theory that fit between contingency factors and structure is associated with organisational performance. For instance, the fit between agency conflicts, company size and compliance with the CCCG is associated with the market-based performance. The fit between PEU, differentiation strategies, company size and CE is associated with the perceived performance. Further, the results suggest that the fit between agency conflicts, decentralisation, low cost strategies and VBM is indirectly associated with market-based performance acting through compliance with the CCCG as an intervening variable. Based on this discussion for the research questions and the main findings, a number of conclusions can be inferred, as will be explained in the next section.

8.4   Conclusions

This study has analysed the EG framework in the UK, where the context and the regulatory framework emphasise the need for a CG system to address both accountability and enterprise and the interaction between these aspects (Short et al., 1999). The study provides evidence in support of the regulatory governance framework in the UK. The results, in general, do not provide evidence of a significant association between compliance with the CCCG and CE. The results imply that UK companies can comply with the CCCG for the sake of accountability to shareholders, without any fear of losing their entrepreneurial orientation and value creation. This can be attributed to the flexibility embedded in the õcomply or explainö approach adopted in the UK, which allows companies not to comply with the code provisions for genuine reasons that can be explained in their annual reports. Further, the compliance requirements with the code provisions vary according to the company size and the code provisions are subject to regular revisions to correspond to any changes or concerns that may arise in the business society.

However, the results provide evidence of significant negative effect of compliance with the CCCG provisions on the entrepreneurial orientation of the companies listed on AIM. Compliance with the CCCG in small companies with limited resources may not be relevant or practical, which may hinder the entrepreneurial orientation of these companies. Furthermore, while both compliance with the CCCG and VBM have no significant direct effect on CE, the interaction term between VBM and compliance with the CCCG may negatively affect CE, which can be explained as combining VBM, which acts as a CG mechanism, with other CG mechanisms may forcing

companies to overemphasise the control and accountability dimensions of governance, at the expense of the performance dimension. This negative effect is clearer in companies listed on AIM.

The study provides evidence against VBM in achieving the objectives of EG in terms of keeping the balance between conformance and performance. VBM is significantly associated with compliance with the CCCG but not with CE, which implies that VBM tends to emphasise more the conformance dimension, than the performance dimension of EG. In other words, VBM implementation prioritises accountability over enterprise. This conclusion is basically applicable to the companies listed on the Main Market. However, the situation in the companies listed on AIM is different. VBM is significantly associated with CE, but not with compliance. This implies that VBM, at the level of small companies, tends to emphasise more the performance dimension than the conformance dimension of EG. These findings can be attributed to the non-compulsory nature of compliance with the CCCG in these companies, besides the relative importance of CE to smaller companies.

Further, the association between VBM and compliance can be explained by the common antecedents between VBM and compliance with the CCCG (e.g. agency conflicts), which are different from some antecedents to CE (e.g. strategy). Therefore, VBM implementation is likely to be associated with strong CG structure as the context of high agency conflicts fits these practices. However, this context is unlikely to fit CE, which requires different antecedents. The similarities between the antecedents to both VBM and CG, which are less similar with the antecedents to CE, make the ability of VBM to balance conformance and performance questionable.

The study also provides evidence of contingency relationships between VBM, agency conflicts, decentralisation and low cost strategies. This evidence contributes to the literature, which lacks evidence on such relationships regarding VBM practices. The supported contingency relationships in the current study highlight the importance of the agency problem in explaining the decision of adopting VBM as an important governance mechanism to mitigate agency conflicts, which is consistent with the agency theory assumptions. Interestingly, this relationship was clearer at the level of small companies listed on AIM. This unexpected relationship can be explained as these companies may adopt VBM as a governance tool, to mitigate agency conflicts and compensate the weaknesses on their CG structures, given the lack of resources

and the voluntary nature of compliance with the CCCG at this level. However, the literature suggests that VBM implementation may not be appropriate at this level, which rather necessitates much of the resources. This can partly explain the significant negative association between VBM implementation and organisational performance at this level.

Unlike the convention wisdom in the literature, the study provides evidence of association between VBM implementation and low cost strategies, which raises an important question with regard to classifying VBM as a sophisticated MAP, especially when the non-significant negative association between VBM and PEU is also considered. The results contradict the conventional wisdom that sophisticated MAPs are more appropriate to highly uncertain contexts and differentiation strategies. The association between VBM and contexts that are similar to the less sophisticated MAPs can be attributed to the fact that the VBM approach rests solely on financial measures (value-based measures). These measures are based on projection of cash flow, which may not be applicable to a highly uncertain environment.

However, VBM cannot be reduced to a number of financial measures, rather it is a comprehensive management approach, and measuring performance is only part of VBM practices. Interestingly, VBM implementation is significantly associated with decentralisation, which is more appropriate to the sophisticated MAPs. These contradictory findings regarding the context on which VBM operates point out the ambiguity regarding the classification of VBM practices into sophisticated or less sophisticated MAPs. Therefore, this study contends that the ambiguity in judging VBM as sophisticated or less sophisticated MAPs due to combining some antecedents and characteristics of each group, has contributed to the lack of empirical evidence in the literature regarding the appropriate context of VBM implementation.

Accordingly, the implications of misfit between VBM and some contingency factors (e.g. PEU and company size) can partly explain the lack of evidence regarding the existence of direct positive association with organisational performance. In addition, the significant indirect effects of VBM on organisational performance through compliance with the CCCG and CE, as intervening variables, may explain the non-significant direct effect of VBM on organisational performance. For instance, VBM has no significant direct effect on market-based performance overall and at the level

of large companies, because it positively and indirectly affects market-based performance acting through compliance with the CCCG as an intervening variable.

The study also provides evidence on contingency relationships between agency conflicts, company size and compliance with the CCCG, especially at the level of large companies listed on the Main Market, where compliance with the CCCG is of great importance due to the compulsory nature of compliance. Further, the implications of fit between agency conflicts, company size and compliance with the CCCG have a significant positive effect on the market-based performance. Finally, the study provides evidence of contingency relationships between PEU, differentiation strategies, company size and CE. Further, the implications of fit between these contingency factors and CE have a significant positive effect on the perceived performance. These findings have contributed to the literature in different disciplines (e.g. management accounting, CG and entrepreneurship). These contributions will be discussed in detail in the next section.

8.5 Revisiting the research hypotheses

Because of the large number of rejected hypotheses (almost half) in the current study, it was important to revisit these hypotheses in light of the results obtained from the data analysis. Revisiting the hypotheses can provide useful insights into the developed theoretical framework in the current study, especially that some of the proposed relationships are not well established in the literature. Therefore, the four groups of hypotheses were revisited as follows:

The first group of hypotheses relate to the relationships between contingency factors, VBM and organisational performance. Due to the lack of evidence on contingency relationships between VBM and the proposed contingency factors (e.g. PEU and strategy) in the literature, this study adopted the view that VBM is one of the sophisticated MAPs (Abdel-Kader and Luther, 2008). Accordingly, it has been hypothesised that VBM be associated with high PEU, differentiation strategies and decentralised structure. However, VBM as a PMS was criticised as being focused only on financial measures, which may make low PEU, low cost strategies and centralised structure (Lovata and Costigan. 2002). The results of the current study suggest that VBM, as a holistic management approach, combines some characteristics of the sophisticated MAPs and the traditional MAPs that focus only on the financial

measures. Therefore, the results provide evidence of association between VBM and contradictory contingency factors such as low cost strategies and decentralisation. These results suggest that the practice is far more complicated than the simple taxonomies in the contingency-based studies (e.g. sophisticated and traditional MAPs). Additionally, the multi-group analysis has contributed to explaining some of the unexpected results (e.g. the contingency relationship between VBM and strategy).

The results of the second group of hypotheses related to the contingency relationships between agency conflicts, company size, compliance with the CCCG and organisational performance support the proposed relationships and emphasise the importance of CG mechanisms in mitigating agency conflicts. These results support the main assumptions of agency theory.

The results of the third group of hypotheses relate to the relationships between contingency factors, CE and organisational performance support, to a large extent, the proposed relationships. However, the unexpected positive association between company size and CE has been explained by the different operational definitions of company size in the literature. The non significant relationship between decentralisation and CE has been explained by the multi-group analysis. In addition, the non-significant relationship between the agency conflicts and CE has been explained by the role of VBM and CG mechanisms in mitigating the possible negative effect of agency conflicts on CE, which support the assumptions of agency theory.

The results of the fourth group of hypotheses relate to the relationships between VBM, compliance with the CCCG, CE and organisational performance support the proposed association between VBM and compliance with the CCCG but not with CE. These results emphasise the role of VBM in mitigating agency conflicts not only as a PMS, but also as a CG mechanism, which support the assumptions of agency theory. However, the results help to diagnose the problems of VBM implementation in failing to achieve the right balance between conformance and performance. The multi-group analysis has also contributed to explain the unexpected results.

8.6 Research Contributions

This study addresses the possible tension between conformance and performance within the EG framework, and assesses the ability of VBM to maintain the balance between conformance and performance. Achieving the aim of this study contributes to the literature through developing a theoretical model of EG that addresses the possible tension between conformance and performance, based on integrating perspectives from the agency theory and contingency theories. The theoretical model proposes the VBM approach to achieve the objectives of EG, maintaining a balance between conformance and performance. Further, the theoretical model is empirically tested through conducting an empirical study, based on a positivistic approach in the UK. Therefore, this study contributes to the literature at different levels, namely theoretical, methodological and empirical.

At the theoretical level this study bridges the gap between different disciplines including management accounting, CG and entrepreneurship, through developing a conceptual model that links a PMS, i.e. VBM, to CG mechanisms and CE, an area which is under-researched in the literature. Integrating both the contingency theory and the agency theory lenses contributes to the development of a comprehensive model of EG. Unlike previous studies, the developed theoretical model adopts a holistic approach to provide insights into the inter-relationships between VBM, CG and CE, as important predictors of organisational performance, rather than investigating the effect of each of these practices separately on organisational performance.

At the methodological level, unlike previous studies that have addressed the EG framework, this study operationalises the conformance and performance dimensions into measurable constructs using CG and CE. This study also conducts an empirical study using a positivistic approach for more generalisable findings. Unlike previous studies in the VBM literature, this study measures VBM practices on a continuum rather than categories, to capture the variation in VBM practices between companies. Further, the use of multiple data collection methods (e.g. questionnaire, content analysis and archive data) provides a consistent body of evidence that increase the confidence in the findings (Ittner and Larcker, 2001). Finally, using a powerful statistical technique of multivariate data analysis (PLS-SEM) enables examination of multiple relationships between constructs simultaneously and obtains robust findings.

At the empirical level, the study is undertaken in the UK; though it is different from the US in many aspects, very few studies have been conducted in this context in a number of research areas such as VBM, CG and CE. Unlike previous studies, which have focused mainly on large quoted companies, the study sample comprises a wide range of quoted companies in the UK, with different regulatory frameworks to gain insights into the relationship between conformance and performance in different forms of companies.

Finally, the findings of the current study contribute to developing a better understanding of a number of issues. For instance, the study provides evidence against the argument of the tension between conformance and performance at the level of the companies listed in the Main Market, which ensures the flexibility of the adopted regulatory regime of CG in the UK. However, the study provides evidence against compliance with the CCCG at the level of companies listed in AIM, as it negatively affects their entrepreneurial orientations. Furthermore, the study provides evidence of association between VBM and agency conflicts, strategy and decentralisation. The findings suggest that VBM does not achieve the objectives of EG, as a result of the overemphasis on conformance at the expense of performance, which can contribute to explaining the mixed results in the VBM literature. However, the current study is not without limitations. These limitations and venues for future research will be explained in detail in the next section.

8.7   Limitations and Directions of Future Research

Though the aforementioned merits of this study, a number of limitations can be mentioned to be addressed in future research. These limitations can be classified into theoretical, methodological and empirical limitations.

At the theoretical level, because of the complexity of the theoretical model in the current study, organisational factors related to VBM success (e.g. top management support and training management and employees on VBM implementation) are not considered in the theoretical model. Future studies can explicitly address the effects of these factors as moderators of the relationships between VBM and organisational performance.

In addition, this study does not examine the effect of compliance with each of the CCCG provisions on the other constructs (e.g. CE and organisational performance).

However, future research can examine these relationships to gain insights into the effect of compliance with the individual provisions of the CCCG on CE and organisational performance.

The theoretical framework is based on agency theory and contingency theory. Although integrating both theories has contributed to developing a comprehensive theoretical framework to address the research problem, both theories have been criticised for ignoring the social power and factors that may affect the choices and practices of a company. So, using more socially oriented theoretical lenses, such as the institutional theory, in future research can help to gain insights into the social factors that may influence the conformance and performance dimensions of EG. In addition, using the agency theory perspective in developing the theoretical framework, which focuses on the relationship between management and shareholders only, ignoring other stakeholders, has contributed to a narrow perspective to the EG framework. Using other theoretical perspectives (e.g. stakeholder theory), which considers other stakeholders, in future research can contribute to a wider perspective to the EG framework.

At the methodological level, this study uses a cross sectional survey methodology, which does not establish causality relationships between constructs. Studies which embrace a longitudinal perspective and panel data for a number of years would be in a position to see how the dynamics of VBM implementation and its relationships with compliance and CE develop and change over time.

Further, because the sample size is not large enough this study could not distinguish between different VBM measures (e.g. EVA, CFROI) as suggested in the literature. Distinction between the different value-based measures would provide useful insights into possible differences in the results due to using different measures. The sample size in the current study was restricted by the response rate to the survey. The low response rate compromised the generalisability of the findings to the population (UK quoted companies). Other methods that are not restricted by response rate (e.g. panel data analysis or longitudinal study) can be used in future research for larger samples and greater generalisability of findings.

At the empirical level, this study is limited to a sample of UK quoted companies, which may results in the findings being applicable only to this context. Future research can benefit from conducting comparative studies in different contexts with

different regulatory governance frameworks, to develop a better understanding of the relationship between conformance and performance in different contexts.

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Appendices

Appendix 1

The Questionnaire

23 September 2010

Dear
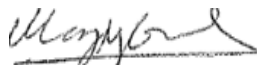
The effect of compliance with the combined code on corporate governance on entrepreneurial activities and performance

We are currently undertaking a research project at Brunel University Business School which investigates how compliance with the combined code on corporate governance can affect a companyøs entrepreneurial activities and performance. We are interested in the possible conflict between compliance and the spirit of enterprise necessary for economic success and whether an approach such as value-based management can mitigate the possible conflict.
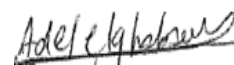
Your views on how the combined code on corporate governance affects your company are important and can help shape future regulation. Therefore, I would be very grateful if you would complete the enclosed questionnaire and return it as soon as possible, using the envelope provided. We are aware that this request is likely to be another burden in a busy schedule, but I have kept the questionnaire as brief as possible and it should only take about 15 minutes to complete. We will be happy to send you a summary of our findings if you wish.

We assure you that all information provided by you will be used for this research purposes only and will be treated as strictly confidential. Information about your organisation will not be released under any circumstances, and the results will be reported in aggregate form within summarised tabulation. Thank you for your co-operation, and looking forward to receiving your response.

Yours sincerely

Magdy Kader
Professor of Accounting
Tel: 01582743156
Email: magdy.abdel-kader@beds.ac.uk

Adel Elgharbawy
Lecturer, PhD candidate
Tel: 018952 66317 **-** 07506175192
Email: adel.elgharbawy@brunel.ac.uk

Section 1: Value-based Management practices

1. How important are the following elements to the <u>mission</u> of your company? *(Tick the box under the number closest to your view)*	Not at all important 1	2	3	4	5	Extremely important 6	7
a. Shareholders	☐	☐	☐	☐	☐	☐	☐
b. Customers	☐	☐	☐	☐	☐	☐	☐
c. Employees	☐	☐	☐	☐	☐	☐	☐
d. Suppliers	☐	☐	☐	☐	☐	☐	☐
e. Social responsibility	☐	☐	☐	☐	☐	☐	☐
f. Environment	☐	☐	☐	☐	☐	☐	☐
g. Other (please specify)……………………………………….	☐	☐	☐	☐	☐	☐	☐

2. How important are the following measures to the <u>strategy and objectives</u> of your company? *(Tick the box under the number closest to your view)*	Not at all important 1	2	3	4	5	Extremely important 6	7
a. Net profit and/or cash flow	☐	☐	☐	☐	☐	☐	☐
b. Share price and/or earnings per share (EPS)	☐	☐	☐	☐	☐	☐	☐
c. Economic profit or Economic Value Added (EVA)®	☐	☐	☐	☐	☐	☐	☐
d. Cash flow return on investment (CFROI)	☐	☐	☐	☐	☐	☐	☐
e. Return on capital employed (ROCE)	☐	☐	☐	☐	☐	☐	☐
f. Total shareholder return (TSR)or total business return (TBR)	☐	☐	☐	☐	☐	☐	☐
g. Efficiency	☐	☐	☐	☐	☐	☐	☐
h. Growth and/or market share	☐	☐	☐	☐	☐	☐	☐
i. Customer satisfaction	☐	☐	☐	☐	☐	☐	☐
j. Other (please specify)………………………………………	☐	☐	☐	☐	☐	☐	☐

3. Which of the following criteria are used when considering <u>strategic and significant decisions</u> (e.g. acquisition, divestment at corporate and at business unit levels? *(Tick as many as apply)*	Corporate (group) level	Business unit level
a. Accounting rate of return	☐	☐
b. Payback period	☐	☐
c. Discounted cash flow (e.g. net present value (NPV) or internal rate of return	☐	☐
d. Residual income or economic profit or Economic Value Added (EVA)®	☐	☐
e. Cash flow return on investment (CFROI)	☐	☐
f. Return on capital employed (ROCE)	☐	☐
g. Total shareholder return (TSR)or total business return (TBR)	☐	☐
h. Growth and/or market share	☐	☐
i. Environmental performance	☐	☐
j. Other (please specify)...................……………………...............	☐	☐

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4. What <u>performance measures</u> are used to evaluate performance at corporate and at business unit levels in your company? *(Tick as many as apply)*	Corporate (group) level	Business unit level
a. Share price and/or earnings per share (EPS)	☐	☐
b. Net profit and/or cash flow	☐	☐
c. Residual income or economic profit or Economic Value Added (EVA)®	☐	☐
d. Cash flow return on investment (CFROI)	☐	☐
e. Return on capital employed (ROCE)	☐	☐
f. Total shareholder return (TSR)or total business return (TBR)	☐	☐
g. Efficiency	☐	☐
h. Growth and/or market share	☐	☐
i. Customer satisfaction	☐	☐
j. Employee satisfaction	☐	☐
k. Quality performance	☐	☐
l. Other (please specify)	☐	☐

5. Is there a managerial incentive scheme for rewarding managers/employees in your company?
Yes ☐   No ☐   (*If no go directly to question 9*)

6. What <u>measures</u> are used for rewarding managers/employees in your managerial incentive scheme at corporate and at business unit levels? *(Tick as many as apply)*	Corporate (group) level	Business unit level
a. Share price and/or earnings per share (EPS)	☐	☐
b. Net profit and/or cash flow	☐	☐
c. Residual income or economic profit or Economic Value Added (EVA)®	☐	☐
d. Cash flow return on investment (CFROI)	☐	☐
e. Return on capital employed (ROCE)	☐	☐
f. Total shareholder return (TSR)or total business return (TBR)	☐	☐
g. Efficiency	☐	☐
h. Growth and/or market Share	☐	☐
i. Customer satisfaction	☐	☐
j. Employee satisfaction	☐	☐
k. Quality performance	☐	☐
l. Other (please specify)	☐	☐

Section 2: Environmental and organisational characteristics

7. To what extent are the changes in these factors predictable? *(Tick the box under the number closest to your view)*	Highly predictable					Highly unpredictabl	
	1	2	3	4	5	6	7
a. Manufacturing technology	☐	☐	☐	☐	☐	☐	☐
b. Competitors' actions	☐	☐	☐	☐	☐	☐	☐
c. Customers' demand and taste	☐	☐	☐	☐	☐	☐	☐
d. Product attributes/design	☐	☐	☐	☐	☐	☐	☐
e. Raw material availability	☐	☐	☐	☐	☐	☐	☐
f. Labour union actions	☐	☐	☐	☐	☐	☐	☐
g. Government regulation	☐	☐	☐	☐	☐	☐	☐

8. To what extent does the Chief Executive of your company delegate decision making to others? (Tick the box under the number closest to your view)	No delegation					Full delegation	
	1	2	3	4	5	6	7
a. Development of new products	☐	☐	☐	☐	☐	☐	☐
b. The hiring and firing of managerial personnel	☐	☐	☐	☐	☐	☐	☐
c. Selection of large new investments	☐	☐	☐	☐	☐	☐	☐
d. Pricing of new products and significant price changes in existing products	☐	☐	☐	☐	☐	☐	☐
e. Budget setting	☐	☐	☐	☐	☐	☐	☐

9. How do you rate your company's position relative to your competitors in the following areas? *(Tick the box under the number closest to your view)*	Significantly lower					Significantly higher	
	1	2	3	4	5	6	7
a. Product sales prices	☐	☐	☐	☐	☐	☐	☐
b. Percentage of sales spent on marketing expenses	☐	☐	☐	☐	☐	☐	☐
c. Percentage of sales spent on research and development	☐	☐	☐	☐	☐	☐	☐
d. Brand image	☐	☐	☐	☐	☐	☐	☐
e. Product features	☐	☐	☐	☐	☐	☐	☐
f. Product quality	☐	☐	☐	☐	☐	☐	☐

10. Each of the following statements describes two extreme positions a company could take in one

situation, *(please* **circle** *the number in each situation that best approximates the actual position of your*

a. In general, the top managers of my company favour……

A strong emphasis on the marketing of **tried** and true	1 2 3 4 5 6 7	A strong emphasis on R&D, technological leadership and **innovations**

b. How many new lines of products or services has your firm marketed in the past 5 years?

No new lines of products/services	1 2 3 4 5 6 7	Very **many** new lines of products/services

c. In my company, changes in product or services lines…

Have been mostly of a **minor** nature	1 2 3 4 5 6 7	Have usually been quite **dramatic**

d. In dealing with its competitors, company…..

Typically **responds** to actions which competitors initiate	1 2 3 4 5 6 7	Typically **initiates** actions which competitors then respond to

e. My company is…..

Very **seldom** the first business to introduce new products/services, administrative techniques and operating technologies	1 2 3 4 5 6 7	Very **often** the first business to introduce new products**/**services, administrative techniques and operating technologies

f. My company……

Typically seeks to **avoid** competitive clashes, preferring a "live-and -let-live" posture	1 2 3 4 5 6 7	Typically **adopts** a very competitive, "undo-the-competitors" posture

g. In general, the top managers of my company have…….

A strong proclivity for **low-risk** projects (with normal and certain rates of return)	1 2 3 4 5 6 7	A strong proclivity for **high-risk** projects (with chances of very high returns)

h. In general, the top managers of my company believe that, owing to the nature of the environment,…

It is best to explore it gradually via careful, **incremental** behaviour	1 2 3 4 5 6 7	**Bold**, wide-ranging acts are necessary to achieve the firm's objectives.

i. When confronted with decision-making situations involving uncertainty, my company….

Typically adopts a cautious, 'wait and see' posture to **minimise** the probability of making costly decisions	1 2 3 4 5 6 7	Typically adopts a bold, aggressive posture to **maximise** the probability of exploiting potential opportunities

j. My company is…..

Making **no special effort** to take business from the competition	1 2 3 4 5 6 7	Very **aggressive** and intensely competitive

k. My company ……

Requires individuals/teams to **rely on** senior managers to guide their work	1 2 3 4 5 6 7	Supports the efforts of individuals/teams that work **autonomously**

l. In general, the top managers of my company believe that the best results occur when…

The **CEO** and top managers provide the primary impetus for pursuing business opportunities	1 2 3 4 5 6 7	**Individuals/ teams** decide for themselves what business opportunities to pursue

m. In my company Individuals/teams pursuing business opportunities are….		
Expected to obtain **approval** from their supervisor(s) before making decisions	1 2 3 4 5 6 7	Making decisions **on their own** without constantly referring to their supervisor(s)
n. In my company…..		
Employee initiatives and input play a major role in identifying and selecting the entrepreneurial opportunities my firm pursues	1 2 3 4 5 6 7	The **CEO** and top management team play a major role in identifying and selecting the entrepreneurial opportunities my firm pursues

11. How do you rate your company's position relative to your competitors in the following areas? *(Tick the box under the number closest to your view)*	Significantly lower						Significantly higher
	1	**2**	**3**	**4**	**5**	**6**	**7**
a. Profitability (measured by ROI for e.g.)	☐	☐	☐	☐	☐	☐	☐
b. Growth rate of sales or revenue	☐	☐	☐	☐	☐	☐	☐
c. Development of new products/services	☐	☐	☐	☐	☐	☐	☐
d. Customer satisfaction	☐	☐	☐	☐	☐	☐	☐
e. Public image and goodwill	☐	☐	☐	☐	☐	☐	☐

And finally
1. Your name (optional):
2. Your job title (optional):
3- If you would like to receive a summary of the findings, please provide an e-mail address:
4- Would you be willing to have a short meeting to discuss some of the issues in more details?   ☐ Yes ☐ No

Thank you for participating in this survey.

Please return the questionnaire in the prepaid envelope provided to:

Mr.Adel Elgharbawy
Brunel Business School
Brunel University-West London
Michael Sterling
Uxbridge
Middlesex
UB8 3PH

Ref.
This code is used to avoid sending you any unnecessary reminders

Appendix 2

The Participant Information Sheet

Brunel Business School

Research Ethics

Participant Information Sheet

1. Title of Research: An examination of the role of Value-based Management in achieving the objectives of Enterprise Governance: a contingency approach

2. Researcher: Student on PhD programme, Brunel Business School, Brunel University

3. Contact Email: adel.elgharbawy@brunel.ac.uk

4. Purpose of the research: The research project investigates the effect of compliance to the UK combined code of corporate governance on the enterprise activities and performance and whether an approach known as value-based management (VBM) can play a role in achieving a balance between the compliance and enterprise activities should a conflict exists.

5. What is involved: The project includes a questionnaire-based survey for the largest quoted companies in the UK. Finance directors (CFOs) or controllers, will be targeted to fill in the questionnaire.

6. Voluntary nature of participation and confidentiality. Your participation by completing the enclosed questionnaire is absolutely optional but important for the success of this study and the completion of the PhD thesis. We assure you that all information provided by you will be used for this research purposes only, will be treated as %**Strictly confidential**+and will not be released under any circumstances. The results will be reported in aggregate form within summarized tabulation.

Appendix 3

The Reminding Letter

Brunel University, Uxbridge,
Middlesex, UB8 3PH, UK
Telephone +44 (0) 1895 274000

23 October 2010

Dear

The effect of compliance with the combined code on corporate governance on entrepreneurial activities and performance
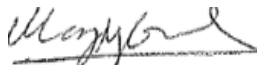
We recently wrote asking for your help with the above survey, but to date have not received a reply. In case yours has got lost in the post, I enclose another questionnaire and freepost envelope. Your company has been selected as one of the quoted companies in the UK which is likely to be affected by compliance with the combined code on corporate governance; we are interested in investigating the possible effect of compliance on performance.

The success of this research can help shape future regulation which entirely depends on getting a reasonable response from the business community. Your contribution is important and really appreciated. Therefore, I hope you will be able to find time to complete the enclosed questionnaire, which should take about 15 minutes and you might not answer all questions depending on your answer.
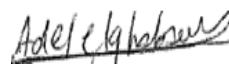
I can assure you that information provided will be used for this research purposes only and will be treated as strictly confidential. The results will be reported in aggregate form within summarised tabulation. As a little thank you for your help, I would like to share a summary of the findings with you, as we believe you will find them both interesting and useful.

Thank you for your co-operation, looking forward to receiving your response.

Yours sincerely

Magdy Kader
Professor of Accounting
Tel: 01582743156
Email: magdy.abdel-kader@beds.ac.uk

Adel Elgharbawy
Lecturer, PhD candidate
Tel: 018952 66317 - 07506175192
Email: adel.elgharbawy@brunel.ac.uk

1

Appendix 4

The Coding Schedule of Compliance with the CCCG

No.	Provision	Features of the provision	Code	Categories
1	A.1.1	A statement of how the board operates, decisions taken and delegated	0/1	**0** = No compliance **1**= Compliance
2	A.1.2	Identifying names of chairman/CEO/board/members of committees.		
3	A.1.3	Chairman to meet non executive directors without executives and non executives to meet without chairman at least annually.		
4	A.1.4	Any concerns for directors about the running of company it should be recorded in board minutes.		
5	A.1.5	Company should arrange appropriate insurance cover in respect of legal actions against its directors.		
6	A.2.1	Separation of chairman and chief executive roles		
7	A.2.2	Chairman should meet the criteria of independence on appointment		
8	A.3.1	Statement of independence of non-executive directors including chairman upon appointment		
9	A.3.2	At least half the board (excluding chairman) should be independent non-executive directors. Smaller companies (below FTSE 350) at least two		
10	A.3.3	Appointment of one of the independent non-executive directors to be the senior independent director for contact with shareholders if needed		
11	A.4.1	A nomination committee to lead the process of		

		board appointments with majority of independent non-executive directors.		
12	A.4.2	Evaluating the balance of skills, knowledge and Preparing a description of the role and capabilities required for particular appointment.		
13	A.4.3	For appointment of chairman, a job specification is needed including an assessment of time commitment expected.		
14	A.4.4	Terms and conditions of appointment of non executive directors should be made available for inspection		
15	A.4.5	Full time executive directors not to take more than one non executive directorship or chairmanship in a FTSE 100 company		
16	A.4.6	A separate section in the annual report to describe the work of nomination committee		
17	A.5.1	Chairman ensures that new directors receive a full formal and tailored induction on joining the board.		
18	A.5.2	Board ensure that new directors, especially non executive directors have access to independent professional advice at the company's expense.		
19	A.5.3	All directors should have access to the advices and services of company secretary.		
20	A.6.1	Statement of how performance evaluation of the board and its committees has been conducted.		
21	A.7.1	Election of all directors by the shareholders at AGM, re-election at intervals no more than 3 years.		
22	A.7.2	Re-election of non executive directors every three years. Any terms beyond 6 years to be investigated.		
23	B.1.1	Performance-related elements of remuneration should form a significant proportion of the total remuneration package of executive directors.		

24	B.1.2	Executive share options shouldnøt be offered at a discount save as permitted by other provisions of the listing rules		
25	B.1.3	Remuneration of for non-executive directors shouldnøt include share options; otherwise advance shareholder approval is necessary.		
26	B.1.4	Description of the work of the remuneration committee.		
27	B.1.5	The remuneration committee should consider what compensation commitments for directors in event of early termination		
28	B.1.6	Notice or contract periods should be set at one year or less		
29	B.2.1	A remuneration committee of at least three (two in small companies) independent non-executive directors.		
30	B.2.2	The remuneration committee should have delegated responsibility for setting remuneration for all executive directors and the chairman.		
31	B.2.3	The board or shareholders should determine the remuneration of non-executive directors within the limits set in the article of association		
32	B.2.4	Shareholders should be invited specifically to approve all new long term incentive schemes and significant changes to existing schemes.		
33	C.1.1	The directors explain in the annual report their responsibility for preparing the accounts.		
34	C.1.2	Directors should report that the business is a going concern		
35	C.2.1	The board should, at least annually, conduct a review of the effectiveness of the groupøs system of internal controls and report it.		
36	C.3.1	The board should establish audit committee with at least three (or two in small companies) independent non-executive directors.		

37	C.3.2	The main role and responsibilities of audit committee should be set out in written terms of reference and should include í		
38	C.3.3	The terms of reference of audit committee, should be made available in a separate section in annual report.		
39	C.3.4	Audit committee to review arrangements by which staff members may raise concerns about improprieties in financial reporting or other matters.		
40	C.3.5	Audit committee to monitor and review effectiveness of internal audit activities and consider the need for this function annually if not there.		
41	C.3.6	Audit committee should have primary responsibility for making a recommendation on the appointment and removal of external auditors.		
42	C.3.7	Explaining how the auditorøs independence is safeguarded if non audit services provided by the auditor		
43	D.1.1	Chairman should ensure the views of major shareholders are communicated to the board as a whole.		
44	D.1.2	Board statement about steps taken to ensure that members especially non-executives to develop an understanding of their views about the co.		
45	D.2.1	To provide a resolution and proxy on each substantial issue at AGM		
46	D.2.2	Ensuring that all valid proxy appointments received are properly recorded and counted.		
47	D.2.3	Chairman should arrange for the chairman of audit, remuneration and nomination committees to be available to answer questions at the AGM.		

48	D.2.4	A notice to be sent to shareholders at least 20 working days before the meeting.		
49	9.8.6 R & DTR 7.2.5 R	A statement of how co. has applied the main principles set out in section 1 of the combined code in a manner that would enable shareholders to evaluate how principles were applied.		
Maximum total score			**49**	

Appendix 5

The Coding Schedule of Compliance with the QCA Guidelines

NO.	Features of the provision	Code	Categories
1	Matters reserved for the board	0/1	**0** = No Compliance **1**= Compliance with provision
2	Timely information		
3	Internal controls review		
4	Review includes financial, operational and risk management		
5	Chairman and CEO separation		
6	Two Independent Non-exec directors		
7	Re-election		
8	Audi committees		
9	At least two independent Non-executive directors in Audit committees		
10	Remuneration committee		
11	At least two independent Non-executive directors in remuneration Committee		
12	Nomination committee		
13	Dialogue with shareholders		
14	Corporate governance statement		
15	Statement of how the board operates		
16	Identity of Chairman, CEO, Members		
17	Describing directors ̵independence		
18	Identity of directors to be independent		
19	Board Performance evaluation		

20	Biography of directors		
21	Number of meetings by board and committees		
22	Responsibility of directors		
23	Going concern statement		
24	Auditor independence safeguard non audit service		
25	Terms and conditions of non executive appointment		
26	Terms of reference of audit committee		
27	Terms of reference of remuneration committee		
28	Terms of reference of nomination committee		
	Maximum total score	**28**	

Appendix 6

Descriptive Statistics of Compliance with the CCCG

Serial	Provision no.	Description	No. of complying companies	% of complying companies
1	A.1.1	A statement of how the board operates, decisions taken and delegated	60	100.00
2	A.1.2	Identifying names of chairman/CEO/board/members of committees.	60	100.00
3	A.1.3	Chairman to meet non executive directors without executives and non executives to meet without chairman at least annually.	56	93.33
4	A.1.4	Any concerns for directors about the running of company it should be recorded in board minutes.	60	100.00
5	A.1.5	Company should arrange appropriate insurance cover in respect of legal actions against its directors.	59	98.33
6	A.2.1	Separation of chairman and chief executive roles	52	86.66
7	A.2.2	Chairman should meet the criteria of independence on appointment	48	80.00
8	A.3.1	Statement of independence of non-executive directors including chairman upon appointment	46	76.66
9	A.3.2	At least half the board (excluding chairman) should be independent non-executive directors. Smaller companies (below FTSE 350) at least two	43	71.66
10	A.3.3	Appointment of one of the independent non-executive directors to be the senior independent director for contact with shareholders if needed	55	91.66
11	A.4.1	A nomination committee to lead the process of board appointments with majority of independent non-executive directors.	46	76.66
12	A.4.2	Evaluating the balance of skills, knowledge and Preparing a description of the role and capabilities	56	93.33

		required for particular appointment.		
13	A.4.3	For appointment of chairman, a job specification is needed including an assessment of time commitment expected.	57	95.00
14	A.4.4	Terms and conditions of appointment of non executive directors should be made available for inspection	58	96.66
15	A.4.5	Full time executive directors not to take more than one non executive directorship or chairmanship in a FTSE 100 company	59	98.33
16	A.4.6	A separate section in the annual report to describe the work of nomination committee	54	90.00
17	A.5.1	Chairman ensures that new directors receive a full formal and tailored induction on joining the board.	59	98.33
18	A.5.2	Board ensure that new directors especially non executive directors have access to independent professional advice at the company's expense.	58	96.66
19	A.5.3	All directors should have access to the advices and services of company secretary.	60	100.00
20	A.6.1	Statement of how performance evaluation of the board and its committees has been conducted.	55	91.66
21	A.7.1	Election of all directors by the shareholders at AGM, re-election at intervals no more than 3 years.	60	100.00
22	A.7.2	Re-election of non executive directors every three years. Any terms beyond 6 years to be investigated.	55	91.66
23	B.1.1	Performance-related elements of remuneration should form a significant proportion of the total remuneration package of executive directors.	58	96.66
24	B.1.2	Executive share options shouldn't be offered at a discount save as permitted by other provisions of the listing rules	60	100.00
25	B.1.3	Remuneration of for non-executive directors shouldn't include share options; otherwise advance shareholder approval is necessary.	60	100.00

26	B.1.4	Description of the work of the remuneration committee.	60	100.00
27	B.1.5	The remuneration committee should consider what compensation commitments for directors in event of early termination	59	98.33
28	B.1.6	Notice or contract periods should be set at one year or less	59	98.33
29	B.2.1	A remuneration committee of at least three (two in small companies) independent non-executive directors.	51	85.00
30	B.2.2	The remuneration committee should have delegated responsibility for setting remuneration for all executive directors and the chairman.	58	96.66
31	B.2.3	The board or shareholders should determine the remuneration of non-executive directors within the limits set in the article of association	60	100.00
32	B.2.4	Shareholders should be invited specifically to approve all new long term incentive schemes and significant changes to existing schemes.	60	100.00
33	C.1.1	The directors explain in the annual report their responsibility for preparing the accounts.	60	100.00
34	C.1.2	Directors should report that the business is a going concern	60	100.00
35	C.2.1	The board should, at least annually, conduct a review of the effectiveness of the groupøs system of internal controls and report it.	60	100.00
36	C.3.1	The board should establish audit committee with at least three (or two in small companies) independent non-executive directors.	45	75.00
37	C.3.2	The main role and responsibilities of audit committee should be set out in written terms of reference and should include í	59	98.33
38	C.3.3	The terms of reference of audit committee, should be made available in a separate section in annual report.	59	98.33

39	C.3.4	Audit committee to review arrangements by which staff members may raise concerns about improprieties in financial reporting or other matters.	59	98.33
40	C.3.5	Audit committee to monitor and review effectiveness of internal audit activities, and consider the need for this function annually if not there.	59	98.33
41	C.3.6	Audit committee should have primary responsibility for making a recommendation on the appointment and removal of external auditors.	59	98.33
42	C.3.7	Explaining how the auditorøs independence is safeguarded if non audit services provided by the auditor	59	98.33
43	D.1.1	Chairman should ensure the views of major shareholders are communicated to the board as a whole.	60	100.00
44	D.1.2	Board statement about steps taken to ensure that members especially non-executives to develop an understanding of their views about the co.	60	100.00
45	D.2.1	To provide a resolution and proxy on each substantial issue at AGM	60	100.00
46	D.2.2	Ensuring that all valid proxy appointments received are properly recorded and counted.	60	100.00
47	D.2.3	Chairman should arrange for the chairman of audit, remuneration and nomination committees to be available to answer questions at the AGM.	59	100.00
48	D.2.4	A notice to be sent to shareholders at least 20 working days before the meeting.	60	98.33
49	9.8.6 R & DTR 7.2.5 R	A statement of how co. has applied the main principles set out in section 1 of the combined code in a manner that would enable shareholders to evaluate how principles were applied.	60	100.00

Appendix 7

Descriptive Statistics of Compliance with the QCA Guidelines

Provision No.	Description	No. of complying companies	% of complying companies
1	Matters reserved for the board	24	45.28
2	Timely information	28	52.83
3	Internal controls review	48	90.56
4	Review includes financial, operational and risk management	51	96.22
5	Chairman and CEO separation	50	94.33
6	Two Independent Non-exec directors	42	79.24
7	Re-election	41	77.35
8	Audi committees	51	96.22
9	At least two independent Non-executive directors in Audit committees	36	67.92
10	Remuneration committee	50	94.33
11	At least two independent Non-executive directors in remuneration Committee	38	71.69
12	Nomination committee	29	54.71
13	Dialogue with shareholders	33	62.26
14	Corporate governance statement	50	94.33
15	Statement of how the board operates	34	64.15
16	Identity of Chairman, CEO, Members	44	83.01
17	Describing directors ̶independence	8	15.09
18	Identity of directors to be independent	33	62.26
19	Board Performance evaluation	10	18.86
20	Biography of directors	43	81.13

21	Number of meetings by board and committees	29	54.71
22	Responsibilities of directors	52	98.11
23	Going concern statement	48	90.56
24	Auditor independence safeguard non audit service	19	35.84
25	Terms and conditions of non executive appointment	9	16.98
26	Terms of reference of audit committee	32	60.37
27	Terms of reference of remuneration committee	29	54.71
28	Terms of reference of nomination committee	20	37.73