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When Good Business Relationships Go Bad: A Quantitative Analysis of Dark Side Variables in Mature Supply Chain Relationships

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WHEN GOOD BUSINESS RELATIONSHIPS GO BAD: A QUANTITATIVE ANALYSIS
OF DARK SIDE VARIABLES IN MATURE SUPPLY CHAIN RELATIONSHIPS

by

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(Under the Direction of Jacqueline Eastman)

ABSTRACT

This quantitative study examines the dark side effect of relationship variables on relationship financial performance and likelihood of relationship termination, moderated by relationship quality. The study tests propositions found in Social Exchange Theory. The cross-sectional survey was conducted with a population of logistics purchasers and providers. Three of ten hypotheses were supported; contributing evidence supporting the positive effect of relationship quality on the path between some relationship variables and performance, thereby corroborating Social Exchange Theory.

The other hypotheses support the existence of the dark side effect of some relationship variables. Theoretically, this study strengthens the argument of Social Exchange Theory, while simultaneously supporting the earlier theoretical paths of Social Exchange Theory. Post-hoc testing illuminates the non-linear relationship of some of the independent variables, indicating the point of diminishing returns from earlier conceptualizations of Social Exchange Theory, and showing boundary conditions for the existing conceptualization of Social Exchange Theory.

INDEX WORDS: Supply Chain Relationships, Dark side, Survey, Social Exchange Theory, PLS

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1.0   Introduction

A supply chain is often defined as a series of relationships held together by various levels of partnership or collaboration (Cao and Zhang, 2011; Chen and Paulraj, 2004; Cooper, Lambert, and Pagh, 1997). Supply chains require coordination with these partners to meet the needs of their customers, which often have dynamic and quickly-changing needs (Cannon and Perreault, 1999; Lusch and Brown, 1996). Because supply chain management is now considered to be strategically significant to firm performance (Giunipero et al., 2008), all sources of competitive advantage, including relational sources, within the supply chain require investigation as they may determine, at least in part, supply chain performance (Croom, Romano, and Giannakis, 2000; Giunipero et al., 2008; Wisner and Tan, 2000). Recently, managers and researchers alike have come to believe in the importance of managing the supply chain as a strategic part of their business and have realized the ability to exploit close supply chain relationships with alliance partners (Hsu et al., 2008). In particular, some have suggested that is it important to move away from studying competition at an individual firm level and instead focus on the competition that exists at the supply chain level (Hunt and Morgan, 1994; Lambert and Cooper, 2000; Thorelli, 1986).

1.1 Importance of supply chain relationships and alliances

By the late 1990s, firms began to focus on a relationship approach to managing their supply chains with a focus on gaining value from these partnerships (Corsten and Kumar, 2005; McCutcheon and Stuart, 2000). Business relationships represent varying level of interactions and collaboration between firms, often with long term relationships or intentions, embedded in some larger network (Backhaus and Büschken, 1999;

Håkansson and Johanson, 1988; Håkansson and Snehota, 1995; Harrison, 2004). These business-to-business relationships are central to supply chain management (Autry and Griffis, 2008) and are seen as a significant enabler of effective supply chains (Ellram and Cooper, 1990; Min et al., 2005), and the highest core competency (Min et al., 2005; Sanders and Premus, 2005). Research has shown that business alliances have been increasing by about 25% per year and represent about 30% of the value and revenue of the companies involved (Hughes and Weiss, 2007). For many firms, the strategic management of supply chain relationships is an even higher priority than traditional marketing (Piercy, 2009). In multiple industries, individual firms, driven by concerns for effectiveness and efficiency, are seeking fewer, closer, and more intense business relationships (Geyskens, Steenkamp and Kumar, 1998). In the past, data has supported this conclusion: for example, by making more efficient and effective relationships, it is estimated that firms could save up to $30 billion in the U.S. food industry alone (Kumar, 1996).

These fewer but closer supply chain relationships are considered to produce long term, mutual benefits to the parties involved (Anderson and Narus, 1990; Backhaus and Büschken, 1999; Lambert, Knemeyer and Gardner, 2004; Cannon and Perreault, 1999; Piercy, 2009) and are often considered a top priority for many firms (Day, 2000; Helfert, Ritter, and Walter, 2002; Hofer, Knemeyer, and Dresner, 2009). See Table 1 for a summary of literature related to the beneficial outcomes of supply chain relationships.

As illustrated in Table 1, conceptually, supply chain relationships have been proposed to show customer and financial benefits, waste reduction, time compression, flexibility, cost reduction (Brewer and Speh, 2000), mutual satisfaction (Dwyer, Schurr and Oh, 1987; Mentzer, Min, and Zacharia, 2000), stronger commitment (Dwyer et al.,

1987), relational rent (Dyer, Singh, and Kale, 2008), business performance (Mentzer et al., 2000), loyalty (Mentzer et al., 2000), relationship effectiveness (Mentzer et al., 2000), strategic advantage (Weitz and Jap, 1995), and abnormal stock returns (Koh and Venkatraman, 1991; Kale, Dyer, and Singh, 2001).

Empirically, some of these dependent variables have been confirmed. For example, dependence and communication have been found to have a positive relationship with relationship satisfaction (Anderson and Narus, 1990), as has relational behavior and performance of the focal firm in the wholesaler-distributor relationship (Lusch and Brown, 1996). Anand and Khanna (2000) found a positive relationship between announcements of licensing agreements and an increase in stock returns, while Claro, Hagelaar and Omta (2003) confirmed a positive relationship between transaction specific investments, length of relationships, trust, intensity and stability and sales growth and perceived satisfaction in the potted plants and flowers industry. Finally, Moberg and Speh (2003) showed a positive relationship between trust, commitment, and partner type and relationship strength in multiple industries.

Thus, both conceptual and empirical works suggest a positive relationship between certain relational variables and different conceptualizations of success, such as abnormal stock returns, relationship satisfaction, performance, relationship strength and satisfaction. The importance of relationships to performance cannot be downplayed. However, the linear relationship between relational variables and success or performance is not consistent across supply chain research. One stream of research on the dark side variables is, in part, beginning to explain this lack of consistency in the empirical results. Dark side variables are those which are hypothesized to have a positive relationship to performance or other positive relationship outcomes; however,

also exhibit a dampening effect on those outcomes (Anderson and Jap, 2005). This dissertation will contribute to literature through empirical testing of a set of the dark side variables derived from literature.

These closer relationships exist along a relational continuum such as interfirm alliances. An interfirm alliance is defined as an interfirm arrangement entered into voluntarily, with the intention of sharing or exchanging resources (Gulati, 1998; Lavie, 2006; Villena, Revilla, and Choi, 2011; Fredericks, 2005). Interfirm alliances take many forms including research and development partnerships, reciprocal trade agreements, long term marketing contracts, and joint ventures (Lavie, 2006). For several decades, the number and importance of interfirm alliances has grown considerably (Hagedoorn, 1993, 1995; Gulati, 1998; Gulati, Nohria, and Zaheer, 2000; Lavie, 2006). Gulati (1998) referred to strategic alliances as "a ubiquitous phenomenon" with a vast "proliferation" (p. 293) of interfirm alliances. Hagedoorn (1993) and Gulati, Nohria and Zaheer (2000) both addressed alliances as an increasingly important part of business, particularly global business, which may affect overall firm performance (Gulati et al., 2000).

As illustrated in Table 1, research suggests that networks and alliances between firms do affect the performance of the network members (Gulati et al., 2000; Lavie, 2006) and that closer relationships lead to multiple tangible benefits including supernormal stock returns (Anand and Khanna, 2000; Kale, Dyer and Singh, 2001; Koh and Venkatraman, 1991); sales growth (Claro, Hagelaar and Omta, 2003; Mentzer et al., 2000); general financial benefits (Brewer and Speh, 2000; Lusch and Brown, 1996; Piercy, 2009; MacKintosh and Simon, 2006; Hollinger, 2007; Fink, Feldman and Hatten, 2007); improved response to complex consumer demands (Piercy, 2009; Eisenhardt and Martin, 2000), improved collaboration (Hamm, 2006), flexibility

Table 1: Beneficial Outcomes of Supply Chain Relationships

Author	Year	Conceptual / empirical/ secondary	Context, Industry, or notes	IV	DV
Dwyer Schurr and Oh (1987)	1987	Conceptual	[Primarily about relationship phase]	Deepening dependence	Mutual satisfaction and commitment
Weitz and Jap (1995)	1995	Conceptual		Relationship management	Strategic advantage
Brewer and Speh (2000)	2000	Conceptual	Logistics	Integrated supply chain relationship	Customer benefits, financial benefits, waste reduction, time compression, flexible response, unit cost reduction
Mentzer Min and Zacharia (2000)	2000	Conceptual		Environmental partnering pressure, interdependence, conflict, trust, commitment, organizational compatibility, top management vision, partnering orientation, partnering implementation, competitive attainment	Business performance outcome, economic outcome, customer satisfaction and loyalty, relationship effectiveness
Dyer Singh and Kale (2008)	2008	Conceptual		Transaction specific investments, types of resources, information, stability	Relational rent

Koh and Venkatraman (1991)	1991	Secondary	Information technology	Alliance announcement	Abnormal stock returns
Kale Dyer and Singh (2001)	2001	Secondary	Manufacturers and suppliers	Learning, alliance-related know-how	Abnormal stock returns
Anderson and Narus (1990)	1990	Empirical	Distributor/ manufacturer	Dependence and communication	Relationship satisfaction
Heide and John (1992)	1992	Empirical	Manufacturers and suppliers	Flexibility, information exchange, solidarity, relational norms, buyer specific assets	Vertical control
Lusch and Brown (1996)	1996	Empirical	Wholesaler-distributor, and supplier	Dependence, relationship length, contract type, relational behavior	Performance of focal firm (wholesaler-distributor)
Anand and Khanna (2000)	2000	Empirical	Joint venture, licensing agreements	Announcements of licensing agreement	Stock returns (wealth effect)
Claro Hagelaar Omta (2003)	2003	Empirical	Potted plants and flowers	Exchange mode, transaction specific investment, length of relationship, trust, intensity, instability	Sales growth rate, perceived satisfaction
Moberg and Speh (2003)	2003	Empirical	Logistics, manufacturers of food, beverage, pharmaceuticals, toiletries, consumer packaged goods	Trust, commitment, type of trading partner, questionable business practices	Relationship strength

(Fredericks, 2005; Kale, Dyer and Singh, 2001), reduced costs (Skjott-Larsen et

al., 2003), new product development (Fredericks, 2005; Hill and Jones, 1995), risk-

pooling (Fredericks, 2005), and strategic or competitive advantage (Weitz and Jap,

1995; Doz and Hamel, 1998; Kogut 1988; Fredericks, 2005). Thus, empirical investigation of alliance success contributes to our understanding of the value of alliance formation.

Empirical work has also indicated several significant predictors of these numerous relational benefits including learning (Anand and Khanna, 2000), trust and transaction-specific investments (Claro et al., 2003), relational norms (Heide and John, 1992), long term orientation (Lusch and Brown, 1996), alliance structure (Kale et al., 2001), relatedness of companies, and the relative size of their partner (Koh and Venkatraman, 1991).

Moberg and Speh's (2003) empirical investigation is notable in that it is a study of, among other variables, questionable business practices. The study reveals that in existing trusting relationships, the presence of questionable business practices by either party erodes trust, commitment, and relationship strength (Moberg and Speh, 2003). These questionable business practices are frequently motivated by short-term financial interests derived from performance metrics. This study is one of the few studies which focus on negative effects of independent variables on business-to-business or supply chain relationships.

In conclusion, businesses, when operating alone without collaboration, find it difficult to effectively cope with the increasingly diverse and complex customer requirements (Piercy, 2009). This emphasizes the ongoing importance and benefits of interfirm alliances (Piercy, 2009). In fact, effective supply chain management, at its core, requires that strong linkages are developed between supply chain members (Vickery, Calantone, and Droge, 1999; Fredericks, 2005). Vickery, Calantone and Droge (1999) conclude that, for example, to cope with volatile demand, volume flexibility can

only be obtained with close coordination between suppliers and manufacturers. Fredericks (2005) extended this concept by concurring that close coordination is required to enable flexibility and therefore, organizational performance. However, there have been situations in which collaboration, alliances, and close business relationships do not achieve these expected benefits: these unexpected results are the focus of this dissertation.

1.2 How supply chain relationships create value

According to Bowersox et al., (2000) and Nyaga and Whipple (2011), the creation of value within the supply chain relationship is contingent upon managing those relationships by working in close collaboration. This collaboration may involve operational coordination, joint research and development, or financial linkages (Bowersox et al., 2000). Closer supply chain relationships have long been described as a business strategy which is win-win for all members (Anderson and Jap, 2005). Nyaga and Whipple (2011) take this a step further by concluding that supply chain relationships can actually differentiate firms and contribute competitive advantage. Due to the expense of new product development and the ongoing and expanding needs to penetrate new geographic markets, the need for collaboration and coordination is ever increasing (Hamel, Doz and Prahalad, 1989).

Relationships create value when they are successfully managed (Nyaga and Whipple, 2011); when competitive abilities are enhanced by the relationship (Min et al., 2005), access to resources is expanded by the relationship and costs reduced (Fynes, De Burca, and Mangan, 2008; Geyskens, Steenkamp, and Kumar, 1998; Nyaga and Whipple, 2011; Hamel, Doz and Prahalad, 1989) and risk is pooled amongst partners

(Bensaou and Anderson, 1999; Min et al., 2005; Moberg and Speh, 2003; Ohmae, 1989; Hamel, Doz and Prahalad, 1989). Both empirical and conceptual studies have confirmed the benefits of closer supply chain relationships.

There are multiple avenues through which these benefit can be accrued, many based on empirical research including relationship quality (Nyaga and Whipple, 2011; Min et al., 2005; Fynes et al., 2008), trust (Geyskens et al., 1998; Moberg and Speh, 2003), transaction-specific investment (Bensaou and Anderson, 1999), commitment (Moberg and Speh, 2003), information sharing (Droge and Germain, 2000), and collaboration (Stank et al., 2001; Corsten and Felde, 2005; Mentzer et al., 2000).

To evaluate value created by an inter-firm relationship, relationship benefits are compared to the costs of creating and maintaining the relationship (Nyaga and Whipple, 2011; Whipple, Frankel, and Anselmi, 1999), and when relationships do not meet the criteria for performance, i.e. when the costs of the relationship outweigh the benefits, those resources invested in it should be redeployed (Good and Evans, 2001; Rothbart and Hallmark, 1988). The most common goals of business relationships are to create and maintain a mutually beneficial, long term relationship which continues to reap rewards over its life span (Barnes, 2005; Lambert et al., 2004).

1.3 Academic and professional interest in supply chain relationships

This emphasis on business relationships has been discussed in research since the 1990s (Crosby, Evans, and Cowles, 1990; Hunt and Morgan, 1994; Kalwani and Narayandas, 1995) and its longevity as a research topic of interest indicates the continuing importance of relationships to firms and their expected results of mutually-beneficial relationships (Golicic and Mentzer, 2006; Lambert et al., 2004; Rese, 2006).

Managing relationships accounts for the deployment of a considerable amount of resources for supply chain members (Cooper et al., 1997; Mentzer et al., 2001), highlighting the importance and need for continued research in this area.

There have been questions in both practice and academia regarding the long-term success of close business relationships which drives the need for further research (Daugherty, 2011). Many of these questions are general relationship research questions such as: What influences the long term success of close business relationships? (Daugherty, 2011); What are the determinates of success in close relationships? (Daugherty, 2011); What recommendations may help firms establish close relationships? (Daugherty, 2011); and How should companies best deal with power imbalances in their relationships? (Daugherty, 2011).

These questions indicate ongoing interests in business relationship research. This dissertation aims to address three other questions of interest raised in the literature: What factors drive problems in buyer-supplier relationships? (Daugherty, 2011); Why do many close relationships fail? (Daugherty, 2011); and Why are many collaborative relationships unsuccessful? (Daugherty, 2011; Slone et al., 2010).

There have been multiple calls for papers seeking to answer these questions. Geyskens, Steenkamp and Kumar (1998) recommended additional research on the complexity of the relationship between trust and performance. Other authors have called for research investigating the negative aspects of relationships as previous research has focused primarily on looking at the positive side of relationships and investigating only what is improving relational outcomes (Holmlund-Rytkönen and Strandvik, 2005; Piercy, 2009; Mitrega and Solkiewski, 2012; Mitrega and Zolkiewski, 2012). Frequently, the focus is simply on this positive, bright side, and future research is

needed that helps balance the view of collaborative relationships (Villena, Revilla and

Choi, 2011). Interest in the topic of dark side variables is evident: Abosag, Yen and

Barnes (2014) specifically sought out research on dark side variables for inclusion in a

special issue of *Industrial Marketing Management* which they represent as editors

(deadline December, 2014). This dissertation aims to improve this balance by

contributing to the dark side of relationships research.

Additionally, Morgan and Hunt (1999) recommended the need for an

improvement in understanding the relationship between competitive advantage and

close relationships. Villena, Revilla and Choi (2011) recommend future research which

evaluates mediators on the relationship of social capital to performance. This

dissertation will answer both these calls by evaluating the dark side aspect to close

relationships, as well as investigating that relationship within the relationship life cycle.

1.4 GAP: Supply chain relationships do not always deliver

According to Barratt (2004), both academics and practitioners suggest

collaboration may not be sustainable over the long turn. Barratt (2004) and Sabath and

Fontanella (2002) agree that firms have found supply chain collaboration to be very

difficult to implement and particularly difficult to benefit from. Though Hamel, Doz and

Prahalad (1989) felt that strategic alliances may fortify each partner against outside

competition, that same alliance may increase dependence or vulnerability of one partner

compared to the other. Ongoing problems experienced by firms regarding the

development and maintenance of these interfirm alliances illustrate how closer

relationships of many types do not always deliver the expected superior value (Piercy,

2009). Many companies have found collaboration very difficult to accomplish to achieve, and sufficient benefits elusive (Min et al., 2005). Thus, professionals are finding that these close relationships are not always good relationships (Anderson and Jap, 2005). Table 2 shows several studies which hypothesize or result in relationship failure or dissatisfaction.

Table 2: Relationship failure or dissatisfaction

Author	Conceptual/ empirical/ secondary	Context or Industry, or notes	IV	DV
Doz and Hamel (1998)	Conceptual	NA	Alliance	Advantages and disadvantages
Barringer and Harrison (2000)	Conceptual	NA	Interorganizational relationships	Advantages and disadvantages
Good and Evans (2001)	Conceptual	NA	Relational unrest	Retention, reconfiguration, dissolution, status quo
Jap and Ganesan (2000)	Empirical	Retail	Transaction specific investment	Commitment
Barratt and Oliveira (2001)	Empirical	Manufacturing	CPFR	Barriers and enablers of CPFR
Anderson and Jap (2005)	Empirical	Logistics	Close relationships	dark side
Gulati and Sytch (2007)	Empirical	Automotive procurement	Dependence asymmetry, joint dependence	Performance (negative for the weaker of the two)
Swink Narasimhan and Wang (2007)	Empirical	Manufacturing	Strategic integration	Business performance, competitive capabilities
Villena, Revilla, and Choi (2011)	Empirical	Supply chain	Social capital	Business performance

Empirical evidence has continued to show that very few businesses have achieved the anticipated level of results from collaborative efforts (Anderson and Jap, 2004; Barratt and Oliveira, 2001; Gulati and Sytch, 2007; Swink, Narasimhan and Wang, 2007; Villena, Revilla and Choi, 2011; Jap and Ganesan, 2000). Mitrega and Zolkiewski (2012), for example, found multiple negative consequences to staying in deep buyer-supplier relationships including weaker negotiation position, increased opportunity costs, less supplier effort, the supplier using power against the buyer and a higher risk of supply instability.

Conceptual work has also pointed to multiple disadvantages resulting from both interorganizational relationships (Barringer and Harrison, 2000) and, more specifically, alliances (Doz and Hamel, 1998). See Table 3. Taking a closer look at the empirical findings, it becomes apparent that not all close relationships are delivering the expected results and benefits. For example, Swink, Narasimhan and Wang (2007) found a negative relationship between integration and market performance. Fink, Edelman and Hatten (2007) showed that though closer, more cooperative relationships may lead to performance benefits; those benefits are not always reciprocal in nature, negating the mutually beneficial expectations of closer relationships. Villena, Revilla and Choi (2011) also conducted a survey which showed both the bright side and dark side of social capital. The inverted curved relationship found that too much or too little social capital reduces performance in the relationship and objectivity in decision-making (Villena et al., 2011).

Jap and Ganesan (2000) empirically found that the presence of transaction specific investments did not always improve relationship satisfaction, reduce the conflict level of the relationship, or increase the buyer's evaluation of their supplier's

performance. Good and Evans (2001) developed a conceptual framework to suggest that business relationships frequently do not achieve the desired goals and frequently end prematurely. The authors, however, do not consider this a travesty to be avoided, but a relatively normal occurrence in the life of a business (Good and Evans, 2001). Hughes and Weiss (2007) report that alliances face upwards of 60% failure rate and advises companies involved in alliances to emphasize metrics to enable better relationship outcomes.

Some authors consider firms excessively optimistic in their expectations of the benefits and return of closer relationships (Doz and Hamel, 1998; Barringer and Harrison, 2000). Doz and Hamel (1998) go on to say that some of the difficulties of managing relationships arise from the uncertainty regarding what resources are required and how to best combine them. The dynamics of firms and industries also bring uncertainty since a collaborator today may be a competitor tomorrow (Doz and Hamel, 1998).

While evidence exists of the benefits of collaboration, some authors have concluded that historically, collaboration has been one of the larger failures in supply chain management strategies (Min et al., 2005; Sabath and Fontanella, 2002) as business to business relationships continue to be considerably difficult to maintain (Giller and Matear, 2001; Keefe and Maypole, 1983). Giller and Matear (2001) stated that it may even be unreasonable and unrealistic to expect business relationships to be long-term or indefinite, perhaps in part due to the probability of the relationship not attaining the desired return (Good and Evans, 2001; Inkpen, 1996).

In conclusion, though literature has stressed the benefits of long term supply chain relationships (Ganesan, 1994; Morgan and Hunt, 1994; Palmatier, Dant and

Grewal, 2007; Cannon and Homburg, 2001; Mitrega and Zolkiewski, 2012), there is

vidence that the benefits do not always materialize, particularly mutual benefits (Fink,

Edelman and Hatten, 2007). An emerging body of literature suggests one possible cause

to this lack of expected benefits: the dark side effect of relationship variables (Anderson

and Jap, 2005). Some studies have attempted to explain how good relationships go bad

and results suggest that even in stronger relationships, insidious forces may be working

at the very foundation of the relationship (Anderson and Jap, 2004). This phenomenon

has been termed the dark side of close relationships (Anderson and Jap, 2005). Dark

side variables are those variables expected and predicted to have a positive relationship

to relationship performance and relationship continuity (Grayson and Ambler, 1999).

Dark side variables are distinct from dysfunctional relationships which are prone to

failure (Anderson and Jap, 2005). Many business relationships experience negative

factors, such as conflict and strife which make them likely to dissolve (Anderson and

Jap, 2005). The dark side variables, however, work from the inside to undermine

relationships even when one or both parties feel satisfied with their partnership and

their received benefits (Anderson and Jap, 2005).

These dark side factors are quite insidious since there is no obvious problem

spurring changes to the relationship (Anderson and Jap, 2005). Empirical results have

supported that relationships can remain in a condition of diminishing satisfaction and

return for quite some time, often without hostility (Anderson and Jap, 2005). The

invasion of the dark side can be gradual, subtle, and pervasive (Anderson and Jap,

2005). Often, the efforts of the partners to develop strong, lasting relationships are the

very factors which contribute to the dark side effect (Anderson and Jap, 2005).

This dissertation is focused on how dark side variables affect the perceptions of performance of a supply chain relationship and its continuity. The dark side variables can have both a positive effect, and, at different times, negative effects on relationship performance. The managerial contribution of this dissertation, in part, is that it would be unwise to blindly recommend always making relationship-specific investments if relationship-specific investments are beneficial only under certain circumstances. Research is needed to better understand when the dark side effect emerges. This dissertation will investigate how several relationship variables from literature may exhibit a dark side effect in supply chain relationship performance and relationship continuity.

It has been seen that business relationships do experience negative relational outcomes including unrest and dissolution, and neglecting these negative outcomes avoids addressing the full complexity of business relationships (Good and Evans, 2001; Harrigan, 1988; Reukert and Walker, 1987). If empirical research only seeks confirmation of positive relationships, academia is neglecting the investigation of what is not working as well as positive relationship variables which are, if not responsible, at least indifferent in strengthening a supply chain relationship, as is the case with dark side variables. The investigation of dark side effect may help avoid the potentially uninformed practice of blindly calling for higher levels of certain relational variables, such as social capital, within supply chain relationships, since its presence at all levels may not lead to increased performance (Landolt and Portes, 1996) and may actually erode performance (Villena et al., 2011). Investigating dark side variables will complement these "bright-side" studies by creating a more multi-dimensional picture of supply chain relationships.

1.5 Brief literature overview

There has been considerable investigation in literature regarding constructs which negatively affect supply chain relationships such as opportunism (Gundlach et al., 1995; Parkhe, 1993; Skarmeas, 2006), asymmetric power and dependence (Narayandas and Rangan, 2004; Gundlach and Cadotte, 1994), conflict (Holmlund-Rytkonen and Strandvik, 2005), and destructive acts or questionable business practices (Moberg and Speh, 2003; Hibbard et al., 2001). These negative factors are most often conceptualized as linearly related to the dependent variable in studies (Finch, Zhang, and Geiger, 2013; Gaski, 1984; John, 1984; Massey and Dawes, 2007; Skarmeas, 2006; Zhou et al., 2007). While there has been considerable investigation of these negative variables, there has been much less empirical investigation of the dark side effect. This dissertation will focus on the less-researched non-linear dark side effect (Anderson and Jap, 2005; Hansen, 1999; McFadyen and Cannella, 2004; Villena et al., 2011). See Table 3 for examples of dark side research.

These dark side studies constitute a stream of research that evaluates relational constructs that are predicted to show a non- linear relationship with the dependent variable. This dissertation will focus on these dark side variables: relationship-specific investment, long-term orientation, social capital, learning and reciprocity (Anderson and Jap, 2005). Research has often neglected these non-linear dark side factors which, under some circumstances, dampen the expected performance improvement from buyer-supplier relationships (Abosag, Yen, and Barnes, 2014; Lechner, Frankenberger, and Floyd, 2010; Wise, 2014; Gu, Hung and Tse, 2008; Villena, et al., 2011). Qualitative investigation has revealed some potential negative results based on very close,

collaborative, or deep relationships, including deteriorating negotiating position, opportunity costs, reduced supplier effort, asymmetric power, and higher risks (Mitrega and Zolkiewski, 2012). This research will empirically test dark side variables simultaneously in the supply chain context.

1.6 Dark side variables, overview

Several academic fields of study have addressed a possible dark side to certain relationship variables, including business strategy (Uzzi, 1997; Gargiulo and Benassi, 1999; Adler and Kwon, 2002) and sociology (Granovetter, 1985; Portes and Sensenbrenner, 1993). In the field of business strategy, Uzzi (1997) found that excessive embeddedness reduced economic performance, while Adler and Kwon (2002) qualitatively investigated the negative consequences of social capital. In the field of sociology, Granovetter (1985) suggested conceptually that social capital leads to opportunism. There is also increasing evidence of the dark side effects in the supply chain literature (Fawcett and Waller, 2013; Villena et al., 2011). The dark side of relationship variables has relevant implications for the study of business management due to the significant investments firms place in building strong social relationships with their partners (Autry and Griffis, 2008; Adler and Kwon, 2002). Some social variables previously considered positive have been proposed and, in some cases, empirically shown to facilitate or promote opportunism (Granovetter, 1985) and reduced objectivity in decision-making (Locke, 1999; McFadyen and Cannella, 2004; Grover et al., 2006; Mitrega and Zolkiewski, 2012), concluding in an overall negative impact on the business relationship.

Table 3: Dark side variables

Dark side variables	Identified as dark side	Hypothesize non-linear effects	Citation	Type	DV	Findings	Theory?	Inductive/ deductive	In this study?
Embeddedness / network centrality	No	No	Uzzi (1997)	Empirical, qualitative	Economic performance	Non-linear relationship	No	Inductive	No
	No	Yes	Lechner, Frankenberger and Floyd (2010)	Empirical	Performance	Non-linear relationship	Literature as theory	Not theory testing	
Information sharing	Yes	No	Grover, Lim and Ayyagari (2006)	Content analysis	Pricing decision variance	Info sharing leads to price dispersion	Efficient market theory	Boundary testing	No
Learning/ Absorptive capacity	No	No	Hamel (1991)	Empirical, qualitative	Balance of power	Learning can negatively affect balance of power	Theory development	Inductive	Yes
Long term orientation	Yes (moderating role)	No	Grayson and Ambler (1999)	Empirical	Research use	Trust sig in short but not long, involvement sig in long but not short	Marketing theory	Deductive, replication of previous study	Yes
Reciprocity (Also guanxi)	Yes	No	Gu Hung and Tse (2008)	Empirical	Market performance	When guanxi is moderated by competition and technological turbulence, market performance suffers	Social capital theory	Neither	Yes

Category									
Relationship-specific investment	No	No	Bensaou and Anderson (1999)	Empirical	Opportunism, Performance	Supported	TCE, Economic theory, Institutional theory, Organizational theory	Neither	
Social capital	No	Conceptually but indirectly	Adler and Kwon (2002)	Conceptual	Value		Organizational theory	Neither	Yes
	No	Conceptually but indirectly	Locke (1999)	Conceptual	Organizational effectiveness		Not specified	Neither	
	Yes	Yes	Villena, Revilla and Choi (2011)	Empirical	Performance	Supported	Social capital theory	Neither	
	No	Yes	McFadyen and Cannella (2004)	Empirical	Knowledge creation	Supported	Theory of knowledge creation	Neither	
Deep relationships	Yes	No	Mitrega and Zolkiewski (2012)	Empirical, qualitative	Negative effects of staying in deep relationships	Supported	No	Inductive	No
Trust	No	No	Kosari, Hoeffler and Iacobucci (2013)	Mixed methods	Performance and satisfaction	inverted relationship found moderated by relationship life cycle position	Not specified	Inductive followed by deductive	No

Due to this paradox, pouring resources into building strong relationships may be ill-advised if there is a possibility of reduced return or a loss of resources (Landolt and Portest, 1996; Villena et al., 2011). There is considerable conjecture about why this may occur: perhaps the older a relationship, the more dissatisfied one or both parties may become (Grayson and Ambler, 1999; Moorman, Zaltman and Deshpande, 1992; Anderson and Jap, 2005). Perhaps the relationship becomes dull or expectations increase to an unrealistic level (Anderson and Jap, 2005) or possibly the parties learn enough over time for the relationship to become extraneous (Inkpen and Paul, 1997), or for the parties to begin behaving opportunistically (Klein, 1996; Anderson and Jap, 2005).

1.6.1 Dark side variables, specific

Several dark side variables have been conceptualized and some have been empirically tested in the field of supply chain management. Table 3 is organized by the dark side variable of study. The studies in Table 3 were identified in one of three ways: 1) the variables of interest were explicitly identified as dark side variables; 2) the study hypothesized a non-linear or curvilinear relationship between relational variables and performance variables; or 3) the studies found a non-linear result between relational variables and performance variables.

1.6.1.1 Embeddedness and network centrality

The first dark side variable is embeddedness and network centrality. Uzzi (1997) found qualitatively that there was a non-linear relationship between embeddedness and network centrality and economic performance. Lechner, Frankenberger and Floyd

(2010) hypothesized and found support for a non-linear effect of embeddedness and network centrality on performance.

1.6.1.2 Information sharing

The next dark side variable is information sharing. Only one study was located which describes the potential dark side effects of information sharing: Grover, Lim and Ayyagari (2006). The authors referred to the dark side explicitly, but did not hypothesize a non-linear relationship between information sharing and the dependent variable: pricing decision variance. Their deductive content analysis supported the initial hypothesis that increasing amounts of information sharing leads to increasing price dispersion (Grover, Lim and Ayyagari, 2006).

1.6.1.3 Learning and absorptive capacity

The third dark side variable is learning and absorptive capacity. Hamel (1991) neither referred to learning/ absorptive capacity as a dark side variable, nor hypothesized a non-linear effect on power, the dependent variable of interest. However, their qualitative results supported the negative effect of learning on the balance of power (Hamel, 1991).

1.6.1.4 Long term orientation

Another dark side variable is long term relationship orientation. Grayson and Ambler (1999) specifically referred to the dark side of long term orientation in their empirical study, but did not hypothesize a non-linear relationship between long term orientation and research use. The study evaluated factors which affected the use of

marketing research by clients (Grayson and Ambler, 1999). The results of the study were mixed, in that there was not a curvilinear relationship and the dark side effect was proposed as a moderator (Grayson and Ambler, 1999). Findings suggested that trust was significant in short-term oriented relationships, but not in long-term oriented relationships; while involvement as an independent variable was a significant predictor of research use only in long-term oriented relationships (Grayson and Ambler, 1999).

1.6.1.5 Reciprocity/ guanxi

The fifth dark side variable is reciprocity and guanxi. Gu, Hung and Tse (2008) referred to the reciprocal, though culturally-specific practice of guanxi as a dark side variable, but did not hypothesize a non-linear relationship between guanxi and market performance. The empirical study found that under certain conditions, guanxi has a negative relationship to market performance (Gu et al., 2008). In this specific study, those moderating conditions were competition and technological turbulence. This study was founded on social capital theory (Gu et al., 2008).

1.6.1.6 Relationship-specific investment

The next dark side variable is relationship-specific investments. Bensaou and Anderson (1999) empirically analyzed the relationship between relationship-specific investment, opportunism and performance. Though the authors neither referred to the dark side of relationship-specific investment nor hypothesized a non-linear relationship between the independent and dependent variables, their study results supported a negative effect of relationship-specific investment on performance, and a positive effect of relationship-specific investment on opportunism (Bensaou and Anderson, 1999).

1.6.1.7 Social capital

The seventh dark side variable is social capital. The first paper in this variable is Adler and Kwon's (2002) conceptual discussion which, though did not refer to social capital as a possible dark side variable, indirectly suggested there may be dark side effects of social capital on value. Similarly, Locke (1999) proposed the same effect on organizational effectiveness. Villena, Revilla and Choi (2011) is one of the few empirical papers which referred to the variable explicitly as having dark side effects, hypothesized non-linear effects of social capital on the dependent variable, and empirically supported that hypothesis based on social capital theory. McFadyen and Cannella (2004) did not explicitly refer to the dark side of social capital, but did hypothesize non-linear effects of social capital on the dependent variable: knowledge creation. Their empirical study supported that hypothesis based on the theory of knowledge creation (McFadyen and Cannella, 2004).

1.6.1.8 Deep relationships

The following dark side variable is deep relationships. Mitrega and Zolkiewski (2012) explicitly referred to the dark side of deep relationships, but did not predict non-linear effects of the independent variable. Due to the inductive nature of the study, the authors explored the possible dark side effects of deep relationships (Mitrega and Zolkiewski, 2012). The qualitative investigation revealed that yes, indeed, there are several dark side effects of deep relationships in the context studied.

1.6.1.9 Trust

Trust is the final dark side variable to be discussed. Though Kusari, Hoeffler and Iacobucci (2013) neither referred to trust as having a "dark side," nor did they hypothesize non-linear effects of trust on performance and satisfaction, their mixed methods study found an inverted relationship of trust on performance and satisfaction, moderated by position in the business relationship life cycle (Kusari et al., 2013).

1.6.1.10 Dark side variable conclusion

Regardless of the mechanism, empirical studies have confirmed the presence of dark side effects based on relationship variables which, from the outside, seem to be productive and beneficial (Anderson and Jap, 2005). Dark side variables erode relationships even when both partners feel the supply chain relationship is going well (Anderson and Jap, 2005). This brief review has evaluated and described empirical and conceptual works which have either identified a variable as dark side variable or having a dark side, hypothesized non-linear relationships between the exogenous and endogenous variables, or achieved that result empirically. In Table 3, there are only two articles which identify a variable as explicitly a dark side variable and hypothesize non-linear relationship between the independent and dependent variable: Wise (2014) and Villena, Revilla and Choi (2011).

Due to the focus on evaluating the boundary conditions of Social Exchange Theory (SET), this dissertation will focus on the following dark side variables: social capital, reciprocity, long term orientation, relationship specific investment and learning/ absorptive capacity. SET focuses on reciprocal behaviors and social norms,

and these relational variables are predicted by SET to improve performance. Many of these dark side effects have not been tested quantitatively or have been tested in very different contexts. For example, learning and absorptive capacity has only been tested in an inductive qualitative study; extending these studies by quantitative testing and by bringing the concepts into the supply chain context will contribute to supply chain literature by extending these dark side concepts and testing them in the supply chain context. The variables under study are those specifically relevant to Social Exchange Theory (SET), a well-supported SCM theory.

This dissertation will be one of the first, if not the first, empirical explicit study of multiple dark side effects simultaneously which will allow the researcher to evaluate the behavior of each variable together (Hair and Black, 2009) instead of isolating the dark side independent variable as has been done in previous supply chain relationship studies (Grover et al., 2006; Gu et al., 2008) (See Table 3). This dark side effect investigation will identify the boundary conditions of Social Exchange Theory and contribute to the currently fragmented dark side literature. For managers, understanding that indiscriminate promotion of relational variables may not have the same effect on performance as expected.

Finally, the presence and result of the dark side effect is a complex occurrence and may be affected by many qualities or factors within a business relationship which may be evaluated as moderators. Two of these potential moderators include relationship quality (Rauyuen and Miller, 2007) and relationship life cycle (Eggert, Ulaga, and Schultz, 2006). This dissertation will focus on supply chain relationships in the mature phase of the life cycle moderated by relationship quality (Jap and Ganesan, 2000; Kusari et al., 2013).

1.7 Moderation

Relationship life cycle will be used to frame the response set of the study by instructing the respondents to consider only relationships in the mature phase of the life cycle. RQ will be used in its continuous form to moderate the relationship between the exogenous and endogenous variables.

1.7.1 Framing the response set: Relationship life cycle

The position in the relationship life cycle will be used to frame the response set only to those business relationships in the mature position of the life cycle. Relationship life cycle is defined as a continually changing process in which business relationships progress over time (Dwyer et al., 1987; Jap and Ganesan, 2000; Min et al., 2005). The concept accepts that business relationships are not static, and the progression of a relationship in the life cycle stages is considered to alter the effect of certain relational constructs (Kusari et al., 2013; Eggert et al., 2006; Medlin, 2004; Johnson and Selnes, 2004; Holmlund, 2004). According to Barnes (2005), there is significant professional and academic interest in the progress of buyer-seller relationships.

In a simplistic fashion, it may seem that the age or duration of the relationship would provide similar effects. However, this has been shown to be incorrect (Ellram, 1991; Kotler, 2003; Eggert et al., 2006). It is possible for relationships to stay in a single relationship life cycle phase for many years or experience rejuvenation or a second growth phase (Ellram, 1991; Kotler, 2003; Eggert et al., 2006).

The idea of the business relationship life cycle is so pervasive that it is accepted as truth (Kusari et al., 2013). Researchers agree that there are distinguishable phases in the relationship life cycle and that these phases have identifying behaviors and orientation

(Jap and Ganesan, 2000; Kusari et al., 2013; Eggert et al., 2006; Dwyer et al., 1987; Ring and Van de Ven, 1994). There have been calls for research evaluating how close business relationships change over the stages of the relationship life cycle in the supply chain context (Min et al., 2005) and specific calls for the investigation of the dark side variables and the business relationship life cycle (Villena et al., 2011). This dissertation's contribution will be, in part, answering these calls for research.

It is empirically shown that the phase of the business relationship affects relationship value (Eggert et al., 2006; Jap and Anderson, 2007; Van de Vijver, Vos, and Akkermans, 2011), and may therefore affect other facets of a business relationship, including the effect of the dark side variables. Empirical studies have investigated the moderating effect of the stages of the relationship life cycle (e.g. Kusari et al., 2013). Kusari et al.'s (2013) mixed methods study confirmed the phase of relationship life cycle moderated the effect of trust on both performance and relationship satisfaction (Kusari et al., 2013). Fynes, deBurca and Mangan (2008) found empirical support for changes in relational variables in response to the relationship life cycle phases.

There have been many conceptualizations of the business relationship life cycle stages in the industrial market or business-to-business market (Barnes, 2005). One of the early examples is Frazier's (1983) simple progression of initiation, implementation and review. Next is the Dwyer, Schurr and Oh's (1987) more complex stages: awareness, exploration, expansion, commitment and dissolution. These stages were adapted by Jap and Ganesan (2000) and Fynes, deBurca and Mangan (2008), and the five stages were simplified to three by Eggert, Ulaga, and Schultz (2006) to growth, maturity and decline.

There are two commonalities among the various conceptualizations: the direction of growth and the strength of that growth of the relationship itself (Eggert et al., 2006). For example, if the parties intend to expand their business, the relationship is in its growth phase. When the firms have a lower intention to expand their relationship, this places them in the mature phase; while an intention to diminish their relationship shows a relationship in the decline phase (Eggert et al., 2006). Next, the characteristics of the phases of the business relationship life cycle will be described.

1.7.1.1 Growth

The growth phase exhibits an increasing interest in investing in relationship-specific assets, and increasing levels of commitment and trust between parties (Jap and Ganesan, 2000). There is an expansion in joint participation, investments, information sharing, and the willingness to take on increased risks and acceptance of interdependence (Dwyer et al., 1987). During the growth phase, the goal is to create a mutually-beneficial, long term relationship and to understand each party's intentions and motivations (Narayandas and Rangan, 2004). The partners often feel confident in one another and in their expectations of their partner's behavior (Dwyer et al., 1987). During this phase, shared experiences and the development of contractual governance increases the durability of the partnership (Dwyer et al., 1987; Kusari et al., 2013).

1.7.1.2 Maturity

The second phase is maturity. During the maturity phase, the partners are more long-term oriented and willing to forego short-term benefit for the expectation of long-term benefit (Jap and Ganesan, 2000; Kusari et al., 2013). If the growth phase is

characterized by potential errors and a somewhat bumpy learning process, the mature phase finds the partners often finding the satisfaction and rewards they expected from the relationship (Jap and Ganesan, 2000; Kusari et al., 2013). This feeling of accomplishment leads to a measure of relaxation in terms of expectation of the partner's motivations and intentions (Jap and Ganesan, 2000; Kusari et al., 2013). During this phase, competence has been proven, leading to additional trust (Kusari et al., 2013).

1.7.1.3 Decline

The decline phase typically includes one or both partners searching for alternatives and/ or signaling their desire to end the relationship due to relationship deterioration (Jap and Ganesan, 2000). During the decline phase, opportunistic behavior or short term orientation may become more common (Kosari et al., 2013).

1.7.1.4 Focus and contribution of this dissertation

The primary interest of this dissertation is the change of the relationship from maturity to the decline phase. During the mature phase, the relational variables which may exhibit a dark side effect are usually present. For example, it takes considerable time for individuals within a partnership to develop social capital. By the time the partners have developed social capital and have become more relaxed in their dealing with one another, they are often exhibiting characteristics of the maturity phase (Jap and Ganesan, 2000; Kusari et al., 2013). At the mature stage of the relationship life cycle, these variables have the highest probability of leading to an *unexpected* decline in the relationship.

This dissertation will contribute to managerial practice by providing knowledge of the relationship life cycle, in that it can create more realistic expectations for both partners (Fynes et al., 2008). Adding the dark side variable effect to this base of knowledge will arm supply chain managers with the knowledge to manipulate these factors to obtain the best possible outcome.

1.7.2 Continuous moderator: Relationship quality

The mature position in the relationship life cycle will frame the response set of relationships studied in this dissertation. Research shows, however, that there are other variables with very strong moderating effects on performance, satisfaction and related dependent variables. According to Palmatier, Dant and Grewal's (2006) meta-analysis of relationships' effect on performance, one of the more effective moderators of the business relationship outcome is relationship quality (RQ). RQ provides more insight into the performance of relationships than other constructs (Palmatier et al., 2006; Nyaga and Whipple, 2011; DeWulf, Odekerken-Schroder, and Iacobucci, 2001) which is composed of, most often, commitment, trust and relationship satisfaction (Palmatier et al., 2006).

Some studies have used RQ as a dependent variable, such as Kumar, Scheer and Steenkamp (1995) who studied the effect of fairness of the suppliers on RQ, and found a strong, significant effect (Kumar et al., 1995). Other studies have used RQ as a mediator, moderator, or exogenous variable. Crosby, Evans and Cowles (1990) empirically found RQ to be both a strong significant predictor of future interaction (relationship continuity). Nyaga and Whipple (2011) studied RQ's impact on relationship satisfaction and supply chain operational performance. The study found that in higher levels of RQ,

both satisfaction and supply chain operational performance were higher (Nyaga and Whipple, 2011). DeWulf et al. (2001) empirically found a strong mediation effect of RQ on the relationship between relationship investment and behavioral loyalty in a business-to-consumer context and Rauyruen and Miller (2007) empirically found that RQ significantly influenced attitudinal loyalty in the business-to-business context. Due to the acceptance in literature of the strong effect and importance of RQ as a moderator of relationship studies, this study will include RQ as a moderator of the paths between the dark side variables and the dependent variable.

1.8 Dependent variable

There are two dependent variables of interest in this study: likelihood of relationship termination and perceptions of relationship financial performance. Because the end of a business relationship may be expected or beneficial (Giller and Matear, 2001) and the exit of the relationship is not always an option due to exit barriers, inertia, or the need for stability (Mitrega and Zolkiewski, 2012), a measure of relationship financial performance will also be used as a dependent variable.

Perceptions of relationship financial performance are the perceptions of financial costs and benefits incurred by a particular buyer-supplier relationship (Duffy, 2008). Because close business relationships are often promoted as a way of improving focal firm performance, the perceptions of the relationship partners can offer some insights into the partners' perception of relationship success (O'Toole and Donaldson, 2000; Spekman and Carraway, 2006; Duffy, 2008), particular because the benefits of business relationships can be difficult to quantify.

1.9 Literature summary

In summary, literature has encouraged firms to develop strong relationships as a way to improve performance and reduce uncertainty (Cannon and Perreault, 1999); however, empirical studies have shown mixed results of benefits in studying these types of relationships (Moorman et al., 1992; Anderson and Weitz, 1992; Grayson and Ambler, 1999; Barnes, 2005; John, 1984) and a few studies have shown that characteristics of strong relationships also exhibit a dark side, or negative effect on the relationship's performance and continuity (Anderson and Weitz, 1992; Granson and Ambler, 1999; John, 1984; Backhaus and Buschken, 1999). Supply chain management studies have focused most frequently on variables which have a positive effect on firm performance, and have often neglected the investigation of what makes relationships fail or perform poorly. This dissertation will focus exclusively on this category of variables known as the dark side variables, which have both positive and negative effects on relationship performance.

This dissertation will replicate one previous empirical study: Villena, Revilla and Choi, 2011. Villena, Revilla and Choi (2011) empirically studied and supported the non-linear relationship between social capital and performance. This dissertation will also extend multiple empirical studies. This study will extend Hamel (1991) by hypothesizing the non-linear effects of learning as a dark side variable. Hamel (1991) empirically studied the effect of learning on the balance of power and found that learning can both negatively and positively affect the balance of power. The authors did not refer to the effect as a dark side effect, nor did they hypothesize such a result.

This study will also extend Grayson and Ambler (1999) by hypothesizing the non-linear effects of long-term orientation, though they studied the dark side of long-term

orientation as a moderator. Grayson and Ambler (1999) referred to the dark side effect of long term orientation, though did not hypothesize the dark side effect. They found that long term orientation, as a moderator, dampened the beneficial effect of trust and involvement on research use.

An additional extension resulting from this dissertation is to extend the findings of Gu, Hung and Tse (2008) by hypothesizing non-linear dark side effects of reciprocity. The authors referred to reciprocity/ guanxi as a dark side variable, but did not hypothesize non-linear effects. They found that when guanxi is moderated by competition and technological turbulence, performance is reduced (Gu et al., 2008).

This study will incorporate the broader Political Economy Framework from general business literature, with the marketing and SCM theoretical foundation of Social Exchange Theory. The study explicitly identifies the variables as dark side variables and sets up the hypotheses to test the dark side effects of the independent variables on two dependent variables moderated by RQ. The overarching contribution of this dissertation is to test the boundary conditions of SET by demonstrating the non-linear effect of these relational variables on the dependent variables. Therefore, the research questions of interest are 1) How do dark side variables influence relationship financial performance in a mature supply chain relationship? 2) How do dark side variables influence the termination of a mature supply chain relationship?

1.10 Relevance and contribution
1.10.1 Managerial relevance and contribution

Some empirical studies have had negative results from such previously-considered positive factors such as collaboration (Anderson and Jap, 2005; Villena et

al., 2011; Fang et al., 2011; Grégoire and Fisher, 2008) and the relationships may have a considerably high failure rate (Fang et al., 2011; Heide and John, 1990; Kogut, 1988; Saxton, 1997; Wuyts and Geyskens, 2005). Business and supply chain management literature shows that even positive relationship variables may have a dark side.

For supply chain managers, understanding the dark side of relational variables has important implications, due to the extensive resources firms extend to develop these relationships (Adler and Kwon, 2002; Autry and Griffis, 2008; Villena, Revilla, and Choi, 2011). For example, earned social capital, in its dark side, can lead to inefficient decision-making or opportunistic behaviors, instead of an expected improvement in performance (Locke, 1999; Granovetter, 1985; Grover et al., 2006; McFadyen and Cannella, 2004; Villena et al., 2011). Though the concept of dark side variables may seem counterintuitive, it has been empirically shown that some positive relational variables have allowed or even promoted the downfall of a previously well-performing, satisfactory supply chain relationship.

For the benefit of supply chains, it is essential to discover the causes of supply chain partnership failure (Adler and Kwon, 2002; Autry and Griffis, 2008; Fang et al., 2011; Landolt and Portes, 1996; Villena et al., 2011). Even those supply chain relationships which have been created with considerable time and investment are vulnerable to destruction (Anderson and Jap, 2005; Fang et al., 2011). This study focuses intently on the effect of the dark side variables: those variables which are highly recommended as a conduit to excellent and beneficial supply chain relationships, but have been suggested and shown to have mixed or negative effects on the performance of these relationships. In particular, this study will focus on the dark side effect of learning/ absorptive capacity, long term orientation, reciprocity and social capital

because these variables are most relevant to the theoretical foundation. Empirically studying these variables simultaneously through structural equation modeling creates results which may 1) confirm previous empirical results in dark side variable studies; 2) explore as-yet untested dark side variables; 3) and expand theoretical understanding of SET by testing its boundary conditions.

There is clear acknowledgement of the importance and advantage conveyed by some supply chain partnerships. However, relationships do encounter complications, problems, and negative factors which detract from the outcome of the relationship (Fang et al., 2011; Grayson and Ambler, 1999; Pressey and Tzokas, 2004). Most empirical research focuses on the positive effect or bright side of various relational constructs and evaluates how those constructs positively affect the performance of the firm (Abosag et al., 2014). Thus, while research has suggested that partnering behavior and results have a significant positive impact on the performance of the member firms (Gulati, 1999; Lavie, 2006), in-depth knowledge of the factors which impact partnership failure is scant (Anderson and Jap, 2005; Mohr and Spekman, 1994).

This research will indicate how the dark side relationship variables affect perceptions of relationship financial performance and relationship continuity. This study's results will help supply chain managers assign resources more accurately and prudently when building relationships among many partners (Kusari et al., 2013). The results from this study will also help supply chain managers understand that relationship building, and investing in relationship-specific assets in particular, must be done with a clear knowledge that the expected performance improvement may not materialize (Fink, Edelman and Hatten, 2007). There is a large amount of literature confirming positive effects of independent variables on business performance, while

there is much less literature pointing out what hurts relationships (Anderson and Jap, 2005). There is even less literature, particularly empirical literature, which reports on good constructs which hurt the relationship, that is, the dark side variables. This knowledge and understanding will contribute significantly to normative recommendations offered to business managers particularly when the reality is that many of these types of relationships fail (Anderson and Jap, 2005; Mohr and Spekman, 1994). Thus, this study intends to confirm the presence and effect of multiple dark side variables.

Research has suggested that partnering behavior and results have a significant positive impact on the performance of the member firms (Gulati, 1999; Lavie, 2006). Managers though must remain aware and wary of all risks, including misplaced investments in relationships which may not have the expected benefit (Villena et al., 2011). However, if the advantage typically attributed to strong buyer-supplier relationships does have the potential for implosion, it is essential and imperative to understand why, and how it may be mitigated (Grayson and Ambler, 1999). The risks and benefits of supply chain relationships is an essential area of research within supply chain management (Giunipero et al., 2008) in large part to assist supply chain managers in their supply chain relationship developments and effectiveness.

1.10.2 Theoretical relevance and contribution

Many theories have been used to explain supply chain relationships including Resource Dependence, Social Exchange Theory, the Political Economy Framework, Economic Sociology and Transaction Cost Economics (Robicheaux and Coleman, 1994; Fynes, deBurca and Mangan, 2008). Each of these theories has contributed to

understanding supply chain relationships and their dimensions (Fynes et al., 2008). Empirical studies in the field of supply chain management suggest that the study of supply chain relationships has moved from a more transactional model, e.g. Transaction Cost Economics, to a more relational perspective, e.g. Social Exchange Theory (Sako, 1992, Lamming, 1993; Ellram and Krause, 1994; Handfield, 1994; Harland, 1996; Fynes and Voss, 2002; Fynes et al., 2008). This dissertation evaluates supply chain relationships using a relational perspective vis-à-vis Social Exchange Theory (SET).

One of the primary contributions of this dissertation is testing the boundary conditions of the current conceptualization of SET, which will provide a more nuanced perspective on commonly accepted theoretical propositions (Goldsby et al., 2013). As SCM research and literature becomes more mature, more attention is placed on empirically revealing the boundary conditions of accepted theories (Fawcett and Waller, 2011). The more nuanced perspective achieved by identifying theoretical boundary conditions should be the goal of researchers (Goldsby et al., 2013; Knemeyer and Naylor, 2011). This dissertation also contributes to supply chain literature by answering calls for theory testing in supply chain management research (Carter, 2011; Mentzer et al., 2001; Mentzer and Kahn, 1995) and conducting research which expands the understanding of business relationships by evaluating negative outcomes of mature supply chain relationships (Mitrega and Zolkiewski, 2012).

1.10.3 Theoretical Foundation

This study is founded upon two academic theories; both of which are commonly accepted as theoretical foundations in the field of supply chain management: the Political Economy Framework and Social Exchange Theory (SET). The Political

Economy Framework attributes organizational performance to both social and economic factors. Therefore, the Political Economy Framework creates a grand framework in understanding supply chain relationships. Political Economy Framework is often recommended for analysis in buyer-supplier relationships because the theory can support analysis in many different relationship structures and takes into account the interactions and processes between channel members at multiple units of analysis while considering the power-dependence relationship between partners (Stern and Reve, 1980; Duffy, 2008; Arndt, 1983; Krapfel, Salmond and Spekman, 1991; Nidumolu, 1995; Webster, 1992; Duffy, 2008; Golicic and Mentzer, 2005; Izquierdo and Cillan, 2004). The Political Economy Framework incorporates several forces which affect an organizational relationship, including negative forces such as the dark side effect of relationship variables. Taking the breadth of the Political Economy Framework and combining it with SET allows the research to focus on relational variables in the dark side study within the larger organizing framework of Political Economy Framework.

SET focuses on the norms of reciprocating benefits or behavior such that parties will cooperate or behave in a mutually beneficial way under the expectation that they will give and receive relatively equally from the relationship (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958). That is, SET contends that beneficial behavior would be met with reciprocity of beneficial behavior and relationships would deepen over time, due to the norm of reciprocity and the social norms inherent in SET (Dwyer, Schurr and Oh, 1987). However, limited empirical evidence has shown that the relationship variables known as dark side variables do not always create the expected positive results to the supply chain partners, as SET suggests.

A contribution of this dissertation is combining these theories to analyze the mature supply chain relationship and its progress. The Political Economy Framework gives an overall framework within which to view the entirety of the relationship between two organizations, including aspects of the relationship outside the realm of SET, such as power or competitive forces. However, the objective of this study is to focus primarily on the relational variables which may exhibit dark side characteristics during the mature phase of the supply chain relationship. Combining the Political Economy Framework with SET contributes the explanatory power of both to the behavioral aspect of business relationships while viewing these behavioral aspects as part of the total relationship which also includes organizational power, processes and interactions between organizations.

Thus, this study frames the overall analysis with the Political Economy Framework, while simultaneously seeking to identify boundary conditions of SET. The combination of these theories provides both the behavioral foundation commonly found in SCM research, as well as a broader theory frequently used to frame business operations and relationships. Another contribution of this dissertation lies in testing the boundaries of SET, which even if disconfirmed, provides rich and relevant territory for further investigation. Relationship theories often attribute greater value to close relationships, above and beyond the cost of creating and maintaining that relationship. Deepening theoretical understanding of mature supply chain relationships provides valuable theoretical insight into how and why these relationships fail or succeed.

1.11 Overview of research approach

This research will be quantitatively studied through a survey of supply chain managers to provide a view of behaviors or attitude through this often-used method of data collection in academic research (Westbrook, 1995). Each research method has its own limitations, strengths and weaknesses which are evaluated in terms of internal and external validity (McGrath and Brinberg, 1983; Westbrook, 1995). The clear strength of quantitative surveys is the external validity of the conclusion (McGrath and Brinberg, 1983). Other strengths of survey research include its low cost, quick data collection and analysis (Dillman and Smyth, 2014).

To clearly identify the most typical independent variables of the study, a thorough literature review was conducted. Existing scales will be used for all latent constructs and the survey will be pre-tested to identify statistical reliability of the constructs and understanding. The respondents will consist of a sample of the population of mid- and upper-level managers who provide or purchase logistics services and are involved in managing those supply chain relationships. This sample will come from the readership of a leading logistics blog written by a logistics professional with over 30 years of management experience in the logistics and supply chain industry. Analysis will be conducted using partial least squares (PLS) - structural equation modeling (SEM).

While the aim of this dissertation is to support the existence and effect of the dark side variables (relationship-specific investment, long-term relationship orientation, learning/ absorptive capacity, social capital, and reciprocity) in mature supply chain relationships, there is value in the disconfirmation of the hypotheses, as

well. The disconfirmation of hypotheses contributes and reveals boundary conditions of theory which need further investigation (Webster and Sell, 2007).

1.12 Conclusion

This research will extend theoretical understanding of mature supply chain relationships by evaluating the damaging force of the dark side effect. Theories addressing supply chain relationships help both academics and practitioners understand and predict the most beneficial relationship strategies for a particular business situation. Because firms have a finite amount of resources, focal firms may have only a certain number of cooperative supply chain relationships.

The remainder of this study will be organized as follows. In Chapter 2, a description of the theoretical foundation of the dissertation will be presented. This study is founded upon two theories: the Political Economy Framework and Social Exchange Theory. Next, dark side variables will be discussed in general, followed by a more specific description of the particular variables being studied, and then the full model will be presented. Chapter 3 will discuss the methodology: a cross-sectional survey of management professionals involved in mature supply chain relationships. Also in this chapter, the analysis will be described. This survey will be analyzed using a partial-least squares (PLS) structural equation modeling approach using WarpPLS 5.0 software. Chapter 4 will describe the results of the analysis in detail including data and scale quality measure, path coefficients, and effect sizes. These results will be interpreted. Chapter 5 will include the discussion, theoretical implications and contributions, managerial implications and contributions, and future research opportunities.

2.0 Literature review

This literature review will begin by describing the theoretical foundation for the study. The two theories upon which this study is based are Social Exchange Theory and the Political Economy Framework. Second, the literature on dark side variables will be presented including relationship-specific investments, long-term relationship orientation, learning and absorptive capacity, social capital, and reciprocity. Next, relationship life cycle position, and the moderator relationship quality (RQ), will be discussed. Finally, the structural model and hypotheses will be presented and discussed.

2.1 Theory

This study is founded on the combination of two widely-accepted academic theories: the Political Economy Framework and Social Exchange Theory (SET). The Political Economy Framework proposes that business performance is the result of many forces including social forces, economic forces, and the interaction of power of the various parties involved, both individual and organizational (Stern and Reve, 1980; Arndt, 1983; Buchanan, 1964). The Political Economy Framework is very broad and holds considerable explanatory power, though considered too broad for empirical testing (McIvor and Humphreys, 2004). For this particular study, combining the Political Economy Framework with SET creates a broad theoretical foundation. SET indicates, in part through its social norms and the norm of reciprocity, that negative behaviors would be met with a decrease in relational performance, while positive behaviors would be met with an increase in relational performance. However, evidence suggests and supports the existence of the dark side effect of relational variables, such as relationship-specific investments, long-term relationship orientation, learning and

absorptive capacity, social capital, network density and reciprocity, tie strength, embeddedness, information sharing and shared vision. SET is unable to explain, using its theoretical propositions as currently formulated in business research, the effect of these dark side variables. That is, SET suggests that, for example, if one partner has high levels of social capital with another partner, their performance will improve. However, this is not always the case (Anderson and Jap, 2005). Therefore, this dissertation will empirically test the boundary conditions of the current business formulation of SET within the Political Economy Framework.

2.1.1 Political Economy Framework

The Political Economy Framework is a theory which evaluates an interaction of power, economic forces, and social forces upon behaviors and performance of the system and its players (Stern and Reve, 1980; Arndt, 1983, Buchanan, 1964). The Political Economy Framework is a very broad theory supporting business performance based on multiple internal and external forces and has been used to conceptualize organizational behavior and relationships between organizations (Zald, 1970; Arndt, 1983; Benson, 1975). The Political Economy Framework is highly appropriate for analyzing buyer-supplier relationships because it includes power, conflict, internal and external drivers of institutional behaviors and changes (Arndt, 1983) and can support analysis in many different relationships structures and types; taking into account the interactions and processes between channel members as well as the power-dependence relationship between parties (Stern and Reve, 1980; Duffy, 2008; Arndt, 1983; Krapfel et al., 1991; Nidumolu, 1995; Webster, 1992; Golicic and Mentzer, 2005; Izquierdo and Cillan, 2004) in evaluating the forces on performance (Duffy, 2008). Per Benson (1975),

there is a need of an integrative theory and framework in which to organize interorganizational research. The Political Economy Framework, because of its breadth, can serve as that integrative, organizing framework due to its attention on various and diverse factors impacting relationships (Benson, 1975). The Political Economy Framework considers behavioral factors of organizational relationships while also considering dependence, economic forces, and political forces which also impact organizational relationships (Benson, 1975).

In 1980, Stern and Reve developed the Political Economy Framework based on previous work on social systems. This work was the initial identification of the possible variables considered responsible for determining the behavior and structure of channels (Stern and Reve, 1980). The authors brought the original framework from social sciences into the distribution channels literature to solve a theoretical need for the Political Economy Framework, because the polity and economy of organizational relationships are so tightly linked that they cannot be studied singularly (Stern and Reve, 1980). Since then, theoretical developments have made it possible, and sometimes essential to focus on finer details of supply chain relationships. For example, Cropanzano and Mitchell (2005) describe the breadth of the Political Economy Framework as a foundation lacking predictive capabilities; one of the developments the authors hoped to put forth were some more specific theoretical propositions. To provide focus, this dissertation will combine the overarching theoretical foundation of the Political Economy Framework with a more narrowly-focused theory, Social Exchange Theory.

2.1.1.1 Strength of Political Economy Framework

One of the clear strengths of the Political Economy Framework is the aforementioned ability to incorporate many concerns, both internal and external to the focal organization in its general research framework (Stern and Reve, 1980; Arndt, 1983; Duffy, 2008). Though several research propositions were developed by Stern and Reve (1980) in the development of the Political Economy Framework, one proposition is particularly relevant to this study: the more cooperative the relationships between channel members, the more profitable the channel will be as a whole (Stern and Reve, 1980). Though Stern and Reve (1980) focused on many larger, general, and more abstract concerns with the Framework, the authors also included what they termed channel sentiments. Channel sentiments included factors such as compatibility of goals, consensus, feelings of satisfaction and accomplishment and norms of exchange (Stern and Reve, 1980; Arndt, 1983). Combining the Political Economy Framework with Social Exchange Theory will create a strong focus on these channel sentiments.

Arndt (1983) was an early advocate of using the Political Economy Framework for analyzing buyer-supplier relationships (Duffy, 2008). Arndt (1983) also described how the Framework's strengths included its generality as well as its integrative potential. The theory's generality allows it to be applied to many different situations in marketing, channel, or buyer supplier relationships (Arndt, 1983). Using the concepts as written in Arndt's (1983) article, this dissertation will be focused on the internal economy. There are four aspects of the internal economy: incentives, allocation rules, internal exchange processes, and the social unit (Arndt, 1983). When focusing in on the social unit, the attention is directed to the internal flows of information, resources and

various activities (Arndt, 1983). According to Arndt (1983), the Political Economy Framework is a paradigm rather than formal theory: "the foundation of theory rather than theory itself" (p. 50). Therefore, the Political Economy Framework focuses primarily on research strategies, as opposed to defining specific theoretical relationships (Arndt, 1983).

2.1.1.2 Use of Political Economy Framework in buyer-supplier relationships

Krapfel, Salmond and Spekman (1991) developed a conceptual work which advocated the use of the Political Economy Framework in analyzing buyer-supplier relationships. Krapfel et al., (1991) moved the Political Economy Framework into the field of analyzing business relationship value and using the framework to evaluate how different ways of managing relationships may lead to mutual benefits (Krapfel et al., 1991). The Political Economy Framework also allows research to focus on social interactions, as opposed to the strict economic paradigm of the past (Krapfel et al., 1991). The Political Economy Framework has been often recommended in the literature for studying buyer-supplier relationships of many types and in many industries (Webster, 1992; Duffy, 2008; Day and Klein, 1987; Nidumolu, 1995;

2.1.1.3 Political Economy Framework: Exchange

This dissertation focuses on a part of the Political Economy Framework, that is: exchange. Norms of exchange are defined as "the extent to which interorganizational transactions are based on mutual trust and a feeling of affiliation" (Nidumolu, 1994; p. 92). SET focuses on this norm almost explicitly. Nidumolu (1995) empirically confirmed that norms of exchange are part of the climate within the framework of the Political

Economy Framework. Izquierdo and Cillan (2004) drew from several theoretical foundations including the Political Economy Framework to empirically test the relationship among trust, interdependence, and relational orientation on both the manufacturer and supplier perspectives (Izquierdo and Cillan, 2004). Golicic and Mentzer (2005) used the internal Political Economy as a foundation to study relationship magnitude and its antecedents. Duffy (2008) used the Political Economy Framework to examine inter-organizational relationships and create a continuum of buyer-supplier relationships.

2.1.1.4 Dimensions of Political Economy Framework

There are two primary dimensions of the Political Economy Framework: the external-internal, and the polity-economy (Zald, 1970; Arndt, 1983). The external-internal dimension refers to the environmental (external) and organizational (internal) linkages within and between the focal network, which may be visualized as a sphere (Arndt, 1983). The internal economy refers specifically to the degree of vertical arrangement between partners (Achrol, Reve, and Stern, 1983) and includes planning, bargaining, and decision making mechanisms (Achrole et al., 1983).

The second dimension or the polity-economy discusses the polity, which represents the power and control within and surrounding a certain social unit or network; while the economy refers to the transformation of inputs to outputs (Arndt, 1983). The economy is mostly focused upon resource allocation and efficiency, while the polity focuses on interdependence of the social groups (Arndt, 1983). The sociopolitical structure in the relationship refers to the distribution of power and dependence among

channel members and is typically described in dichotomous terms such as conflict or cooperation (Achrol et al., 1983).

The Political Economy Framework focuses on the focal social unit, the firm or organization and its relationship with other social units: business partners, for example (Arndt, 1983). These social units become tied together with repeated exchanges over time with links of a social nature (as is also discussed in SET), or of a political, informational, technical, or economic nature (Arndt, 1983). In this instance, there is an overlap of Political Economy Framework and SET. However, the Political Economy Framework goes far beyond social relationship to describe the performance of businesses to address other internal, external and economic factors also affecting business performance.

2.1.1.5 Limitations of Political Economy Framework

As noted earlier, the strength of the Political Economy Framework is its breadth, which is also one of its shortcomings. The theory is considered too broad by some and incomplete by others, lacking specific testable constructs and operationalization (McIvor and Humphreys, 2004; Arndt, 1983). The grand complexity of buyer-supplier relationships is well-served by this broad theory which combines internal and external forces to evaluate diverse influences behaviors and performance (Reve and Stern, 1979; Robicheaux and Coleman, 1994). Benson (1975) concurs: one of the advantages of the Political Economy Framework is that it provides structure to various and diverse inquiries in interorganizational relationships, and has a place for both behavioral and economic studies by allowing research to envision these studies in a broader context.

However, Political Economy Framework does not lend itself well to the development of specific hypotheses (McIvor and Humphreys, 2004). Because this dissertation is focused intently upon dark side variables, a second theory will contribute the sharp focus on these relational variables: Social Exchange Theory.

2.1.2 Social Exchange Theory

Social Exchange Theory (SET) has been very influential in business disciplines (Cropanzano and Mitchell, 2005). The central tenet of the theory is that series of social exchanges create social obligations (Emerson, 1976; Cropanzano and Mitchell, 2005) which, over time, will create mutually beneficial relationships (Cropanzano and Mitchell, 2005). In some circumstances, these exchanges and subsequent obligations create long term, beneficial relationships (Cropanzano and Mitchell, 2005).

The original work describing what became known as Social Exchange Theory was Homans (1958). This work of behavioral psychology focused on general human behavior, not organizational or business relationship behavior (Homans, 1958). This theory based in operant psychology focused on social power controlling individual behavior (Homans, 1958; Emerson, 1976).

SET predicts that benefits accumulate when partners behave in a reciprocal way to benefit one another (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958). According to SET, the costs to develop and maintain a supply chain relationship are lower in socially close relationships (Thibaut and Kelley 1959). In the business context, behaviors by one firm, according to SET, will result in reciprocal behavior by the other firm (Hald et al., 2009; Thibaut and Kelley, 1959) as the

primary motivation for creating partnerships is to avoid punishments and seek rewards (Griffith, Harvey and Lusch, 2006; Emerson, 1976; Bandura, 1986).

Thibaut and Kelly (1959) published a book presenting a theory of interpersonal relationships and group dynamics, which is also given seminal status for SET in business research. The theoretical description focuses on the costs and rewards obtained by individuals as a result of their interactions with other individuals (Thibaut and Kelly, 1959) including various gratifications, pleasures and satisfactions enjoyed by the individual, while costs refer to any mechanism of inhibition or deterrence of subsequent performance of a similar or the same behavior (Thibaut and Kelly, 1959). According to the authors, the rewards and costs which result from the behavior will deter or drive future occurrences of the same or similar behaviors (Thibaut and Kelly, 1959)—this concept is one of the central concepts in current SET studies in the business context.

Another central concept in the current SET is the behavioral norm (Thibaut and Kelly, 1959). A behavioral norm is a social obligation which both parties to the partnership feel obligation to cooperate with and non-cooperation is opposed with the use of power to induce conformity (Thibaut and Kelly, 1959). In many cases, these behavioral norms substitute for explicit or contractual cooperation and can be more efficient and economical forms of enforcement (Thibaut and Kelly, 1959). Simply put, these behavioral norms allow parties to control behavior with a reduced need to exercise personal or organizational power (Thibaut and Kelly, 1959). These behavioral norms can reduce costs, increase value and goal congruence, increase process compliance and increase the perception of rewards by each member (Thibaut and Kelly, 1959). In the end, these behavioral norms are proposed to improve the strength of the dyadic relationship (Thibaut and Kelly, 1959).

By 2006, SET was being applied directly to supply chain relationship research as a foundation for studying the effect of procedural and distributive just in supply chain relationships, with behavior and attitude as dependent variables (Griffith, Harvey and Lusch, 2006). The study described and supported the propositions of SET according to Blau (1964) in that actions which are rewarded are repeated over time and those which are punished are eliminated (Griffith et al., 2006).

Cropanzano and Mitchell (2005) intended to trace the conceptual ambiguities of SET back to their roots in social psychology. The authors' primary criticism of SET is its ambiguity which creates opportunities for multiple interpretations (Cropanzano and Mitchell, 2005). In this theoretical review, it is seen that the essence of SET is central to the various conceptualizations: each party in a relationships performs actions contingent upon the similar actions of others, which, in the longer term, should prove to be rewarding and mutually beneficial; also known as the norm of reciprocity (Cropanzano and Mitchell, 2005).

2.1.2.1 Earlier conceptualizations of SET incorporating the dark side effect

Even though Cropanzano and Mitchell (2005) present a 'going back to the roots' analysis of the SET, they fail to mention some of the theoretical conceptualizations within the foundational writings which support the point of diminishing returns for reciprocity and social exchange such as the point of diminishing returns (Homans, 1958; Emerson, 1976; Thibaut and Kelly, 1959; Blau, 1964), and the fatigue and satiation concepts (Thibaut and Kelly, 1959) that are present in earlier SET writings. These concepts are central and supportive to the study of the dark side effect in business relationships.

By 1976, Emerson had defined five related propositions related to reciprocal behaviors and social norms based on Homan's (1958) work. One specific proposal is directly related to the study of the dark side variables. This proposition states that the more often a particular reward is received, the less valuable additional units of reward become (Emerson, 1976). This proposition indicates, conceptually, the point of diminishing returns of the value of reciprocal behavior and social norms. As an example, as reciprocal behaviors increase, according to this proposition, the incremental value of each additional reciprocal behavior has less and less value over time. This concept is also called diminishing marginal utility (Emerson, 1976).

This concept leads to the realization of diminishing returns on behavioral rewards (Thibaut and Kelly, 1959), as is seen in the dark side variable effect. According to the authors, these diminishing returns create a situation in which the "recipient of the behavior would become less and less likely, as satiation develops to instigate the producer to repeat his behavior" (Thibaut and Kelly, 1959, p. 125).

Blau (1964) also described a point of diminishing returns with reciprocity in a way similar to Emerson (1976) and Thibaut and Kelly (1959): as the quantity of the rewards increase, the value derived from each additional unit declines (Blau 1964). From the cost perspective, at some point the cost to obtain additional benefits becomes greater than the incremental value of the benefits, and declines over time (Blau, 1964). The concepts of fatigue and satiation are also described by the foundational authors of SET, Thibaut and Kelly (1959). Fatigue and satiation are conceptually similar and states that as the same behavior is performed repeatedly, the perception of cost of performing the behavior each time will increase over multiple repetitions (Thibaut and Kelly, 1959).

A related concept, also developed by Thibaut and Kelly (1959), is the comparison level. The comparison is the standard used to compare rewards and costs at the individual level (Thibaut and Kelly, 1959). This comparison level is used when evaluating both additional and future interactions, as well as alternative partners, providers, and individuals (Thibaut and Kelly, 1959). This comparison level, in the case of partnerships, is often used to decide whether to continue in a particular partnership or abandon it (Thibaut and Kelly, 1959). The comparison level is the base-line comparison; that is, if the level of performance stays at a given level, whether high or low, that becomes the comparison or neutral point (Thibaut and Kelly, 1959). The comparison levels shift based on performance, and as performance increases, the comparison or neutral point increases (Thibaut and Kelly, 1959). In essence, this concept indicates that as the level of performance increases, the goal gradually loses its attractiveness; that is, reaches a point of diminishing returns (Thibaut and Kelly, 1959) a theoretical concept similar in result to fatigue and satiation.

Finally, Gouldner (1960) identified exploitation and tension as potential negative results of reciprocity. Exploitation is the exchange of things of perceptually unequal value (Gouldner, 1960). When exploitation occurs, the stability of the relationship is jeopardized; which suggests that there must always be equality or near-equality of exchange to maintain the stability of any relationship (Gouldner, 1960). Along similar lines as Homan (1958) and Emerson (1976), Gouldner (1960) also describes a potential negative effect of reciprocity: tension creation. Gouldner (1960) points out that it is possible for reciprocity to force tension and change in relationships. Therefore, Gouldner's (1960) additions to SET also reinforce the potential negative effect of the dark side variables.

These concepts theoretically support the dark side effect of relationship variables and are more predictive of the dark side than the current conceptualization of SET in organizational research, which excludes these concepts. Combining the aforementioned concepts creates a foundation for the understanding and predictive theoretical constructs related to dark side effects which the current definition of SET in the business context does not. The central idea of the dark side variables are that they either arrive at a point of diminishing returns or do not achieve the expected and predicted light side effect (Anderson and Jap, 2005).

Because this study is intent upon discovering when relationship variables do *not* lead to beneficial relationships as intended, it is seeking a set of boundary-conditions for the current formulation of SET as presented in Cropanzano and Mitchell (2005) and is testing the newly reincorporated theoretical propositions just discussed. In evaluating this study's hypotheses, the predictive value of SET will be tested as will the existence of the dark side effect.

2.1.3 Using both theories as a foundation

The Political Economy Framework provides an overarching framework by which to organize this research, allowing consideration of internal and external factors, as well as economic and behavioral factors. However, when empirically studying a topic as complex as supply chain relationships, SET allows the researcher to focus in on the social norms and reciprocal behaviors of the multi-dimensional occurrence of supply chain relationships.

2.2 Model and variables

The theoretical foundation and academic literature were used to develop the model under study. While the constructs were determined by the theoretical logic, the dark side and relationship quality literature drove the directions of the hypotheses. Figure 1 shows the entire structural model. The dependent variables of interest are the perceptions of financial performance of the supply chain relationship and the likelihood of relationship termination. The exogenous constructs are based upon a literature review on dark side variables of supply chain relationships.

Relational variables are often proposed as positively related to performance outcomes in buyer-supplier relationships, however, conceptual and limited empirical studies have shown these to, in some circumstances, have a negative, or dark side, impact on mature supply chain relationship performance and a positive impact on the likelihood of relationship termination (Villenna et al., 2011, Anderson and Jap, 2005). Based on literature, these dark side variables include relationship-specific investment, long-term relationship orientation, learning and absorptive capacity, social capital, and reciprocity. These constructs are included in the study due to their appropriateness and fit with SET. Each of these variables' expected effect can be explained by SET, an empirically-tested theory in SCM.

Several potential moderating variables have been discussed in the literature including relationship quality, environmental dynamism, phase in the relationship life cycle, and the degree of exploration and exploitation present in the supply chain relationship. This research will focus on the mature phase of the relationship life cycle to

frame the study, and the moderator of relationship quality (RQ) because the light or dark effect of the variables will depend upon the level of RQ.

Figure 1: Structural model
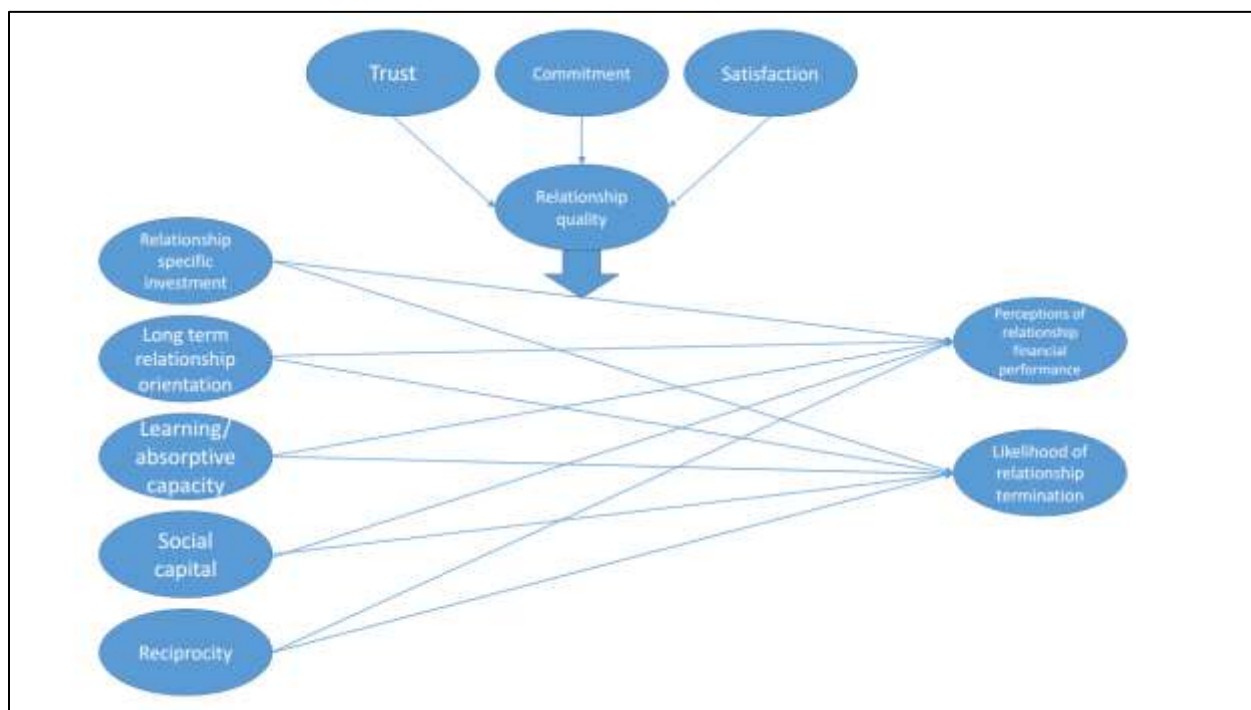
2.2.1 Relationship life cycle

Empirical investigation has supported the role of relationship life cycle phase on the perception of relationship value (Eggert et al., 2006). Eggert et al. (2006) discovered that social variables have a stronger effect in the build-up phase of the relationship and that in later phases, social support and personal interaction has less influence on the perception of relationship value (Eggert et al., 2006). Van de Vijver, Vos and Akkermans (2011) empirically showed that the relationship life cycle moderated the beneficial effect of socialization on communication quality. Jap and Ganesan (2000)

empirically confirmed that the relationship phase determined, in large part, the effectiveness of various relationship investments and relationship satisfaction. These results suggest that relationship life cycle phase moderates the effect of social variables on the value of the business relationship.

Researchers have often conceptualized buyer-supplier relationships as having different behaviors, orientations, and processes separated by a series of phases (Dwyer et al., 1987; Ring and Van De Ven, 1994; Eggert et al., 2006). Dwyer, Schurr and Oh (1987) described five general relationship phases in the business life cycle: awareness, exploration, expansion, commitment and dissolution (Dwyer et al. 1987). Awareness is a unilateral phase in which one party recognizes another party as a potential exchange partner (Dwyer et al., 1987). The second phase, exploration, begins with bilateral interaction and indicates the trail phase of a business relationship is underway (Dwyer et al., 1987). In this phase, there is considerable calculation of costs and benefits, a willingness to develop trust and some experience of satisfaction, and may be short or long in duration (Dwyer et al., 1987). Expansion occurs when the partners are increasingly willing to create additional interdependence and experience an increasing amount of benefits and dependence from their partnership as well as an increase in risk-taking (Dwyer et al., 1987). The next stage in the progression is commitment, which is identified by an implicit or explicit pledge of continuity between the parties, and may be explicit or implicit; typified by a level of satisfaction, loyalty, and a relative disinterest in other partner options (Dwyer et al., 1987). The final stage, dissolution, is the ending of the relationship (Dwyer et al., 1987).

The next conceptualization of the relationship life cycle is Ellram (1993). Ellram (1993) discusses the following stages of the relationship life cycle: development,

commitment, integration and dissolution. The first step is development, in which the parties of the relationship are becoming familiar with one another (Ellram, 1993). At this early stage, positive interactions are essential to continuation of the relationship (Ellram, 1993). This positive interaction in the development stage creates, either explicitly or implicitly, the ground rules for the ongoing relationship (Ellram, 1993). If the development stages proceed in a pleasing way, the parties will enter into the commitment stage (Ellram, 1993). The goal in this stage is to create dependence, strength, commitment and a generally improved relationship, and is characterized by expansion of the magnitude of the relationship (Ellram, 1993). The next stage of the relationship life cycle is integration (Ellram, 1993). This stage is primarily concerned with stabilizing and maintaining the relationship and exhibits high levels of benefits for both parties to the relationship (Ellram, 1993). Due to the level of commitment and shared strategy, less direct contact is required between parties at this stage (Ellram, 1993). Finally, the last stage of relationships is the dissolution stage where the primary goal is to withdraw from the relationship (Ellram, 1993). Ellram (1993) is in agreement with Dwyer et al. (1987) that not every relationship goes through every point in the relationship.

Ring and Van de Ven (1994) also developed a relationship life cycle typology including four stages: negotiation, commitment, execution and discharge. These stages are conceptually similar to Ellram's (1993) development, commitment, integration and dissolution; however, Ring and Van de Ven (1994) define the stages in terms of equality and efficiency of operations. In the first stage, negotiation, the partners develop expectations about investments, uncertainties and mutual or unilateral investments when the focus is strongly on behaviors and bargaining processes which lead to the

development of levels of trust and ideas about the equality and efficiency of the

relationship (Ring and Van de Ven, 1994). In the next phase, commitment, the partners

have agreed on rules for future interaction and future obligations which have likely been

codified into a contract or understood informally as a psychological contract (Ring and

Van de Ven, 1994).

The next stage, execution, involves the carrying out of the function of the

relationship, e.g. giving orders, buying material, paying monies owed, and administering

any processes required for executing the agreement (Ring and Van de Ven, 1994).

Personal interactions become again more important in this stage (Ring and Van de Ven,

1994). Over longer term relationships, conflicts, misunderstandings and noncompliance

with expectations create a situation in which one or both parties begin rethinking the

relationship (Ring and Van de Ven, 1994). If the parties decide that the relationship

should be ended, termination occurs (Ring and Van de Ven, 1994). This may occur when

the relationship comes to a natural end, with the parties having fulfilled their initial

purpose, or may occur as a result of failure or transgression (Ring and Van de Ven,

1994).

Eggert, Ulaga and Schultz (2006) continued the development of the life cycle

concept with three life cycle stages: growth, maturity and decline, but define the

characteristics of the stages by their direction and strength of growth. During the growth

phase, there is a very high intention to increase business with the partner (Eggert et al.,

2006). In the maturity phase, there is a low to no intention to expand business with the

partner; while in the declining phase, there is an intention to reduce business with the

partner (Eggert et al., 2006).

Jap and Ganesan (2000) identified four phases of the relationship life cycle based upon the conceptualization of Dwyer, Schurr and Oh (1987). The phases are exploration, buildup, maturity, and decline (Jap and Ganesan, 2000). The phases vary in terms of their direction of relationship growth (i.e. increasing or decreasing) and their relationship strength in line with the conceptual developments of Eggert, Ulaga and Schultz (2006). This dissertation will use the Jap and Ganesan (2000) conceptualization of the phases of the relationship life cycle, as detailed in the following sections.

2.2.1.1 Exploration phase of relationship life cycle

During the exploration phase, the parties do not yet know or trust one another yet and are primarily exploring the compatibilities of the relationship and evaluating the cost benefit ratio to determine willingness of continuing the relationship (Jap and Ganesan, 2000; Dwyer et al., 1987). During the exploration phase, both partners are in a search or trial phase (Jap and Ganesan, 2000; Brickman, 1987; Eidelson, 1980; Holmes, 1991). The primary goals of the exploration phase are to reduce uncertainty in the relationship, and assess the value of the ongoing relationship (Jap and Ganesan, 2000; Berger and Bradac, 1982; Berger and Calabrese, 1975; Kent, Davis and Shapiro, 1981).

2.2.1.2 Buildup phase of the relationship life cycle

The buildup phase represents a time at which the relationship has passed the initial evaluation and is now beginning to experience trust, satisfaction and both parties are becoming more willing to commit to the relationship and social processes become more important by communicating norms and value (Jap and Ganesan, 2000; Dwyer et

al., 1987; Frazier, 1983). This increase in social norms and values, therefore, signals the long-term intentions of both parties and may lead to risk-taking by each partner (Jap and Ganesan, 2000; Frazier, 1983).

2.2.1.3 Maturity phase of the relationship life cycle

The maturity phase of the relationship is typified by an acceptable level of benefits in, most often, a longer-term relationship (Jap and Ganesan, 2000; Dwyer et al., 1987) and there is often an unspoken pledge to continue the relationship for a longer term (Jap and Ganesan, 2000; Blau, 1964). The maturity phase is often identified by evaluating the high level of relationship investments, both tangible and intangible (Jap and Ganesan, 2000; Blau, 1964) and both supply chain partners most often feel they are getting acceptable amounts of benefits and satisfaction from the relationship (Jap and Ganesan, 2000).

However, this may be the stage in which complacency, fatigue and opportunity costs become problematic. During the maturity phase, commitment and trust may be taken for granted, and complacency may be setting in (Jap and Ganesan, 2000). Because of the dynamics and potential outcomes of the maturity stage, i.e. continuation or decline, this dissertation will focus on the mature stage of the relationship life cycle in examining the impact of the dark side effect of relationship variables. In broad strokes, the mature stage is usually a phase with relative satisfaction and commitment, at which investments have been made and volume is stable; however, this is also the stage at which relationships may move into decline or deterioration.

To reiterate, due to the pivotal nature of the mature life cycle, this dissertation will focus explicitly on relationships in the mature phase of the life cycle. This is the

point at which relationships have trust, commitment and some level of satisfaction, yet some relationships descend into discharge or decline while others experience rejuvenation. What causes these relationships to move into decline instead of rejuvenation? Dark side variables may be able to inform this quandary.

2.2.2 Moderator: Relationship Quality

The relationship life cycle will be used as a way to frame the response set of the study. However, there are other variables which have strong moderating effects on business relationship performance. In 2006, Palmatier, Dant, Grewal and Evans conducted a meta-analysis of factors influencing marketing relationship effectiveness. While Palmatier et al. (2006) suggest that business relationships have many dimensions and there is not any specific variable with consistent influence on relationship performance across multiple studies, the literature frequently cites relationship quality (RQ) as one of the more effective moderators of business relationships (DeWulf et al., 2001;Palmatier et al., 2006; Nyaga and Whipple, 2011). RQ refers to the condition in which partners can rely on performance levels and honesty of one another because the mutual expectations are essential to maintaining a productive relationship (Crosby, Evans and Cowles, 1990; Fang et al., 2011). Relationship quality is most frequently conceptualized as a higher order construct made of trust and commitment (Palmatier et al., 2006; Morgan and Hunt, 1994; Fang et al., 2011), and relationship satisfaction (Crosby et al., 1990).

Studies have used RQ as exogenous, endogenous, mediating and moderating variables in various studies. For example, Crosby et al. (1990) found RQ to be a significant exogenous variable in determining relationship continuity, while Kumar,

Scheer and Steenkamp (1995) tested RQ as an endogenous variable. Both Nyaga and Whipple (2011) and DeWulf et al. (2001) hypothesized and tested a mediation effect of RQ. Due to the evidence of significance of the strong effect of RQ on relationship performance, this study will include RQ as a moderator of the dark side variables effect on the dependent variables.

Conceptualizing RQ as a higher order construct composed of trust, commitment and relationship satisfaction provides insights into how this moderator may affect the relationship between the dark side variables and the dependent variables in this study. Zeithaml, Berry and Parasuraman (1996) concluded that trust reduces the potential of opportunistic behavior and a greater focus on long-term, mutual benefits by making the actual economic exchange more transparent and efficient (Doney and Cannon, 1997; Fang et al., 2011). The other conceptualized dimension of RQ, commitment has a similar affect. Commitment is the ongoing desire to continue a relationship considered valuable (Fang et al., 2011). High levels of commitment in a relationship reduces the desire to seek alternative partners, increases the amount of effort and investment expended on improving the relationship, and increased perceptions and expectations of future rewards (Lam et al., 2004; Fang et al., 2011). This variable will be tested as a second order construct composed of satisfaction, commitment, and trust.

This dissertation will focus on the dark side effect of relationship variables, framed by the mature stage in the relationship life cycle and moderated by RQ. The study of dark side variables is of particular importance to both academics and professionals. Academic contributions to boundary conditions of SET and clarification of when and if relationship variables damage relationships instead of improve them is of particular importance to professionals.

2.3 Dependent variables

Many dependent variables have been used when studying the potential impact of supply chain relationships including benefits (Dyer et al., 2008), satisfaction and financial performance (Anderson and Narus, 1990; Hibbard, Kumar and Stern, 2001; Hunt and Morgan, 1994; Massey and Dawes, 2007; Moorman et al., 1992), relationship function (Boles, Barksdale, and Johnson, 1997; Fang et al., 2011; Håkansson and Snehota, 1995; Kalwani and Narayandas, 1995; Min et al., 2007; Walter et al., 2003; Walter, Ritter, and Gemünden, 2001), relationship value (Helm et al., 2006), relationship effectiveness (Massey and Dawes, 2007; Van de Ven, 1976), relational rent or quasirent (Backhaus and Büschken, 1999; Lavie, 2006; Williamson, 1985).

This study, however, is interested primarily in how dark side variables affect relationship dissolution and the perceptions of financial performance of the relationship. The first dependent variable of interest is the termination or dissolution of the partnership (Giller and Matear, 2001; Harrison, 2004; Helm, Rolfes, and Günter, 2006; Kim, Oh, and Swaminathan, 2006) which is the counterpoint to relationship *continuity* (Anderson and Narus, 1990; Hibbard, Kumar, and Stern, 2001; Hunt and Morgan, 1994; Massey and Dawes, 2007; Moorman et al., 1992; Anderson and Weitz, 1992).

2.3.1 Dependent variable: Likelihood of relationship termination

Relationship dissolution or termination is the disconnection of the various links, bonds, and ties in a business relationship (Halinen and Tahtinen, 2002; Helm, Rolfes and Gunter, 2006). Relationship dissolution occurs for many reasons including reduced volume of trade or production or an evaluation of a cost-benefit consideration (Helm et

al., 2006) and has been ignored as a relational outcome in business relationships (Helm et al., 2006).

Das and Teng (2000) point out a lack of empirical evidence regarding relationship dissolution causes. However, literature has examined the instability of various types of alliances using several theoretical approaches (Das and Teng, 2000). These instabilities refer, in particular, to unplanned relationship termination (Das and Teng, 2000). Research has shown some progress towards the causes of relationship dissolution, but the results are inconsistent (Das and Teng, 2000). Giller and Matear (2001) also focused on relationship dissolution as a dependent variable. The authors point out that a considerable amount of relationship research focuses solely on the maintenance and improvement of existing business relationships, while neglecting negatively-perceived relationship dissolution (Giller and Matear, 2001).

Harrison (2004) conducted a case study to evaluate the dissolution process and its aftermath. The relationship under study had high relationship-specific investments, was long-term and exclusive (Harrison, 2004). The partners had no written contract in place, though at least one of the partners considered the relationship itself a psychological contract (Harrison, 2004). The paper qualitatively pointed out, in this one case, how the relationship deteriorated and dissolved (Harrison, 2004).

Anderson and Jap (2005) agree with previous studies that there is a lack of empirical studies determining and reinforcing the various causes of relationship dissolution. Kim, Oh and Swaminathan (2006) conclude that dissatisfaction with a business relationship may lead to relationship dissolution and the development of a new relationship, which they consider a strategic option for strengthening internal capabilities. Fang et al. (2011)

agrees that the research investigating the causes of relationship termination is incomplete, or have weak results.

2.3.2 Dependent variable: Perception of relationship financial performance

Because the primary goal of this dissertation is to identify negative results of dark side effect of relationship variables, an additional dependent variable will be used: perceptions of relationship financial performance (Duffy, 2008). Because businesses are frequently recommended to develop close partnerships as a way to improve performance (Christopher, 1998; O'Toole and Donaldson, 2000; Spekman and Carraway, 2006; Duffy, 2008), this measure offers insights into the value of the relationship (Duffy, 2008). The measurement items include perceptual measurements of the investments made in that customer, the financial returns from the relationship, and the costs of keeping this partner and satisfaction level of financial performance in this relationship (Duffy, 2008). Due to the difficulty in gaining access to accurate financial performance measurements, the perceptions of financial performance are sought (Duffy, 2008).

The combination of these two dependent variables are expected to show a more complex picture of relationships that end or are expected to end due to a relationship failure. Multicollinearity between these two dependent variables is unexpected as prior research has indicated that the likelihood to terminate a relationship does not directly impact performance (Morris and Carter, 2005).

2.4 Dark side variables

The dark side variables are those variables which are most often expected to, and in some cases purposefully composed to have a positive, stabilizing effect on a buyer-

supplier relationship, however, may cause the demise of the relationship (Anderson and Jap, 2005). Very close business relationships were revealed, through qualitative study, to, in some circumstances, be perceived as a burden as the relationship prevented the exploration of other, perhaps more beneficial business relationships (Hakansson and Snehota, 1998). While the current SET does not predict this negative relationship between relationship variables and performance, the Political Economy Framework takes a more holistic view of these supply chain relationships and includes in its analysis social, economic, and inter-relational variables.

These dark side variables are those that, though they have positive effects on the relationship performance, may at some point attain diminishing returns while still requiring increasing costs in time and investment (Villenna et al., 2011, Anderson and Jap, 2005). The dark side variables, in their entirety, are proposed to exhibit a non-linear relationship to performance, most often hypothesized as an inverted-u shaped relationship, or curvilinear relationship (Villenna et al., 2011). These dark side variables include relationship-specific investment (Jap and Ganesan, 2000; Backhaus and Buschken, 1999; Bensaou and Anderson, 1999), long-term relationship orientation (Moorman et al., 1992; Anderson and Weitz, 1992; Grayson and Ambler, 1999; Barnes, 2005, John 1984), learning and absorptive capacity (Dyer, Singh and Kale, 2008; Hamel, 1991), social capital (Locke, 1999; Inkpen and Tsang, 2005; Autry and Griffis, 2008; Adler and Kwon, 2002), and reciprocity (Gu et al., 2008; Lechner et al., 2010).

Both academic and professional literatures frequently recommend the implementation and development of these relationship variables to stabilize and improve buyer-supplier relationships, however, some evidence has shown that their effect is not always positive or realized at all (Villenna et al., 2011, Anderson and Jap,

2005). The dark side variables which are the focus of this dissertation are those specifically relevant to SET: relationship-specific investment, long term relationship orientation, learning and absorptive capacity, social capital and reciprocity. These variables are most relevant to SET because they are social behaviors, determined by human behavior patterns in which social norms and the norm of reciprocity create an expected equal return in behavior.

This dissertation seeks to clarify when relationship variables do or do not contribute to the perceptions of relationship financial performance or continuity of a supply chain relationship. This selection of dark side variables is the focus of this study because they are most appropriate for the theoretical foundation of SET.

2.4.1 Relationship-specific investment

Relationship-specific assets are those investments which are mutual, though not necessarily balanced, and cannot be used with another business partner (Bensaou and Anderson, 1999). These assets are the reason a continuous relationship makes economic, financial, and operational sense and creates an atmosphere of mutual commitment (Backhaus and Büschken, 1999; Riordan and Williamson, 1985). In relationships with these types of investments, each partner's investment is at risk of loss if the relationship is ended before the return is realized (Backhaus and Büschken, 1999). Even in situations of dissatisfaction with the relationship, a relationship-specific asset may hold a firm in a relationship (Backhaus and Büschken, 1999).

Relationship specific assets may be simultaneously considered a path to improved performance and an exit barrier for the buyer-supplier relationship (Bensaou and Anderson, 1999; Ghemawat, 1991; Poppo et al., 2008). Due to this exit barrier,

these investments create both a safeguard and a vulnerability leading to dependence and making it difficult to back away from the relationship without excessive financial loss (Bensaou and Anderson, 1999). In effect, this traps the firm into the relationship (Giller and Matear, 2001)—and has even been referred to as a "hostage" (Heide and John, 1990; Jap and Ganesan, 2000; Macneil, 1980) or a "hold-up" (Harrison, 2004). Because these assets make it more difficult to leave the relationship, it increases vulnerability to opportunism (Backhaus and Büschken, 1999; Bensaou and Anderson, 1999).

Also, when the relationship-specific investments are asymmetrical, one partner may experience increased bargaining power, thereby gaining benefits in excess of what the partner firm receives (Dyer et al., 2008; Lavie, 2006; Jap and Ganesan, 2000). Mutual and balanced relationship-specific investments (Bensaou and Anderson, 1999), conceptually, reduce the probability of opportunism (Backhaus and Büschken, 1999).

Empirical results support that imbalanced relationship-specific assets create the potential for opportunism by the party with the smaller investment (Jap and Ganesan, 2000). It is ironic that a specific asset is created to protect the relationship, when, theoretically speaking, that same asset can actually endanger the very same relationship by increasing the potential gains of opportunistic behaviors and actions (Bensaou and Anderson, 1999).

In Jap and Ganesan's (2000) empirical study, methods of controlling the 'hold-up' potential of these relationship-specific investments are investigated. These control mechanisms include relational norms, explicit contracting and the level of relationship-specific investment on the part of the other party. Interestingly, this study incorporated the position in the relationship life cycle and empirically found that relatively balanced relationship-specific investments increase the perception of commitment of the other

partner, but only in the exploration phase of the relationship life cycle (Jap and Ganesan, 2000).

Other studies have discussed relational norms and trust as factors to protect these relationship-specific investments and assets (Achrol and Gundlach, 1999; Das and Teng, 2000; Harrison, 2004; Heide and John, 1990, 1992) suggesting that in the presence of relational norms and trust, the role of relationship-specific investments and assets in protecting and enriching the relationship will be more effective. That is, if relational norms are present, relationship-specific investments and assets will increase relationship financial performance, and reduce the likelihood of relationship dissolution. There is a suggestion that, particularly in asymmetric investments, there may be an increase in opportunistic behavior, vulnerability, and risk resulting from relationship-specific investments.

The mature position in the relationship life cycle would indicate that relationship-specific investments, if used, have led to a feeling of satisfaction and commitment, inherent in the position. According to Achrol and Gundlach (1999), it takes a combination of both relational norms and formal contracting to maintain a productive business relationship. For this reason, RQ is expected to positively affect relationship performance, and reduce the likelihood of relationship dissolution.

Based upon this literature review, it is established that there are contradictory conceptualizations and empirical results regarding the contribution of relationship-specific investments and assets to the performance of supply chain relationships (Bensaou and Anderson, 1999; Ghemawat, 1991; Poppo et al., 2008; Heide and John, 1990; Jap and Ganesan, 2000; Harrison, 2004; Jap and Ganesan, 2000). This study will empirically investigate the effect of relationship-specific investments on relationship

financial performance and likelihood of termination, when moderated by relationship

quality. Therefore, the following hypotheses are proposed:

H1a: The relationship between relationship-specific investment and relationship
financial performance is stronger for mature supply chain relationships with a high level
of relationship quality than for mature supply chain relationships for a low level of
relationship quality.

H1b: The relationship between relationship-specific investment and likelihood of
termination is stronger for mature supply chain relationships with a low level of
relationship quality than for mature supply chain relationships for a high level of
relationship quality.

2.4.2 Long term relationship/long term relationship orientation

Long term relationships and long term relationship orientation involve the long

term, continuous business relationship between two partners, as opposed to an arm's

length, market- or transaction-based (i.e. short-term) relationship. Research has

suggested that longer term relationships reduce costs and increase profits to both

parties over time (Ganesan, 1994; Skarmeas, 2006), increase trust and commitment

(Morgan and Hunt, 1994; Bitner, 1995; Poppo et al., 2008), reduce risk (Bitner, 1995),

and improve profit (Keiningham et al., 2009).

Empirical results by Barnes (2005) supported the concept of relationships

becoming stronger and more involved over longer periods of time as longer term

relationships are typically well-structured, and well-regarded by both partners (Barnes,

2005). Per Keiningham, Aksory, Buoye and Williams (2009), long term relationships

equate to loyalty, and long term relationships are the most profitable from the business-

to-consumer perspective. The expected returns of these long-term relationships are

high (Barnes, 2005; Christopher et al., 1991; Reinartz and Kumar, 2003; Verhoef,

2003). However, the length of the relationship itself is not necessarily an asset: an old

but unproductive relationship may not be as valuable or provide as much return as a shorter, more productive relationship (Bensaou and Anderson, 1999).

Many industry relationships are not committed through legal means such as long term contracts (Heide and John, 1990; Walker and Poppo, 1991; Poppo et al., 2008; Uzzi, 1997); relationships in these industries often continue working together on a continuing basis even during the period of contract development and agreement (Poppo et al., 2008). The partners' expectations of continuity, therefore, are perceptual in nature (Poppo et al., 2008).

Research concludes that as the length of the relationship increases, so does trust (Barnes, 2005; Hunt and Morgan, 1994; Moorman et al., 1992; Shemwell, Cronin, and Bullard, 1994; Wetzels, De Ruyter, and Van Birgelen, 1998) and commitment (Barnes, 2005; Gundlach et al., 1995). Though Gundlach, Achrol and Mentzer (1995) studied long-term commitment intentions, their results indicate that there was a direct, positive relationship between relational social norms and long-term commitment. Barnes (2005) concluded that business relationships become more intense over time, not less. Contrary to those results, longer term relationships also increase the potential for opportunism since the dissolution of the relationship can be difficult and expensive (Anderson and Weitz, 1992; John, 1984; Williamson, 1975).

Unfortunately, it has also been seen that longer relationships do not always show the expected profit (Dowling and Uncles, 1997; Helm et al., 2006; Reinartz and Kumar, 2003; Moorman, Zaltman, and Deshpande , 1992) and that some long-term relationships are terminated in spite of outward contentment (Bitner, 1995). As the relationships continue to develop over long periods of time, negative influences become more common (Barnes, 2005; Grayson and Ambler, 1999; Moorman et al., 1992) which

reduce the long term relational impact on trust and commitment (Grayson and Ambler, 1999; Moorman et al., 1992). Some authors, however, report that long-term relationships may end even when satisfaction is achieved (Bitner, 1995). According to Dowling and Uncles (1997), as the duration of relationships increase, the customer's expectations increase. This agrees with the early SET descriptions of the comparison level and the concept that as a certain level of service continues, the level of comparison meets that level of service and becomes the expected standard (Homans, 1958). In that situation, the customer may come to expect more impressive service that will appear to be above that frame of reference. This may, in part, explain the diminishing returns, or dark side effect possible in long-term relationships. Barnes (2005) corroborates this concept in describing complacency which may become normal in long-term relationships.

Moorman, Zaltman and Deshpande (1992) found empirically that some long-term buyer-supplier relationships experience a dampening effect of commitment and trust. They propose some possible causes for this dynamic including loss of objectivity, a sense of staleness in the relationship, or the perception of reduced value-added from the other party (Moorman et al., 1992). The authors also suggest that it is possible that expectations increase over time, increasing the possibility of feelings of dissatisfaction with the relationship or that the possibility of opportunistic behavior increases concurrently with the age of the relationship (Moorman et al., 1992). Partner firms also reported experiencing complacency or comfort with longer-term relationships (Barnes, 2005). Some researchers refer to this complacency as relational inertia (Villena et al., 2011) which indicates that partners are unlikely to seek other partners or replace their current partner even if expected benefits are not forthcoming (Anderson and Jap,

2005; Fang et al., 2011). Relational inertia limits innovation (Anderson and Jap, 2005), knowledge creation (McFadyen and Cannella, 2004) and product or market development (Fang et al., 2011; Levinthal and March, 1993).

Fang et al. (2011) empirically confirm that there are some undermining forces at play in long-term relationships. The authors identify "structural inertia" as a factor which may devolve into rigidity which decreases organizational performance and may lead to the dissolution of relationships (Fang et al., 2011). This is due primarily to the lack of innovation and business intelligence gathered by firms involved in strong, close relationships (Fang et al., 2011).

The theoretical concepts in SET, namely the comparison level, fatigue-satiation concept and point of diminishing returns concur with these suppositions by Moorman et al. (1992) and Fang et al. (2011). Longer-term relationships, to achieve economic benefit, increase the need for relationship-specific investment, since without these investments a relationship is less profitable than arm's length relationships (Backhaus and Büschken, 1999; Williamson, 1985). Kalwani and Narayandas (1995) empirically studied the effect of long-term relationships on performance, including sales growth; the results showed that growth was not higher for firms in closer relationships than those with transactional relationships (Kalwani and Narayandas, 1995; Backhaus and Buschken, 1999).

Suppliers with closer relationships achieved cost reductions primarily due to improved inventory utilization and reduction in administrative expenses, however, these reductions were negotiated away over time by their customers (Kalwani and Narayandas, 1995). This research also corroborates the earlier theoretical propositions of comparison level: as relationship spans increase, the existing service level becomes

the new normal, the new comparison level, with which partners become dissatisfied (Homans, 1958).

Thus, empirical evidence has supported that long-term relationships are not always profitable, despite the fact that conventional wisdom recommends that companies aim for customer retention for the purpose of reducing costs and improving profits (Anderson and Jap, 2005; Skjott-Larsen, Kotzab and Grieger, 2003). The contradiction in empirical evidence suggests that while long term relationship orientation does, in some circumstances, affect supply chain relationships positively, it does not consistently have this result. Because RQ is composed of a minimum, trust and commitment, the moderator is expected to improve the potential longevity and performance of the relationship.

To summarize, literature reports that long-term relationships and long–term relationship orientation has a positive effect in supply chain relationships (Ganesan, 1994; Skarmeas, 2006; Morgan and Hunt, 1994; Bitner, 1995; Poppo et al., 2008; Keiningham et al., 2009), but also as contributing to complacency, reducing market awareness, and reducing evaluation of better alternatives (Barnes, 2005; Grayson and Ambler, 1999; Moorman et al., 1992; Dowling and Uncles, 1997; Villena et al., 2011; McFadyen and Cannella, 2004; Fang et al., 2011; Levinthal and March, 1993). The current conceptualization of SET would suggest that the trust and commitment inherent in RQ will, as social exchange mechanisms, improve the outcomes of the relationship. Therefore, based upon this literature review, the following hypotheses are proposed:

H2a: The relationship between long-term relationship orientation and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.

H2b: The relationship between long-term relationship orientation and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.

2.4.3 Learning and absorptive capacity

Partnerships have a considerable role in distributing skills and knowledge (Hamel, 1991). Absorptive capacity, specifically, is the learning ability of a firm in which the firm can exploit the knowledge base of its alliance partners by identifying, evaluating, and assimilating their knowledge (Cohen and Levinthal, 1990). Often, firms enter alliances with a perception of value arising from acquiring new knowledge and learning in addition to the other resources which generate relational benefits or performance (Cohen and Levinthal, 1990; Kogut, 1988; 1991; Mowery et al., 1996; Poppo et al., 2008; Dyer et al., 2008; Hamel, 1991; Lavie, 2006; Teece and Pisano, 1994; Li, Liu, Li, and Wu, 2008).

One complication in evaluating the level of absorptive capacity is that it is intangible and benefits are difficult to specify, so it is difficult to determine the most appropriate level of investment (Cohen and Levinthal, 1990). According to Hamel (1991), many business relationships are generated for gaining knowledge. These relationships most often occur when knowledge asymmetries are involved and the process of collaboration creates a conduit though which knowledge is shared. Hamel (1991) conducted a series of case studies which shows how asymmetries in absorptive capacity alters the bargaining power of the partners and that partners may have mercenary intentions in developing relationships. In an earlier study on interfirm knowledge transfer, Mowery, Oxley and Silverman (1996) evaluated how learning-related alliances altered each partner's capabilities. This study confirms that, in this

context, knowledge is acquired through close relationships and some relationships provide only access to knowledge instead of absorption of knowledge (Mowery et al., 1996). The authors also emphasize the need for additional empirical study in knowledge transfers (Mowery et al., 1996).

Lavie (2006) agreed that firms often enter relationships to gather new knowledge and gain access to additional resources. Some studies have shown that absorptive capacity is partially responsible for firm performance through actual learning from partners, which suggests the higher the absorptive capacity, the higher the proportion of performance appropriated to the firm (Lavie, 2006). Poppo et al., (2009) indicated that deeper learning strengthens business relationships and makes it more difficult for partners to disengage or dissolve the relationship.

Learning alliances are often focused on interdependence, problem solving, and gaining of tacit knowledge from each partner (Inkpen, 2000; Li, Liu, Li and Wu, 2008; Grant and Baden-full, 2004). Simultaneously, each firm in a learning-type alliance must balance the relationship between the flow of tacit knowledge in both directions, and trying to protect any knowledge they don't wish to share (Kale, Dyer and Singh, 2001; Li et al., 2008; Khanna et al., 1998; Bresser, 1988; Hamel, 1991; Inkpen and Beamish, 1997). Bresser (1988) points out differences between collective and competitive strategies in learning expectations. The author cautions against the potentially damaging, unintentional disclosure of information which may result from close relationships (Bresser, 1988). This concept of unintentional disclosure emphasizes the potential dark side effects of learning and absorptive capacity. Inkpen and Beamish (1997) declared that there is a dramatic need for more investigation of why joint ventures end prematurely even in cases of high absorptive capacity. The authors point

out that the acquisition of knowledge creates an imbalance of power which may, in the longer run, make the relationship obsolete (Inkpen and Beamish, 1997). Khanna, Gulati and Nohria (1998) describe different perspectives in the quest and investment for learning: private benefits (those that accrue to the focal firm) and common benefits (mutual benefits accruing to both firms). The authors state, conceptually, that the benefits to learning may be asymmetric even when the primary factors of the relationship (power, etc.) are relatively symmetric (Khanna et al., 1998).

Kale, Singh and Perlmutter (2000) empirically test know-how leakage between firms in relationships. The authors point out that knowledge transfer is one of the main reasons that firms ally with one another (Kale et al., 2000). The authors tie in the concept of social capital, stating that when relational capital is combined with interaction and trust, the basis for know-how and knowledge transfer is highly probable and can prevent unintentional leakage of knowledge between the partners (Kale et al., 2000). If firms behave opportunistically in their desire to win the learning race though, this may lead to the failure of gaining or maintaining competitive advantage, reduced performance for the relationship, as well as reduced potential for innovation (Li et al., 2008).

Thus, despite the seeming benevolence and benefit of learning from alliance partners, there is a dark side to learning in the relationship, too. A very strong learning goal may in reality be an effort to poach as much knowledge, learning and technology as possible and then quit the relationship to avoid the dependence which comes along with it (Hamel, 1991). Empirical study has shown that if an alliance partner could not learn from its partner as quickly as its partner could learn from them, the first party would

become dependent and inevitably redundant to the partner and the relationship; while the faster-learning partner would become more powerful (Hamel, 1991).

Hamel (1991) points out in a grounded theory article that there may be vast differences in the absorptive capacity between partners and that the goal of partners developing close relationships may differ in terms of learning goals (Hamel, 1991). An interesting concept emerged in this study: the partnership as a race to internalize as much knowledge and information from the partner as possible (Hamel, 1991). The author also describes the close relationship between absorptive capacity and bargaining power; more specifically, the higher the level of comparative absorptive capacity, the higher the relative level of bargaining power (Hamel, 1991). In relationships where learning is the intent and specific goal of one of the parties, the relationship may dissolve once the level of learning is deemed sufficient (Dyer et al., 2008; Hamel, 1991).

The negative effects of learning become evident when companies attempt to prevent learning on the part of their partner. For example, managers are continually concerned about unintentional knowledge transfer, partner encroachment, and information poaching (Hamel, 1991). Some firms invest in information gatekeepers: employees who monitor and restrict the flow of knowledge between partners (Hamel, 1991). Though not stated explicitly in the literature, this information gatekeeping indicates a lack of trust, while the concept of firms gaining as much knowledge as they can and then quitting the relationship indicates a reduction in commitment. In the mature stage of the relationship life cycle, learning paths would be expected to be relatively established and stable. In cases of high RQ, which includes trust and commitment, Hamel's (1991) race to learn, competitive learning environment is unlikely to exist

In summary, though learning and absorptive capacity has been seen as a valuable goal for close supply chain relationships (Cohen and Levinthal, 1990; Kogut, 1988; 1991; Mowery et al., 1996; Poppo et al., 2008; Dyer et al., 2008; Hamel, 1991; Lavie, 2006; Teece and Pisano, 1994; Li et al., 2008), there are instances in which learning is opportunistic or so goal-driven as to impede the valuable development and performance of relationships (Hamel, 1991; Dyer et al., 2008). SET would suggest that learning would improve relationship financial performance and reduce the likelihood of termination (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958), particularly when combined with high levels of RQ (DeWulf et al., 2001; Palmatier et al., 2006; Nyaga and Whipple, 2011). Based upon this literature review, the following hypotheses are proposed:

H3a: The relationship between learning/ absorptive capacity and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.

H3b: The relationship between learning/ absorptive capacity and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.

2.4.4 Social capital

Social capital is defined as the interpersonal relationships between individuals (Bourdieu, 1986; Coleman, 1988; Lin, 2001; Nahapiet and Ghoshal, 1998; Burt, 1992; McFadyen and Cannella, 2004) and is unique from relationship specific investments in that relationship specific investments are investments in primarily tangible assets that are unique to a specific relationship (Bensaou and Anderson, 1999). Social capital refers to intangible social dimensions of relationships (Bourdieu, 1986; Coleman, 1990; Lin, 2001; Nahapiet and Ghoshal, 1998; Burt, 1992; McFadyen and Cannella, 2004). There

are three dimensions of social capital: structural, cognitive and relational (Nahapiet and Ghoshal, 1998). This dissertation focuses on the relational dimension of social capital, due to its appropriateness to the theoretical foundation (SET). Relational social capital includes such perceptual variables as reciprocity, respect and friendship which are developed over a longer term relationship (Villena et al., 2011).

Though theory (SET) and evidence suggests that social capital creates value for partners, researchers from both sociology and business strategy have cautioned against the dark side of social capital (Adler and Kwon, 2002; Granovetter, 1985; Inkpen and Tsang, 2005; Portes and Sensenbrenner, 1993). Conceptual work has explicitly stated that firms that base their competitive advantage goals primarily on social capital will likely encounter extreme disadvantage (Lock et al., 1999). These personal networks are capable of creating very strong group identification and group norms, which limits the members' openness to other groups, information, or views (Nahapiet and Ghoshal, 1998; McFadyen and Cannella, 2004). The results of the dark side of social capital include loss of flexibility in making business decisions (Gargiulo and Benassi, 1999) and ignoring new options in partners (Kern, 1998), thereby reducing the performance of both the firm and the partnering relationship (Villena et al., 2011).

Villena Revilla and Choi (2011) have empirically confirmed the paradox surrounding social capital. Though social capital is often attributed with increasing trust, commitment and performance; it may also lead to opportunistic behavior, non-optimal decision making or loss of objectivity (Granovetter, 1985; Grover, Lim, and Ayyagari, 2006; Locke et al., 1999; McFadyen and Cannella, 2004; Villena et al., 2011). In some circumstances, relational social capital even reduces performance (Villena et al., 2011).

Despite various benefits which are attributed to social capital, these benefits earn diminishing returns, according to empirical research, and have been shown to both improve and diminish performance measures (Villena et al., 2011). At a certain point, social capital becomes a disadvantage and may lead to foolish investments, poor decision making, and opportunism (Villena et al., 2011). Giller and Matear (2001) have reported that social capital allowed the relationship to deteriorate imperceptibly slowly, to the point of no repair. Finally, several studies evaluating the positive effect on performance from social capital have not found a significant result (Gulati and Sytch, 2007; Peterson et al., 2005; Swink et al., 2007; Villena et al., 2011).

The mature position in the relationship life cycle would support the positive effect of social capital on the relationship performance, increasing the relationship performance, while reducing the probability of termination. Adding RQ as a moderator would accentuate the positive results, while reducing the probability of termination. A curvilinear effect of social capital has been supported due to the point of diminishing returns it is proposed to experience (Villena et al., 2011). Because this curvilinear relationship has been found (Villena et al., 2011), the dark side of social capital has been supported (McFadyen and Cannella, 2004). Based upon this literature review, the following hypotheses are proposed:

H4a: The relationship between social capital and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.

H4b: The relationship between social capital and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.

2.4.6 Reciprocity

Reciprocity is one of the central tenets of SET. Reciprocity describes the perception of increased benefit based on cooperation and the expectation of the same behavior from the partner, e.g. if I act in a cooperative way, you will, also (Poppo et al., 2008; Gouldner, 1960). When one partner understands it is in their best interest to act cooperatively, they often assume the other party is aware of this often unspoken agreement (Hill, 1990; Parkhe, 1993; Poppo et al., 2008). Reciprocity has long been proposed to create substantial performance benefits in supply chain relationships, and has been supported through theory (Social Exchange Theory) as well as empirical studies. Reciprocity, as a concept, refers to the social obligations arising from behaviors between individuals (Gouldner, 1960).

There are also negative results though from reciprocity. The dark side of reciprocity becomes apparent when considering its consumption of resources without a guarantee of return on investment (Hansen, 1999; Lechner et al., 2010). When reciprocity is strong, a feeling of obligation may become strong enough to diminish the importance of the original goals or effective actions (Gimeno and Woo, 1996; Uzzi, 1997; Lechner et al., 2010). Reciprocity has caught on in the Western world and has long been embedded in the Chinese culture as *guanxi* (Gu, Hung, and Tse, 2008). Guanxi was originally intended as a way for companies to help one another succeed and build trust (Gu et al., 2008), however, guanxi has been shown to also have a dark side with unintended consequences including ignorance of true market conditions (Gu et al., 2008), failure of network relationships (Uzzi, 1997), and even excessive debt accumulation (Vanhonacker, 2004). This blindness to the market can affect a firm's performance and survival (Moorman and Slotegraaf, 1999; Gu et al., 2008). The dark side of guanxi has been empirically supported particularly in industries with high

competition and rates of technological change (Moorman and Slotegraaf, 1999; Gu et al., 2008). Due to the levels of trust and commitment, reciprocity would be an expected factor during the mature phase of the relationship life cycle. The diminishing returns of reciprocity as described in the initial theoretical literature (Homans, 1958) support the potential dark side effect.

Numerous studies have touted the performance benefits of reciprocity, often supported by SET (Gu et al., 2008; Thomas, Esper and Stank, 2010). However, other studies have contradicted those findings supporting the dark side of reciprocity (Vanhonacker, 2004; Uzzi, 1997; Gu et al., 2008; Hansen, 1999; Lechner et al., 2010). SET, in its current conceptualization, would predict that reciprocity would have a positive effect on relationship performance and a negative effect on likelihood of termination (Homans, 1958). However, revisiting the original conceptualizations of the theory would suggest there is a point of diminishing returns for reciprocity on the dependent variables. Therefore, the following hypotheses are proposed:

H5a: The relationship between reciprocity and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.

H5b: The relationship between reciprocity and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.

2.6 Conclusion

In conclusion, this study will test the boundary conditions of the current conceptualization of SET, through an overarching lens of Political Economy Framework literature. See Figure 2 for the full measurement model. Based on the literature review, this analysis will evaluate the following exogenous variables: relationship specific investment, long term relationships and long term relationship orientation, learning

and absorptive capacity, social capital, and reciprocity. The response set will be framed using the mature phase in the relationship life cycle. The moderator of interest in this study is relationship quality.

Figure 2: Measurement model
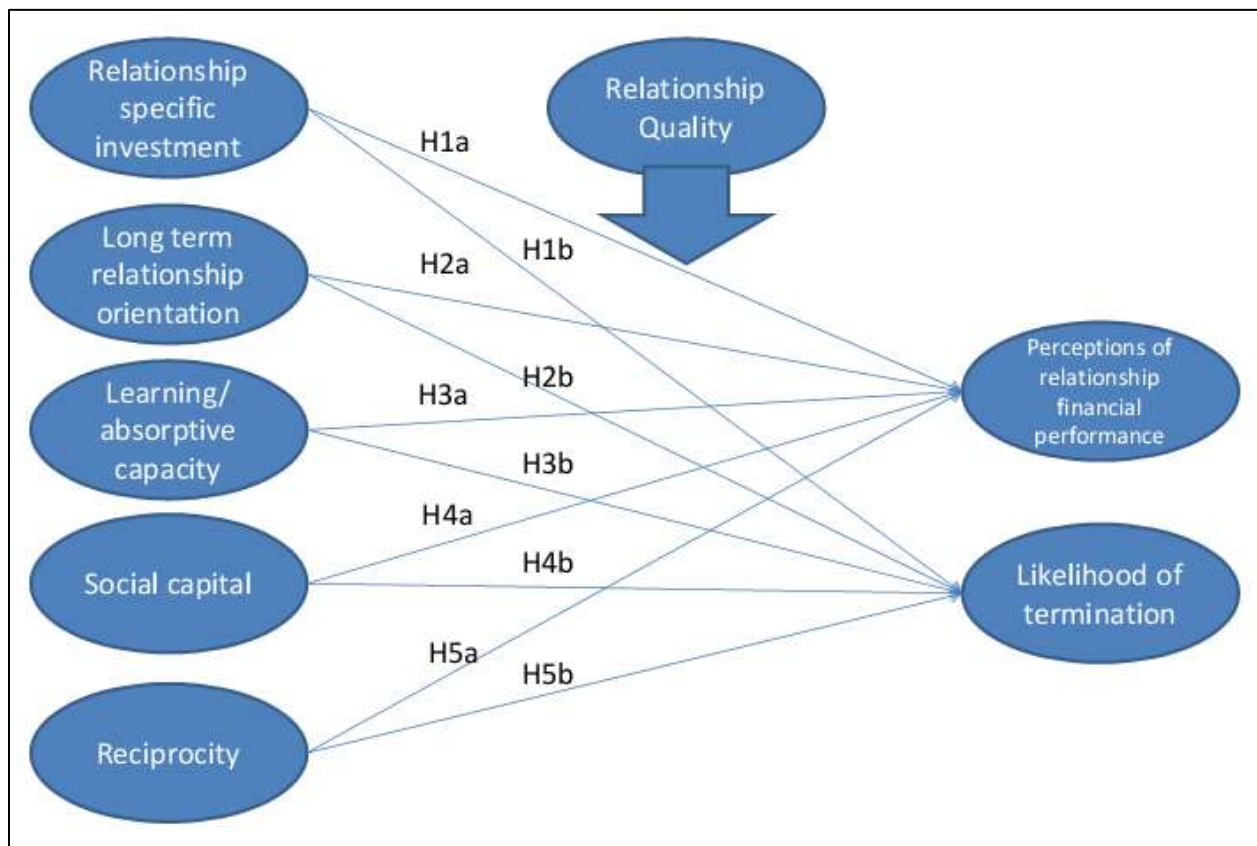
3.0 Methodology

This chapter will discuss the methodology which will be used to analyze the data collected for this study. This study will first discuss the target respondents and sample

details, and then will provide a description of the survey setup. Next, a description of all the measurement scales will be described including both independent and dependent variables. Then there is a description of pre-test procedures, distribution and analysis method.

The methodology to test the hypotheses for this study is a quantitative survey. The most common purpose of survey research is to generalize from a sample to a population (Creswell, 2009; Babbie, 1990). For this study, a survey is an appropriate methodology due to the intent of testing theoretical boundary conditions, the low cost of administration, and the quick data collection (Creswell, 2009; Babbie, 1990; Fowler, 2002). Surveys, like every methodology, have both strengths and weaknesses (Creswell, 2009). The strengths of surveys include its simple, easy and cost-effective distribution, while its weaknesses are typically considered to be its lack of precision and depth (Creswell, 2009). The survey will be cross-sectional, self-administered questionnaires (Creswell, 2009; Fink, 2002), and administered online via Qualtrics (Creswell, 2009; Nesbary, 2000; Sue and Ritter, 2007).

The survey distribution will be electronic and will include a blog post invitation on "The Logistics of Logistics" blog, owned by Mr. Joe Lynch, with the offer of a professional report published for the blog readers in return for their participation. The survey will include demographic and perceptual items with scales adapted from existing management, marketing and supply chain research as described later in this chapter.

3.1.0 Target respondents

The target population includes mid- and upper-level management involved in supply chain relationships. Though the ideal sample would be one drawn at random

from the population, this study will utilize a convenience sample drawn from a professional logistics and supply chain management blog. It is difficult to locate samples which are not over-surveyed, and the author has had excellent results focusing on professional blog readership by offering, in return for participation, an original, a summary practitioner report published exclusively on the blog once the survey is complete. Though the nonprobability sample, or convenience sample, reduces the generalizability of the results (Creswell, 2009; Babbie, 1990), the purpose of using the nonprobability is to increase the response rate. In the interest of achieving excellent response rates, this study will utilize this nonprobability sample.

Because this study includes investigating human subjects, IRB approval will be sought. The researcher's CITI training and credentials are up-to-date.

3.1.1 Survey setup

The survey respondents will be instructed to consider a business relationship they are involved in which is in the mature phase of the life cycle; the definition will be provided. The respondents will then be asked an open-ended question asking them to briefly describe the relationship, as a check on understanding the type of relationship that is being studied. Then, the survey items will be asked.

The following table shows the text that will be included in the instructions for the survey based on the description of the mature position of the relationship life cycle by Jap and Anderson (2007):

Table 4: Survey instructions text

Thank you so much for clicking on the link for the business relationship survey! This survey is specifically studying mature business relationships. Mature business relationships are typically mutually-dependent relationships that often have relationship-specific investments and a willingness to take risks for mutual benefit. This mature relationship is often an older relationship with a history of satisfactory interaction. While answering all the following questions, please think of an existing business relationship that is a mature relationship and has many of the above criteria.

The full survey instrument can be seen in Appendix A and information about the measurement scale items are in Table 5.

3.2 Measurement scales

The measurement scales are all adapted from established, tested scale items as described in Table 5 for each variable and will all be tested on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

3.2.1 Dependent variables—Relationship continuity/ termination

This study will adapt Johnson's (1999) four scale items for relationship continuity, which have an alpha of 0.74. The four survey items within the relationship continuity/ termination include items such as "We expect the relationship with this partner to last a long time," and "Our firm has been successful in getting this partner to commit to long term cooperation" (Johnson, 1999). The scale was adapted by

substituting the word 'partner' for the word 'supplier' because the survey respondents may be a buyer or supplier for their partner of focus.

3.2.2 Dependent variable—Perceptions of relationship financial performance

This study will adapt Duffy's (2008) nine scale items for perceptions of relationship financial performance, with an alpha of 0.84. Perceptions of relationship financial performance includes nine perceptual survey items such as "We see a lot of future growth potential with this partner," and "Investments of time and money in this partner have been worthwhile," which is reverse-coded (Duffy, 2008). The scale was adapted by substituting the word 'partner' for the word 'customer' because the survey respondents may be a customer or supplier for their partner of focus.

3.2.3 Independent variable--- Social capital (relational)

This study will adapt Villena et al's (2011) five scale items for relational social capital, which have an alpha of 0.81. Social capital will be measured using five scale items such as "Please indicate to which the relationship between your company and this partner is characterized by … a close personal interaction between the partners," and "…mutual trust between the partners" (Villena et al., 2011). The scale was adapted by substituting the word 'partner' for the word 'supplier' because the survey respondents may be a buyer or supplier for their partner of focus.

3.2.4 Independent variable—Long term orientation

This study will adapt Ganesan's (1994) seven scale items for long term orientation, with a Cronbach's alpha of 0.94 (Ganesan, 1994). An example of the long-term orientation items include "We believe that over the long run our relationship with

this partner will be profitable," and "We expect this partner to be working with us for a long time" (Ganesan, 1994). The scale was adapted by substituting the word 'partner' for the word 'resource' to clarify the position of the survey respondents.

3.2.5 Independent variable—Relationship-specific investment

Relationship-specific investment items will be adapted from Nyaga and Whipple's (2011) three items, with an alpha of 0.76. The items include "We have invested substantially in personnel dedicated to this relationship," and "We have dedicated significant investments to this relationship" (Nyaga and Whipple, 2011).

3.2.6 Independent variable—Learning and absorptive capacity

This study will adapt Schoenherr et al's (2014) six scale items for learning and absorptive capacity, with an alpha of 0.71. Learning and absorptive capacity will include items such as "Working with my supply chain partner, we have developed processes for … acquiring knowledge about new products and services within our industry" and "…generating new knowledge from existing knowledge" (Schoenherr, Griffith and Chandra, 2014). The scale was adapted by substituting the word 'partner' for the word 'supplier' because the survey respondents may be a buyer or supplier for their partner of focus.

3.2.7 Independent variable—Reciprocity

This study will adapt Chan and Li's (2010) four scale items for reciprocity, with an alpha of 0.86. These items include "When my partner needs my help, I am willing to assist them, even if it may cost me time and effort," and "When I ask my partner for help, I think my partner will help me" (Chan and Li, 2010). The scale was adapted by

substituting the word 'partner' for the word 'supplier' because the survey respondents may be a buyer or supplier for their partner of focus.

3.2.8 Moderator—Relationship quality

Relationship quality is a second order latent construct composed of trust, commitment and relationship satisfaction, and it is tested as a second order latent construct. This study will use Kumar et al's (1995), Anderson and Weitz's (1992) and Crosby et al's (1990) scale items for trust, commitment, and relationship satisfaction, respectively. The five measurement items for trust are adapted from Kumar et al's (1995), which has an alpha of 0.91. Examples of the trust scale includes "When making important decisions, the partner is concerned about our welfare" and "We are convinced that this partner performs its tasks professionally" (Fang, Chang and Peng, 2011). The scale was adapted by substituting the word 'partner' for the phrase 'buyer/supplier' to encourage the survey respondents to remain consistent with their responses.

The commitment scale items are adapted from Anderson and Weitz (1992) five items with an alpha of 0.85. Examples of the commitment scale include items such as "We are patient with this supplier/ customer when they make mistakes that cause us trouble" and "We are not continually on the lookout for another product to add to or replace this partner for this product type/ for another customer to replace or to add in this partner's territory" (Anderson and Weitz, 1992). The scale was adapted by substituting the word 'partner' for the word 'supplier' because the survey respondents may be a buyer or supplier for their partner of focus.

This study will adapt Nyaga and Whipple's (2011) four relationship satisfaction items, which have a Cronbach's Alpha of 0.90. The items include items such as "My firm

is satisfied with this partner in terms of coordination of activities," and "My firm is satisfied with this partner in terms of management of activities" (Nyaga and Whipple, 2011). The scale was adapted by substituting the word 'partner' for the word 'relationship" because the survey respondents may be a buyer or supplier for their partner of focus.

3.3 Pretest

A pretest with ten logistics and supply chain managers will be conducted to assure the readability, face validity, understandability and ease of completion of the survey. This pretest will be conducted with academic subject matter experts in supply chain relationships and experienced managers who have experience in dealing with supply chain relationships. This pretest is important to improve the format of the survey and the wording of the scale items (Creswell, 2009). The pretest may result in additional adaptation of the survey items.

Table 5: Measurement items

Construct	Citation	Alpha	Item	Tested in hypothesis:
Relationship termination, 7-point Likert scale	Johnson (1999) JAMS	0.74	We expect the relationship with this partner to last a long time. (R)	All
			It is likely that our relationship with this partner will be terminated within the next 2 years.	
			Our firm has been successful in getting this partner to commit to long term cooperation. (R)	
			This partner is hesitant to come to any long term agreements.	
Perceptions of relationship financial performance, scale not reported	Duffy (2008) IMM	0.84	We see a lot of future growth potential with this partner.	All
			The amount of business we have with this partner is growing.	
			The future viability of this relationship does not look good. [R]	
			Investments of time and money in this partner have been worthwhile.	
			Investments we have made in this relationship have made our business operations more cost effective and efficient.	
			Returns we have made from this relationship have enabled us to reinvest and expand our business with this customer.	
			The cost of servicing this partner is low given the amount of business it generates.	
			We have been required to make investments in this relationship that have	

			cost us a lot of money but offer little benefit to our own operations. [R]	
			We are satisfied with the level of profits we achieve with this partner.	
Social Capital, 5-point Likert scale	Villena, Revilla, and Choi (2011) JOM	0.81	Please indicate the extent to which the relationship between your company and this supplier is characterized by:	H4a, H4b
			A close personal interaction between the partners.	
			Mutual respect between the partners.	
			Mutual trust between the partners.	
			Personal friendship between the partners.	
			Reciprocity between the partners.	
Long term orientation, 7-point Likert scale	Ganesan (1994) JM	0.94	We believe that over the long run our relationship with this partner will be profitable.	H2a, H2b
			Maintaining a long term relationship with this partner is important to us.	
			We focus on long term goals in this relationship.	
			We are willing to make sacrifices to help this partner from time to time.	
			We are only concerned with our outcomes in this relationship. [R]	
			We expect this partner to be working with us for a long time.	
			Any concessions we make to help out this partner will even out in the long run.	
Relationship specific investment, 7-point Likert	Nyaga and Whipple (2011) JBL	0.76	We have invested substantially in personnel dedicated to this relationship.	H1a, H1b
			We have provided proprietary expertise and/ or technology to this relationship.	

scale			We have dedicated significant investments (e.g. equipment or support systems) to this relationship.	

Learning/ absorptive capacity, 7-point Likert scale	Schoenherr, Griffith, and Chandra (2014) JBL	0.892	Working with this specific partner, we have developed processes for
			    Protecting knowledge from inappropriate use outside the organization.
			    Encouraging the protection of knowledge.
			    Restricting access to some sources of knowledge.
			    Acquiring knowledge about new products or services within our industry.
			    Generating new knowledge from existing knowledge.
			    Collaborating.
				H3a, H3b

Relationship Quality	Composed of trust, commitment and relationship satisfaction.			
Trust, 5-point Likert scale	Kumar et al. (1995) JMR	0.91	When making important decisions, this partner is concerned about our welfare. We can rely on this partner handling critical information on our company confidentially. When we have an important requirement, we can depend on this partner's support. We are convinced that this partner performs its tasks professionally. We can count on this partner's promises made to our firm.	All
Commitment, 7-	Anderson and Weitz (1992)	0.85	We are patient with this partner when they	All

point Likert scale	JMR		make mistakes that cause us trouble.	
			We are willing to dedicate whatever people and resources it takes to grow sales for this partner.	
			We are quite willing to make long-term investments in this partner.	
			We are not continually on the lookout for another partner to replace this partner.	
Satisfaction, 7-point Likert scale	Nyaga and Whipple (2011) JBL	0.90	My firm is satisfied with this partner in terms of:	All
			Coordination of activities.	
			Level of commitment.	
			Level of information sharing.	
			Management of activities.	
Reciprocity, 5-point Likert scale	Chan and Li (2010) JBR	0.86	I am willing to help and share information with my partner when they need it.	H5a, H5b
			When my partner needs my help, I am willing to assist them even if it may cost me time and effort.	
			When I ask this partner for help, I think they will help me.	
			Even if this partner, who I have helped may not help me in return, I believe they will in the future.	
Statistical Process Controls (Marker), 5-point Likert scale	Shah and Ward (2007) JOM	NR	At my company, we make extensive use of statistical techniques to reduce variance in our business volume.	Marker
Note: All items are measured on a five item Likert scale (Strongly disagree to strongly agree)				

3.4 Survey distribution

The data collection for this study is via an online- survey approach. The online

survey will be developed and distributed in English using Qualtrics. The researcher will

start by using a systematic random sample of 1,800 email addresses from a logistics and

supply chain management professional blog. The total blog subscribership is

approximately 3,600. Selecting 1,800 email addresses using a systematic random

sample (every other email address), gives a relatively large pool from which to draw

responses. The blog simply serves as a method to reach an adequate and related sample

of respondents, just as other researchers have done by sending invitations to a list of

organization membership (e.g. CSCMP). In this blog invitation, the author will request

participation and will offer, in return, an executive summary of the survey results to

motivate participation. See Table 5 for the invitation text. This method has yielded

excellent results in a previous study of a similar group by the researcher. The researcher

expects the required sample size to respond within six weeks or initiation of the survey.

Table 6: Blog invitation to survey

Dear Logistics of Logistics blog readers,
I appreciate all your interest and participation in my and Joe's last study on power in negotiations! Joe and I have recently discussed conducting an additional study about causes of good business relationships going bad. We've created a survey that I hope will be of great interest to you! Once the data is collected, I will publish a professional summary of the paper on the Logistics of Logistics that I hope will be very helpful and informative for you in your everyday work! Thank you so very much for your help and interest!

If you are interested in taking this fifteen-minute survey, please click on this link:

{Link}

Warmly,

Heather and Joe

3.5 Analysis method

This study will be analyzed using structural equation modeling (SEM). SEM methods allow us to test a big picture model. One of the significant advantages of SEM is the ability to include latent variables in a complex model (Lowry and Gaskin, 2014). These latent variables may be made of many indicators which are each considered either a reflection or dimension of that latent variable (Haenlein and Kaplan, 2004; Bagozzi and Yi, 1989; Lowry and Gaskin, 2014). First generation statistical methods, that is, simple regressions cannot adequately interpret or address complex models or latent variables (Lowry and Gaskin, 2014). Instead, SEM runs many regression equations simultaneously and does so in an interdependent manner, taking each regression into account when solving each other regression (Lowry and Gaskin, 2014). Therefore, the effects of all variables are considered codependently of one another (Lowry and Gaskin, 2014).

Because this study is testing the boundary conditions of an existing theory, SET, covariance-based structural equation modeling (CB-SEM) may not be the most appropriate technique for analysis (Lowry and Gaskin, 2014). CB-SEM is well-suited for testing established and empirically supporting theoretical models (Fornell and Bookstein, 1982; Mulaik, 1976; Lowry and Gaskin, 2014). However, when testing less

well-established models, CB-SEM will accept and well-fit several different, though statistically equivalent models, and are subject therefore, to over-fitting (Lowry and Gaskin, 2014).

The full model will be evaluated using Partial Least Squares (PLS) Structural Equation Modeling (SEM) analysis using WarpPLS 4.0 (Kock, 2013). PLS has become a popular method of analysis in management-related research (Bergman et al., 2012). PLS-SEM is a mathematically iterative approach which maximizes the explained variance of the dependent variables, or latent constructs (Hair, Ringle, and Sarstedt, 2011). This predictive method is solved one latent variable block at a time before estimating the overall structural path before moving on (Peng and Lai, 2012). PLS-SEM also allows rigorous mathematical analysis with a smaller sample size than covariance-based SEM methodologies (Chin, 1998; Peng and Lai 2012; Sosik et al., 2009; Hair et al,. 2011).

WarpPLS is a powerful software which runs PLS and is capable, unlike other PLS software, to estimate nonlinear relationships among the latent variables (Kock, 2013). Though this study is not hypothesizing non-linear or curvilinear relationships between dark side variables and likelihood of relationship termination and relationship performance, because some other studies have found curvilinear relationships between similar variable sets, WarpPLS will allow the data to be analyzed most accurately.

The minimum required sample size to run PLS-SEM is commonly considered to be the number required to run the estimates for one latent variable block at a time and can be estimated using one of two rules of thumb: 1) ten times the number of manifest variables on the latent variable with the highest number of manifest indicators, or 2) ten times the number of latent variables with a path to the dependent latent variable (Peng

and Lai, 2012). However, there has been some criticism of this sample size rule of thumb (Marcoulides, Chin, and Saunders, 2009; Lowry and Gaskin, 2014). Even though PLS will often run with low sample sizes, where CB-SEM will not, the resulting estimates in PLS may be unstable and do not exhibit acceptable levels of power (Goodhue, Lewis and Thompson, 2006; Lowry and Gaskin, 2014). According to Chin and Newsted (1999), to be the most accurate in a PLS estimation, the effect size and power tables must be used to determine the most appropriate sample size (Lowry and Gaskin, 2014; Marcoulides and Saunders, 2006).

The largest number of manifest variables in the model (9) belongs to the endogenous variable: relationship financial performance, indicating that by the above rule of thumb, a sample size of 90 is sufficient to run a rigorous PLS-SEM analysis. However, according to previous studies, for the most rigorous PLS study, a power analysis must be conducted. According to Cohen (1992), if the maximum number of paths from manifest variables to their latent variable is 9, the sample size recommendations for a significance level of 5% is n=88 to detect R squared values of 0.25 and above, to achieve statistical power of 80%. If detecting R^2 levels of 0.10 is desired, the recommended sample size increases to 181 to attain statistical power of 80% (Hair et al., 2014; Cohen, 1992). Because this study is looking for standardized paths above 0.20 for meaningful predictive power (Chin, Marcolin, and Newsted, 2003), the goal is for a sample size just above n=88 (Hair, Hult, Ringle and Sarstedt, 2014; Cohen, 1992).

Table 7: Power analysis

Significance level= 0.05	Minimum R-squared			
Highest number of manifest variables	0.10	0.25	0.50	0.75
9	181	88	57	46

Adapted from Hair, Hult, Ringle, and Sarstedt, 2014; Cohen, 1992.

3.5.1 Data quality

Once data has been collected, we will report the numbers of respondents and non-respondents in a table, as well as the data descriptives including means, standard deviations and ranges of all independent and dependent variables. The randomness of missing values will be evaluated and outliers will be discarded (Bergman et al., 2012).

3.5.2 Nonresponse bias

Nonresponse bias will then be evaluated. Nonresponse bias is an ongoing and common problem (Cycyota and Harrison, 2002) that is considered a worse problem in online surveys than other survey distribution techniques (Couper, 2000; Grancolas, Rettie and Marusenko, 2003). A time-trend extrapolation test will be conducted comparing early and late respondents on both demographic variables and constructs to evaluate any systematic differences (Armstrong and Overton, 1977). This will be accomplished using a two-tailed t-test, with p> 0.05 (Bergman et al., 2012).

3.5.3 Common method bias

Next, common method bias will be evaluated. Common method bias is a bias which may occur in data sets due to factors outside the measures in the study (Lowry and Gaskin, 2014). More specifically, common method variance is a characteristic of

cross-sectional studies in which often the attitude and behaviors are asked about at the same time in the same survey, which may create an unrealistically high correlation between the two variables thereby confounding the results and interpretation (Lindell and Whitney, 2001). Using one method for collecting data, such as an online survey may introduce a common method bias which may alter responses systematically (Gaskin, 2013). There are two commonly accepted methods of evaluating possible common method bias: Harman's one factor test and the marker variable. This study will use Harman's one factor test. Harman's one factor test (Podsakoff and Organ, 1986) will be used by conducting an exploratory factor analysis and constraining the number of factors in the EFA to one (Gaskin, 2013). If common method bias is an issue, that single factor will account for a large amount of variance in the overall model (Gaskin, 2013).

A second test of common method bias is to include a marker variable in the survey instrument which is theoretically unrelated to the constructs of the study (Lowry and Gaskin, 2014; Lindell and Whitney, 2001). The marker variable is then correlated to the data; if correlations are higher than expected, then the common method bias may be present (Lowry and Gaskin, 2014). The best way to address this problem using the marker variable is to include a theoretically unrelated variable in the questionnaire to justify the a priori zero correlation between this marker variables and the other study variables (Lindell and Whitney, 2001). According to Williams, Hartman and Cavazotte (2010), many published studies have used single-item Likert-scale marker variables (e.g. Waldman, Javidan and Varella, 2004; Johnson and Hall, 2005; Arnold and Spell, 2006). The marker variable that will be used in the study is part of a survey designed for studying lean production methods, specifically statistical process control and is adapted from Shah and Ward (2007). The marker variable is:

At my company, we make extensive use of statistical techniques to reduce variance in our business volume.

3.5.4 Reliability

Even though the measures used in the study are all existing measures with acceptable reliabilities, this study will still evaluate the measure reliability. When the survey scale or instrument is altered, it is essential to reestablish the reliability concurrently with data analysis (Creswell, 2009). Reliability will be evaluated using both Cronbach's alpha and composite reliability (Nunnally, 1978). For best results, reliability should be above the 0.7 threshold (Nunnally, 1978).

3.5.5 Validity—Discriminant validity

Next, discriminant validity will be checked using two accepted methods. First, we will check that the average variance extracted (AVE) does not exceed the squared inter-construct correlations between latent constructs (Fornell and Larcker, 1981). Next, all cross loadings will be evaluated to confirm that each indicator or manifest variable loads higher on its own latent variable than any other latent variable (Bergman et al., 2012).

It is possible that multicollinearity may be present with some of the variable scales. For example, the scale items for long-term orientation and the commitment scales within RQ are quite similar. For this reason, three separate dimensions of RQ were included in the case of multicollinearity and multicollinearity tests will be conducted.

According to Hair, Black, Babin and Anderson (2010), multicollinearity is not a problem of the model specification, but a somewhat common problem with the data. Detection of multicollinearity can be done in three ways. First, and simplest, evaluation

of the correlation matrix for all independent variables (Hair et al., 2010). If correlations exist above .90, then substantial collinearity is present (Hair et al., 2010). The other two tests which will be conducted to evaluate the presence of multicollinearity is the calculation of tolerance and the variance inflation factor (VIF) (Hair et al., 2010). Tolerance is the measure of variability in the independent variable which is not explained by the other independent variables and VIF is the inverse of tolerance (Hair et al., 2010).

3.5.6 Validity—Convergent validity

Convergent validity is the condition upon which items that are indicators for a latent construct share a proportion of variance with one another (Hair et al., 2010). This study will establish convergent validity by confirming that the manifest variables loaded with significant t-values on their latent variables (Lowry and Gaskin, 2014). Then, the outer model loadings will be evaluated to confirm the manifest variables are significant at the 0.05 level (Lowry and Gaskin, 2014). If both these conditions are satisfied at the 0.05 level, strong convergent validity is established (Lowry and Gaskin, 2014).

3.6 Demographics and control variables

In order to perform a robust analysis, this study will include control variables in the analysis (Villena et al., 2011), both about the firm and the demographics of the individual respondents. Demographic questions for the respondents will include age, duration at the current position, and job title (Modi and Mabert, 2007). Firm level control variables will include individual firm financial performance (measured as approximate value of annual net sales) (Tokman, Richey, Marino and Weaver, 2007; Modi and Mabert, 2007), firm size (measured by number of employees) (Gulati, 1983;

Tokman, Richey, Marino and Weaver, 2007; Modi and Mabert, 2007), relationship criticality (measured by the percent of business satisfied by the particular relationship in question) (Modi and Mabert, 2007), and industry (Modi and Mabert, 2007). Analysis will be made during data analysis for potential differences in groups based on control variables. Initially, correlation tables will be created to determine which control variables require further evaluation. The impact of the control variables on the model will be tested by including the control variables in the full model and evaluating the paths for significance.

3.7 Test the predictive power of the model

To assess the predictive power of the PLS model, there must be both high R^2 and significant and substantial paths between variables (Chin, 1998; Lowry and Gaskin, 2014). The rule of thumb when determining substantial paths, 0.30 or higher shows that the model has significant, substantial predictive power (Chin, Marcolin, and Newsted, 2003; Lowry and Gaskin, 2014). There are times, however, when even lower interaction terms, if significant, are still important to the model and may be retained (Chin et al., 2003; Lowry and Gaskin, 2014).

3.8 Hypotheses testing

The hypotheses will be tested in a structural equation model, designed as pictured in the structural model in Chapter 2. This structural model has been specified using theory and literature. The measurement model was defined using the structural model along with existing measurement scale items. The continuous moderation effect of RQ will be tested for its effect to evaluate alteration in strength of direction of the relationships between the independent and dependent variables (Hair, Hult, Ringle and

Sarstedt, 2014). The moderator is a higher-order construct which requires testing of two layers of constructs (Hair et al., 2014). This involves testing the contribution of the lower order constructs on the higher order construct to create a more parsimonious variable (Hair et al., 2014). The moderation testing is simple to set up in the software as a higher order latent construct with a direct moderating path to the relationship between the independent and dependent variables.

First, the variables will be attached to the theoretical constructs and the data will be imported into the program. Next, the PLS algorithm will be performed. Then, the final statistics will be calculated and reported, and their interpretation will be discussed. This will include the measurement model statistics, a summary of the path coefficients and their significance levels (Lowry and Gaskin, 2014). This comprehensive evaluation of the statistical results will include indicator reliability (goal of standardized indicators above 0.70), R^2 levels, the effect size to evaluate weak, moderate, or strong effects, path coefficient estimates with significance and predictive relevance (Q^2, also evaluated for weak, moderate and strong predictive relevance) (Hair, Ringle and Sarstedt, 2013). Finally, complementary PLS analyses will be conducted including the evaluation of the effect of the moderator and the control variables (Hair et al., 2013).

The research results will be compared to the original research questions, and then to the specific hypotheses under study. The discussion will address why these results may have occurred and relate those results back to the theory and the foundational literature.

4.0 Results

4.1 Pretest feedback and Sample Size

From the initial survey review of 12 professionals and academics, it was concluded that the measurement items were easy to understand and the questions were well-written, but the instructions were poorly placed and unclear. Because the initial instructions were determined to be somewhat unclear, a second set of instructions was added after the IRB informed consent sections on the survey instrument. See Figure 3.

Figure 3: Additional Instructions for Survey

As you are reading the survey questions, please keep in mind a specific business that your company has worked with. This should be a relationship that you are and have been closely involved with and that you would consider a mature business relationship.

Please recall that mature business relationships are typically mutually-dependent relationships that often have relationship-specific investments and a willingness to take risks for mutual benefit. This mature relationship is often an older relationship with a history of satisfactory interaction.

As was established in Chapter 3, the minimum sample size to achieve adequate statistical power in the study was n=181 to detect R^2 as low as 0.10. The invitation was sent to 1,800 email addresses from the blog readership of The Logistics of Logistics. There were 305 initial responses. First, surveys which were unfinished were deleted (n= 77), leaving 228 finished surveys. Next, the respondents who answered "No" to Question 15 were removed (n=2), leaving a remaining n=226. Question 15 was: "Would you characterize this specific relationship as a mature relationship?" Finally, listwise deletion was used to eliminate any respondents who left any question blank (n=35),

leaving a remaining n=191. This final sample size of 191 is adequate to detect R^2 as low as 0.10 (Chin, 1989).

The data set was tested in its entirety, as WarpPLS path coefficient calculation allows interpretation of the path coefficients as if they are the path coefficients of linear regressions (Kock, 2014). Therefore, there is no need to split the data set into high or low conditions of the moderator.

4.2 Data quality

4.2.1 Data descriptives and demographics

The final sample size was gathered in two waves: the first wave responded to the initial invitation, and the second wave responded after the second invitation was sent approximately four weeks later. The first wave of respondents received the following invitation:

Figure 4: First Wave Invitation

Dear Logistics of Logistics blog readers,

I appreciate all your interest and participation in my and Joe's last study on power in negotiations! Joe and I have recently discussed conducting an additional study about causes of good business relationships going bad. We've created a survey that I hope will be of great interest to you! Once the data is collected, I will publish a professional summary of the paper on the Logistics of Logistics that I hope will be very helpful and informative for you in your everyday work! Thank you so very much for your help and interest!

If you are interested in taking this fifteen-minute survey, please click on this link:

{Link}

Warmly,

Heather and Joe

The second wave invitation was as follows (differences are bolded):

Figure 5: Second Wave Invitation

Dear Logistics of Logistics blog readers,

Joe and I would like to follow up on a recent invitation we sent to you requesting

participation in a very interesting study! We've created a survey that I hope will be of

great interest to you! Once the data is collected, I will publish a professional summary

of the paper on the Logistics of Logistics that I hope will be very helpful and

informative for you in your everyday work! Thank you so very much for your help and

interest!

If you are interested in taking this fifteen-minute survey, please click on this link:

{Link}

Warmly,

Heather and Joe

The number of respondents for each wave is n=79 for the first wave invitation and 112

for the second wave invitation.

Table 8: N for Each Wave

	First Wave	Second Wave
N	79	112

As illustrated in the following tables, the majority of the respondents were supervisors/managers (69.6%) who have been in the position for at least a year (97%) for the same firm (98%). There was a diversity of industries and firm sizes in terms of revenue and number of employees represented in the sample. Below are the descriptives for the respondents.

Table 9: Demographics of Respondents

Q10: Please choose your general job title from the following list.			
Code	Answer	Frequency	%
1/ 2	Supervisor/ Manager	132	69.6%
3	Front-line employee	43	22.5%
4	Vice President	2	1%
5	Director	13	6.8%
6	C-suite	0	0%
Q11: How long have you held this position?			
Code	Answer	Frequency	%
1	Less than one year	4	2.1%
2	Between one and five years	102	53.4%
3	Between five and ten years	62	32.5%
4	Between ten and fifteen years	13	6.8%
5	More than fifteen years	10	5.2%
Q21: In what industry category would this partner belong in?			
Code	Answer	Frequency	%
1	Manufacturing	35	18.3%
2	Logistics	17	8.9%
3	Retail	28	14.7%

4	Information technology	44	23%
5	Marketing	10	5.2%
6	Hospitality	14	7.3%
Q24: How long have you been with this company?			
Code	Answer	Frequency	%
1	Less than one year	4	2.1%
2	Between one and five years	73	38.2%
3	Between five and ten years	78	40.8%
4	Between ten and fifteen years	27	14.1%
5	More than fifteen years	9	4.7%
Q12: Please choose the approximate annual revenue of your company.			
Code	Answer	Frequency	%
1	Less than $100,000	15	7.9%
2	Between $100,000 and $500,000	32	16.8%
3	Between $500,000 and $1,000,000	39	20.4%
4	Between $1,000,000 and $2,000,000	30	15.7%
5	Above $2,000,000	75	39.3%
Q13: Please choose the number of employees in your company.			
Code	Answer	Frequency	%
1	Less than 50	52	27.2%
2	Between 50 and 100	34	17.8%
3	Between 100 and 200	26	13.6%
4	Between 200 and 500	26	13.6%
5	More than 500	53	27.7%
Q14: In what industry category does your company operate?			

Code	Answer	Frequency	%
1	Manufacturing	30	15.7%
2	Logistics	21	11%
3	Retail	44	23%
4	Information technology	43	22.5%
5	Marketing	12	6.3%
6	Hospitality	21	11%
7	Research/ development	20	10.5%

4.2.3 Outlier and normality analysis

There were no outliers present, based upon visual inspection of box and whisker plots. Skew and kurtosis were calculated to check for normality, *though*, normality is not a required distribution assumption for partial least squares (PLS) (Hair et al., 2014). The thresholds used in this study are skewness < 2 and kurtosis < 7 to satisfy assumptions of normality (Curran, West and Finch, 1996). A single item does not show normality: Q_15. This question was "Would you characterize this specific relationship as a mature relationship?" The dichotomous yes/ no answer is sharply skewed to "Yes" as would be expected based on the survey instructions to answer the questions in the survey with a mature business relationship in mind. However, the respondents answering "No" to Question 15 were eliminated during the data cleansing process. Therefore, the non-normality of this item does not affect the analysis of the data.

Table 10: Normality Testing for Manifest Variables

Construct	Item	Skewness	Below threshold?	Kurtosis	Below threshold?
	Q16	-0.803	Yes	1.615	Yes
	Q15	10.625	No	111.901	No
Relational Social Capital	Q2_1	-1.028	Yes	1.428	Yes
	Q2_2	-1.194	Yes	1.669	Yes
	Q2_3	-1.091	Yes	1.279	Yes
	Q2_4	-0.435	Yes	-0.258	Yes
	Q2_5	-0.971	Yes	1.845	Yes
Long term orientation	Q3_1	-0.923	Yes	1.531	Yes
	Q3_2	-1.44	Yes	2.433	Yes
	Q3_3	-1.195	Yes	1.923	Yes
	Q3_4	-0.723	Yes	1.047	Yes
	Q3_5	-0.547	Yes	-0.549	Yes
	Q3_6	-1.267	Yes	3.472	Yes
	Q3_7	-0.553	Yes	0.891	Yes
Relationship specific investment	Q4_1	-0.981	Yes	1.509	Yes
	Q4_2	-0.877	Yes	0.749	Yes
	Q4_3	-0.89	Yes	0.808	Yes

Learning and absorptive capacity	Q5_1	-1.04	Yes	1.347	Yes
	Q5_2	-1.273	Yes	2.019	Yes
	Q5_3	-1.235	Yes	2.1	Yes
	Q5_4	-0.565	Yes	-0.271	Yes
	Q5_5	-0.765	Yes	0.434	Yes
	Q5_6	-0.352	Yes	-0.452	Yes
Likelihood of Relationship Termination	Q8_1	1.702	Yes	3.306	Yes
	Q8_2	1.309	Yes	0.782	Yes
	Q8_3	1.24	Yes	1.624	Yes
	Q8_4	1.062	Yes	0.647	Yes
Perceptions of relationship financial performance	Q9_1	-0.873	Yes	2.549	Yes
	Q9_2	-1.064	Yes	2.446	Yes
	Q9_3	-1.091	Yes	0.131	Yes
	Q9_4	-1.206	Yes	2.795	Yes
	Q9_5	-0.644	Yes	0.178	Yes
	Q9_6	-0.915	Yes	1.579	Yes
	Q9_7	-0.716	Yes	0.247	Yes
	Q9_8	-0.659	Yes	-0.652	Yes
	Q9_9	-0.996	Yes	2.123	Yes
RQ (Trust)	Q17_1	-1.044	Yes	2.443	Yes
	Q17_2	-1.157	Yes	2.343	Yes

	Q17_3	-1.019	Yes	2.819	Yes
	Q17_4	-1.139	Yes	2.641	Yes
	Q17_5	-1.121	Yes	2.663	Yes
RQ (Commitment)	Q19_1	-0.747	Yes	0.995	Yes
	Q19_2	-0.741	Yes	1.293	Yes
	Q19_3	-0.999	Yes	1.649	Yes
	Q19_4	-0.863	Yes	0.031	Yes
RQ (Satisfaction)	Q20_1	-0.689	Yes	1.863	Yes
	Q20_2	-1.083	Yes	1.473	Yes
	Q20_3	-0.742	Yes	0.79	Yes
	Q20_4	-1.157	Yes	2.923	Yes
Reciprocity	Q22_1	-0.984	Yes	2.263	Yes
	Q22_2	-0.896	Yes	1.599	Yes
	Q22_3	-0.777	Yes	0.697	Yes
	Q22_4	-0.829	Yes	1.173	Yes
	How many above threshold?	1			1

4.2.4 Nonresponse bias testing

Next, early versus late responders were tested for significant differences (Armstrong and Overton, 1977). Data was collected over roughly a two month period.

The "End Date" was used to rank all responses and first wave respondents were placed in the early respondents category, while respondents after the second wave invitation were classified as late respondents. As was discussed in Chapter 3, two-tailed t-tests were conducted for all latent variables, control variables, and demographic variables. There were no significant results, indicating that nonresponse bias is not problematic in this data set.

4.2.5 Common method bias testing

To test for common method bias, a theoretically unrelated marker variable was included in the study (Lindell and Whitney, 2001): statistical control processes (Shah and Ward, 2007). The marker variable was non-significant to both endogenous variables indicating that common method bias is not a serious concern in this study.

Figure 6: Marker Variable

To what extent do you agree with the following statement?
At my company, we make extensive use of statistical techniques to reduce variance in our business volume.

4.2.6 Multicollinearity: Indicators

Next, univariate testing was conducted to analyze loadings and significance of the manifest variables on their latent variables. The variance inflation factor (VIF) is reported for each variable to evaluate them for indicator multicollinearity. Though there are several rules of thumb, the more commonly used recommendations are VIF < 10 (Hair et al., 2010) and VIF < 5 (Hair et al., 2014), while the recommended threshold in WarpPLS software is VIF < 3.3 (Kock, 2014). All indicators satisfy even the most

restrictive threshold of VIF < 3.3, indicating that multicollinearity is not an issue. The following tables show the initial univariate testing, before scale revision was conducted to optimize convergent and discriminant validity.

Table 11: Univariate Testing: Relational Social Capital

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q2_1	(0.240)	Reflective	0.055	<0.001	1.318	1	0.144
Q2_2	(0.329)	Reflective	0.055	<0.001	2.511	1	0.272
Q2_3	(0.326)	Reflective	0.055	<0.001	2.449	1	0.266
Q2_4	(0.253)	Reflective	0.055	<0.001	1.348	1	0.160
Q2_5	(0.251)	Reflective	0.055	<0.001	1.241	1	0.157

Table 12: Univariate Testing: Long Term Orientation

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q3_1	(0.216)	Reflective	0.055	<0.001	2.097	1	0.174
Q3_2	(0.211)	Reflective	0.055	<0.001	2.080	1	0.166
Q3_3	(0.212)	Reflective	0.055	<0.001	1.934	1	0.168
Q3_4	(0.193)	Reflective	0.055	<0.001	1.692	1	0.139
Q3_5	(0.083)	Reflective	0.055	0.067	1.115	1	0.026
Q3_6	(0.216)	Reflective	0.055	<0.001	2.034	1	0.174
Q3_7	0.203	Reflective	0.055	<0.001	1.831	1	0.153

Table 13: Univariate Testing: Relationship Specific Investment

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q4_1	(0.392)	Reflective	0.055	<0.001	1.564	1	0.320
Q4_2	(0.412)	Reflective	0.055	<0.001	1.777	1	0.354

| Q4_3 | (0.394) | Reflective | 0.055 | <0.001 | 1.593 | 1 | 0.325 |

Table 14: Univariate Testing: Learning/ Absorptive Capacity

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q5_1	(0.244)	Reflective	0.055	<0.001	1.672	1	0.175
Q5_2	(0.240)	Reflective	0.055	<0.001	1.701	1	0.170
Q5_3	(0.186)	Reflective	0.055	<0.001	1.282	1	0.102
Q5_4	(0.270)	Reflective	0.055	<0.001	2.086	1	0.215
Q5_5	(0.279)	Reflective	0.055	<0.001	2.257	1	0.230
Q5_6	(0.191)	Reflective	0.055	<0.001	1.272	1	0.107
Q3_7	0.203	Reflective	0.055	<0.001	1.831	1	0.153

Table 15: Univariate Testing: Likelihood of Relationship Termination

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q8_1	(0.341)	Reflective	0.055	<0.001	2.533	1	0.276
Q8_2	(0.314)	Reflective	0.055	<0.001	2.109	1	0.234
Q8_3	(0.320)	Reflective	0.055	<0.001	2.421	1	0.244
Q8_4	(0.322)	Reflective	0.055	<0.001	2.060	1	0.246

Table 16: Univariate Testing: Perceptions of Relationship Financial Performance

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q9_1	(0.200)	Reflective	0.055	<0.001	2.210	1	0.156
Q9_2	(0.185)	Reflective	0.055	<0.001	1.816	1	0.134
Q9_3	(0.150)	Reflective	0.055	0.004	1.992	1	0.088
Q9_4	(0.185)	Reflective	0.055	<0.001	1.720	1	0.134
Q9_5	(0.179)	Reflective	0.055	<0.001	1.648	1	0.125

Q9_6	(0.180)	Reflective	0.055	<0.001	1.746	1	0.127
Q9_7	(0.096)	Reflective	0.055	0.042	1.176	1	0.036
Q9_8	(0.102)	Reflective	0.055	0.032	1.663	1	0.041
Q9_9	(0.201)	Reflective	0.055	<0.001	2.007	1	0.158

Table 17: Univariate Testing: Trust

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q17_1	(0.227)	Reflective	0.055	<0.001	1.645	1	0.168
Q17_2	(0.238)	Reflective	0.055	<0.001	1.810	1	0.185
Q17_3	(0.259)	Reflective	0.055	<0.001	2.359	1	0.219
Q17_4	(0.256)	Reflective	0.055	<0.001	2.161	1	0.213
Q17_5	(0.256)	Reflective	0.055	<0.001	2.214	1	0.214

Table 18: Univariate Testing: Commitment

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q19_1	(0.381)	Reflective	0.055	<0.001	1.236	1	0.273
Q19_2	(0.395)	Reflective	0.055	<0.001	1.360	1	0.294
Q19_3	(0.440)	Reflective	0.055	<0.001	1.489	1	0.363
Q19_4	(0.192)	Reflective	0.055	<0.001	1.058	1	0.069
Q19_5	(0.381)	Reflective	0.055	<0.001	1.236	1	0.273

Table 19: Univariate Testing: Satisfaction

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q20_1	(0.287)	Reflective	0.055	<0.001	2.354	1	0.246
Q20_2	(0.285)	Reflective	0.055	<0.001	2.222	1	0.243

Q20_3	(0.288)	Reflective	0.055	<0.001	2.335	1	0.249
Q20_4	(0.296)	Reflective	0.055	<0.001	2.680	1	0.262
Q20_5	(0.287)	Reflective	0.055	<0.001	2.354	1	0.246

Table 20: Univariate Testing: Reciprocity

Item	Loading	Type	SE	P value	VIF	WLS	ES
Q22_1	(0.346)	Reflective	0.055	<0.001	1.567	1	0.273
Q22_2	(0.322)	Reflective	0.055	<0.001	1.397	1	0.238
Q22_3	(0.353)	Reflective	0.055	<0.001	1.611	1	0.285
Q22_4	(0.298)	Reflective	0.055	<0.001	1.295	1	0.203

4.3 Internal consistency

Next, the model's internal consistency was evaluated using reliability, convergent validity and discriminant validity. This was an iterative process which involved evaluating all internal consistency measures and removing measurement items which may be reducing internal consistency. In this iterative process, 11 measurement items were removed from the model. Once those items were removed, reliability, convergent validity and discriminant validity were within accepted thresholds, and there were an adequate number of items remaining for each construct. Measures must comply with acceptable levels of reliability and validity (Duffy, 2008; Churchill, 1979), and must be newly evaluated any time they are not adopted verbatim from existing scales, as is the case in this study during which the items were adopted. It is acceptable to refine measures to correct lower internal consistency scores, including reliabilities (Duffy, 2008).

The final set of measurement items retained for the hypotheses tests can be seen in Table 21. The items highlighted gray were removed from the analysis for the improvement of the internal consistency.

Table 21: Final Set of Retained Measurement Items

Construct	Citation	Question number	Item	Tested in hypothesis:
Relationship termination 4 items	Johnson (1999) JAMS	8_1	We expect the relationship with this partner to last a long time. (R)	All
		8_2	It is likely that our relationship with this partner will be terminated within the next 2 years.	
		8_3	Our firm has been successful in getting this partner to commit to long term cooperation. (R)	
		8_4	This partner is hesitant to come to any long term agreements.	
Perceptions of relationship financial performance 3 items	Duffy (2008) IMM	9_1	We see a lot of future growth potential with this partner.	All
		9_2	The amount of business we have with this partner is growing.	
		9_3	The future viability of this relationship does not look good. [R]	
		9_4	Investments of time and money in this partner have been worthwhile.	
		9_5	Investments we have made in this relationship have made our business operations more cost effective and efficient.	
		9_6	Returns we have made from this relationship have enabled us to reinvest and expand our business with this customer.	
		9_7	The cost of servicing this partner is low given the amount of business it generates.	
		9_8	We have been required to make investments in	

			this relationship that have cost us a lot of money but offer little benefit to our own operations. [R]	
		9_9	We are satisfied with the level of profits we achieve with this partner.	
Social Capital 5 items	Villena, Revilla, and Choi (2011) JOM		Please indicate the extent to which the relationship between your company and this supplier is characterized by:	H4a, H4b
		2_1	A close personal interaction between the partners.	
		2_2	Mutual respect between the partners.	
		2_3	Mutual trust between the partners.	
		2_4	Personal friendship between the partners.	
		2_5	Reciprocity between the partners.	
Long term orientation 5 items	Ganesan (1994) JM	3_1	We believe that over the long run our relationship with this partner will be profitable.	H2a, H2b
		3_2	Maintaining a long term relationship with this partner is important to us.	
		3_3	We focus on long term goals in this relationship.	
		3_4	We are willing to make sacrifices to help this partner from time to time.	
		3_5	We are only concerned with our outcomes in this relationship. [R]	
		3_6	We expect this partner to be working with us for a long time.	
		3_7	Any concessions we make to help out this partner will even out in the long run.	
Relationship specific investment 3 items	Nyaga and Whipple (2011) JBL	4_1	We have invested substantially in personnel dedicated to this relationship.	H1a, H1b
		4_2	We have provided proprietary expertise and/ or technology to this relationship.	
		4_3	We have dedicated significant investments (e.g. equipment or support systems) to this	

			relationship.	
Learning/ absorptive capacity 4 items	Schoenherr, Griffith, and Chandra (2014) JBL		Working with this specific partner, we have developed processes for	H3a, H3b
		5_1	Protecting knowledge from inappropriate use outside the organization.	
		5_2	Encouraging the protection of knowledge.	
		5_3	Restricting access to some sources of knowledge.	
		5_4	Acquiring knowledge about new products or services within our industry.	
		5_5	Generating new knowledge from existing knowledge.	
		5_6	Collaborating.	
Relationship Quality	Composed of trust, commitment and relationship satisfaction.			
Trust 5 items	Kumar et al. (1995) JMR	17_1	When making important decisions, this partner is concerned about our welfare.	All
		17_2	We can rely on this partner handling critical information on our company confidentially.	
		17_3	When we have an important requirement, we can depend on this partner's support.	
		17_4	We are convinced that this partner performs its tasks professionally.	
		17_5	We can count on this partner's promises made to our firm.	
Commitment 4 items	Anderson and Weitz (1992) JMR	19_1	We are patient with this partner when they make mistakes that cause us trouble.	All
		19_2	We are willing to dedicate whatever people and resources it takes to grow sales for this partner.	
		19_3	We are quite willing to make long-term investments in this partner.	

		19_4	We are not continually on the lookout for another partner to replace this partner.	
Satisfaction 4 items	Nyaga and Whipple (2011) JBL		My firm is satisfied with this partner in terms of:	All
		20_1	Coordination of activities.	
		20_2	Level of commitment.	
		20_3	Level of information sharing.	
		20_4	Management of activities.	
Reciprocity 3 items	Chan and Li (2010) JBR	22_1	I am willing to help and share information with my partner when they need it.	H5a, H5b
		22_2	When my partner needs my help, I am willing to assist them even if it may cost me time and effort.	
		22_3	When I ask this partner for help, I think they will help me.	
		22_4	Even if this partner, who I have helped may not help me in return, I believe they will in the future.	
Statistical Process Controls (Marker) 1 item	Shah and Ward (2007) JOM	28	At my company, we make extensive use of statistical techniques to reduce variance in our business volume.	Marker

4.3.1 Control variable tests

The path coefficients and significance of the control variable paths were evaluated, including the marker variable.

Table 22: Effect of Control Variables

Control variable	Likelihood of Relationship Termination		Perceptions of Relationship Financial Performance	
	Path Coefficient	P Value	Path Coefficient	P Value
Importance	-0.162	0.006	0.065	0.160
Marker	0.063	0.167	0.002	0.490
Job Title	0.085	0.096	-0.048	0.233
Duration in Position	0.033	0.307	0.010	0.443
Partner Industry	-0.087	0.090	0.033	0.443
Duration at Company	0.044	0.251	0.011	0.435
Own Revenue	-0.106	0.051	0.045	0.247
Own Employment	0.091	0.082	0.006	0.464
Own Industry	0.001	0.496	-0.038	0.279

Because only one control variable, importance of this partner to your company, was significant for one dependent variable, likelihood of relationship termination, only that control variable and path will be retained for further testing in the model. The significance of the 'importance' control variable means that if the importance of the partner to your company's success is high, the likelihood of relationship termination is

significantly decreased. None of the other control variables significantly impact either dependent variables and are therefore excluded from further testing.

Figure 7 shows the full structural model.

Figure 7: Full Final Structural Model
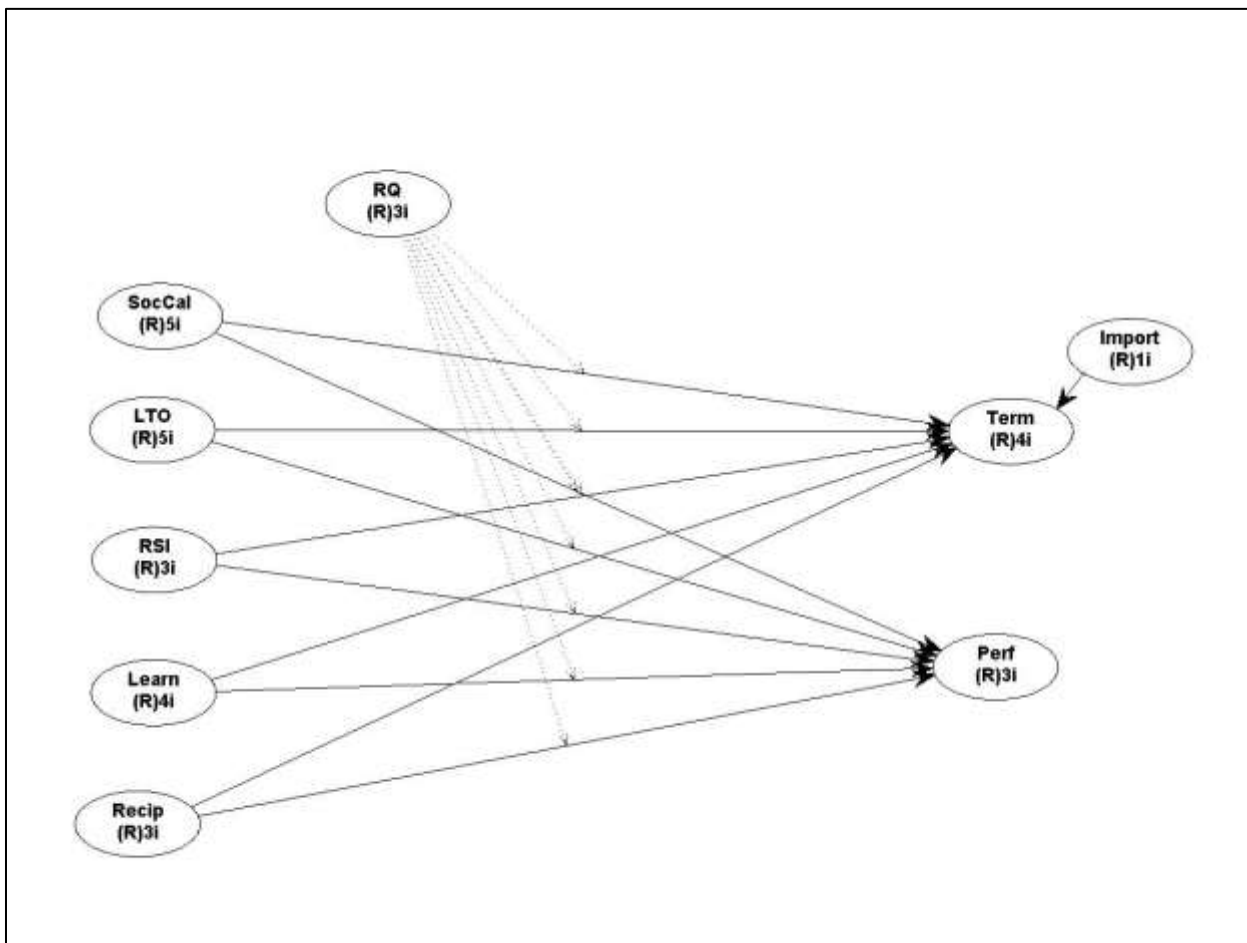
4.3.2 Reliability

Next, reliability was calculated for each latent variable using both Cronbach's alpha and composite reliability. Those statistics are reported in the following table.

When calculating the reliability for the first order constructs which make up the second order latent construct, Relationship Quality, the recommendation is to calculate a reliability for the second order construct (Kock, 2014,). All latent construct reliabilities exceed the 0.7 threshold for both Cronbach's alpha and composite reliability (Nunnally, 1970).

Table 23: Reliabilities for Latent Constructs

Construct	Final number of items	Cronbach's Alpha	Composite Reliability
Relational social capital	5	0.795	0.86
Long term orientation	5	0.876	0.91
Relationship specific investment	3	0.781	0.873
Learning/ absorptive capacity	4	0.827	0.885
Relationship termination	4	0.816	0.879
Relationship financial performance	3	0.751	0.858
Reciprocity	3	0.713	0.84
Relationship Quality	13	0.893	0.934

4.3.3 Convergent validity

Criteria for acceptable convergent validity is that average variance extracted (AVE) are above 0.50 (Hair et al., 2013; Chin 1998). With the original set of measurement items, only one construct did not achieve the threshold of 0.50,

perceptions of relationship financial performance. The table below shows the improvement in convergent validity, in terms of AVE, when some measurement items were removed. The AVE increased for the constructs which had measurement items removed that were diminishing the construct's convergent reliability: long term orientation increased from an AVE of 0.572 to 0.669; learning and absorptive capacity increased from 0.527 to 0.658; reciprocity increased from 0.615 to 0.636; and perceptions of relationship financial performance increased from below the threshold at 0.45 to above the threshold at 0.668.

Table 23: Average Variance Extracted

Construct	Original AVE	AVE with items removed
Relational social capital	0.554	0.554
Long term orientation	0.572	0.669
Relationship specific investment	0.696	0.696
Learning/ absorptive capacity	0.527	0.658
Relationship termination	0.644	0.644
Relationship financial performance	0.45	0.668
Reciprocity	0.615	0.636
Relationship Quality	0.824	0.824

4.3.4 Discriminant validity

To satisfy the criteria for discriminant validity, the square root of the AVE should be higher than the correlation between latent variables (Hair et al., 2010). See the table below for correlations between latent variables with the square root of AVE on the

diagonal, highlighted in yellow. All constructs satisfy the criteria for discriminant validity. This process was, like reliability and convergent validity, an iterative process involving cleaning the measurement items of items which were diminishing the internal consistency of the full model. This section has shown that all construct reliabilities (CR and Alpha) are acceptable at the > 0.70 level, convergent validity is satisfactory (AVEs > 0.50) and discriminant validity criteria are met (Hair et al., 2010; 2014; Kock, 2014).

Table 24: Discriminant Validity of Full Model, Latent Variable Correlations with Square Root of AVEs on Diagonal

	SocCal	LTO	RSI	Learn	Recip	Term	Perf	RQ
SocCal	0.744	0.673	0.41	0.451	0.551	0.48	0.618	0.711
LTO	0.673	0.818	0.573	0.509	0.664	0.75	0.799	0.798
RSI	0.41	0.573	0.834	0.559	0.435	0.397	0.538	0.547
Learn	0.451	0.509	0.559	0.811	0.434	0.322	0.557	0.541
Recip	0.551	0.664	0.435	0.434	0.798	0.51	0.631	0.777
Term	0.48	0.75	0.397	0.322	0.51	0.803	0.617	0.695
Perf	0.618	0.799	0.538	0.557	0.631	0.617	0.817	0.795
RQ	0.711	0.798	0.547	0.541	0.777	0.695	0.795	0.908

4.4 Evaluation of the Model

To evaluate the model, fit statistics, as used in covariance-based SEM, are not used as measures of fit in PLS-SEM. PLS-SEM, unlike CB-SEM, maximizes he explained variance in the dependent variables by fitting the model to the sample data, thereby optimizing the parameter estimates (Hair et al., 2014). Counter to this practice, CB-SEM minimizes the difference between the conceptual model and the sample covariance matrices, and its corresponding fit measures are based on this minimization of difference between the theoretical or conceptual covariance matrix and the sample data's covariance matrix (Hair et al., 2014). PLS-SEM uses measures of the model's predictive ability instead of CB-SEM's goodness of fit statistics to determine the value of the model in predicting the independent variables' effects on the dependent variables (Hair et al., 2014). R^2 values, effect sizes (f^2) and Q^2 (predictive relevance) are used together to exhibit the predictive value of the model (Hair et al., 2014).

The R^2 values are in this model moderate (above 0.50) for both likelihood of relationship termination and perceptions of relationship financial performance (Hair, Ringle and Sarstedt, 2011; Henseler et al., 2009). This analysis indicates that the exogenous variables in the full model are responsible for 52% of the variance explained for likelihood of relationship termination, and 66% of the variance explained for perceptions of relationship financial performance.

The magnitude of the R^2 of both dependent variables is acceptable. An additional measure of the model's value is predictive relevance, also called the Stone-Geisser test (Q^2) (Geisser, 1974; Stone, 1974). If a PLS-SEM model has predictive relevance, the independent variables are accurately predicting the dependent variables. Positive Q^2

values indicate acceptable levels of predictive relevance for the model (Hair et al., 2014).

Both endogenous variables have positive Q2, indicating predictive accuracy of the

model.

Table 25: Model Evaluation Statistics

	R^2	Adjusted R^2	Q^2
Likelihood of Relationship Termination	0.523	0.48	0.621
Perceptions of Relationship Financial Performance	0.657	0.629	0.729

Adjusted R^2 takes into account the explanatory power of the model as well as the

sample size and complexity of the model. This measure is affected by the number of

exogenous relationships within the model and adjusts the R^2 accordingly (Hair et al.,

2014). The adjusted R2 for the likelihood of relationship termination is 0.48 and for

perceptions of relationship financial performance, 0.629, showing that the model

complexity does not detrimentally affect its explanatory power.

4.5 Hypothesis testing

Next, the path testing results are discussed. The effect sizes, path coefficients and

p-values are used to determine which paths are significant and substantial to the full

model. The effect sizes in the model numerically describe the effect on R2 when a

particular exogenous variable is eliminated from the model. This effect size indicates if

the construct has a substantial impact on the dependent variables (Hair et al., 2014).

The recommendations for evaluating the effect size, or f2, are that values of 0.35, 0.15,

and 0.02 are large, medium and small, respectively (Cohen, 1988; Hair et al., 2014). The model exhibits both small and medium effect sizes.

Table 26: Effect Size (f^2) in the Full Model

	Effect size (f2)			
	Likelihood of Relationship Termination		Perceptions of Relationship Financial Performance	
Relational Social Capital	0.035	Small	0.031	Small
Long Term Orientation	0.525	Large	0.333	Moderate
Relationship Specific Investment	0.007	Very small	0.029	Small
Learning and Absorptive Capacity	0.029	Small	0.14	Small
Reciprocity	0.032	Small	0.118	Small
Importance	0.076	Small	NS	NA
RQ * Relational Social Capital	0.156	Moderate	0.042	Small
RQ * Long Term Orientation	0.048	Small	0.129	Small
RQ * Relationship Specific Investment	0.095	Small	0.105	Small
RQ * Learning and Absorptive Capacity	0.01	Very small	0.069	Small
RQ * Reciprocity	0.046	Small	0.128	Small

While the effect size indicates the change in R^2 if the variable were to be removed from the analysis, significant path coefficients are interpreted in the same manner as beta coefficients in regressions (Hair et al., 2014; Kock, 2015). That is, the path

coefficients estimate the change in the dependent variable resulting from that independent variable (Hair et al., 2014). The aim of this study is to identify significant path coefficients with a substantial effect on the dependent variable. Even in an analysis of potentially non-linear relationships, the meaning of the path coefficients calculated by WarpPLS have the same general interpretation, applying to the overall trend of the relationship between the independent and dependent variables (Kock, 2015).

The main effects testing reveals some particularly interesting relationships. For the dependent variable, perceptions of relationship financial performance, there are three positive significant paths: long term orientation, learning and reciprocity, supporting the current formulation of SET. However, there are no significant negative paths between any of the independent variables and likelihood of relationship termination, as would be predicted by the current formulation of SET. The changes in these results are particularly interesting when evaluating the effect of the moderator, relationship quality, in the hypothesis testing next.

Table 27: Test of Paths in Full Model

	Perceptions of Relationship Financial Performance			Likelihood of Relationship Termination		
Latent Independent	Path Coefficient	P-value	R²	Path Coefficient	P-value	R²
Long Term Orientation	0.413	<0.001	0.657	0.697	<0.001	0.523
Relationship Social Capital	0.048	0.287		0.071	0.203	
Relationship specific investment	0.05	0.28		-0.0174	0.42	
Learning	0.223	0.004		0.073	0.235	
Reciprocity	0.185	0.014		0.078	0.128	
RQ x LTO	0.249	<0.001		0.109	0.099	
RQ x SocCal	-0.091	0.142		0.41	<0.001	
RQ x RSI	0.259	<0.001		-0.264	<0.001	
RQ x Learn	-0.186	0.013		0.027	0.004	
RQ x Recip	-0.273	<0.001		0.113	<0.001	

4.5.1 Hypothesis 1a

Hypothesis 1a examined the moderated relationship between relationship specific investment and perceptions of relationship financial performance. The results of this research confirms that perceptions of relationship financial is affected by relationship specific investment, and that effect is a stronger positive effect for higher levels of relationship quality than for lower levels of relationship quality, as is evident in by the positive, significant (p<0.001) path coefficient (path coefficient=0.259) of the interaction term: relationship quality and relationship specific investment. Hypothesis

1a is supported. This result is very interesting in that the main effect of RSI on perceptions of relationship financial performance is non-significant; however, when moderated by RQ, the relationship is highly significant and positive. This suggests that while RSI does not have a significant effect on perceptions of relationship financial performance, in conditions of high RQ, RSI does indeed have a strengthening effect on the dependent variable.

This finding is supported by the classic tenets of SET, which have been very influential in management research (Cropanzano and Mitchell, 2005). The central theorem of SET is that a business relationship is built on iterative social exchanges which create social obligations, and eventually will create long-term, mutually beneficial business relationships (Emerson, 1976; Cropanzano and Mitchell, 2005).

SET contends that if one partner acts in a certain way, in this specific hypothesis, by investing in relationship specific investments, the other partner will act in a similar way; thereby strengthening and extending the relationship (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958). The positive effect resulting from the interaction term between relationship specific investment and relationship quality on perceptions of relationship financial performance bears out this tenet of SET. This result also indicates that if supply chain partners maintain a high level of RQ, they can keep the dark side effect at bay, for this particular relationship.

Central to all the hypotheses in question is the dark side effect of relationship variables. The dark side effect is the situation in which relationship variables, which are suggested by literature or theory to exhibit a positive effect on relationship performance in fact have no benefit, or even detrimentally effect the relationship (Anderson and Jap, 2005; Villena et al., 2011). Relationship specific investment has been proposed as

having a potential dark side effect (Jap and Ganesan, 2000; Backhaus and Buschken, 1999; Bensaou and Anderson, 1999). This hypothesis, however, does not support the existence of a dark side effect of relationship specific investment on perceptions of relationship financial performance when moderated by relationship quality. This result contributes to theory by supporting the rosy tenets of SET; and to the literature by not supporting relationship specific investment as a dark side effect variable in this context.

4.5.2 Hypothesis 1b

Hypothesis 1b looked at the relationship between relationship specific investment and likelihood of relationship termination. This research shows a significant effect on likelihood of relationship termination by the interaction term of relationship quality and likelihood of relationship termination. The results also show that, as is stated in the hypothesis, there is a significant ($p<0.001$), stronger negative effect (path coefficient=-0.264) of high levels of relationship quality than low relationship quality on likelihood of relationship termination. Hypothesis 1b is supported.

This result is very interesting, in that the main effect of RSI on likelihood of relationship termination is non-significant. However, once the relationship is moderated by RQ, RSI exhibits a highly significant negative effect on likelihood of relationship termination. This result indicates that in conditions of high RQ, RSI reduces the likelihood of termination, but does *not* do so in the absence of the moderating effect of RQ.

This result is determined from the significant, negative path coefficient of the interaction term of relationship quality and relationship specific investment on likelihood of relationship termination. Similar to H1a, this hypothesis is supported by

SET. In the same way that business relationships are built upon iterative social exchanges which create social obligations, the creation of relationship specific investments would strengthen and extend the continuity of a relationship (Emerson, 1976; Cropanzano and Mitchell, 2005), thereby reducing the likelihood of relationship termination, as was hypothesized. Again, this result emphasizes the beneficial effect of maintaining high levels of RQ in continuing a beneficial supply chain relationship.

Like Hypothesis 1a, the primary goal of this dissertation is to investigate the dark side effect of relationship variables. It has been suggested that relationship specific investment has a dark side effect on performance (Jap and Ganesan, 2000; Backhaus and Buschken, 1999; Bensaou and Anderson, 1999). This hypothesis does not support the existence of a dark side effect of relationship specific investment on likelihood of relationship termination when moderated by relationship quality. This result contributes to literature by not supporting the dark side effect of relationship specific investment, and supports the reciprocal obligations tenets of SET.

4.5.3 Hypothesis 2a

Hypothesis 2a examined the moderated relationship between long term orientation (LTO) and perceptions of relationship financial performance. This research confirms that long term orientation, moderated by relationship quality, has a stronger positive relationship at high levels of relationship quality than low levels of relationship quality, on perceptions of relationship performance. This conclusion is supported by the significant ($p<0.001$), positive path coefficient (0.259) between the interaction term of relationship quality and long term orientation. Hypothesis 2a is supported.

The main effect of LTO on relationship financial performance was significant and positive. While the moderated effect of LTO on relationship financial performance is also significant and positive, the path weight is half that of the main effect. This indicates that, while still significant, the presence of RQ as a moderator to the relationship reduces the strength of the effect of LTO on perceptions of relationship performance.

These findings support the current formulation of SET in management literature, which includes mutually beneficial behavior and return of social obligation in response to good treatment (Emerson, 1976; Cropanzano and Mitchell, 2005). The results of this hypothesis test show that as long term orientation increases, moderated by relationship quality, the perceptions of relationship financial performance increase; thereby illustrating the aforementioned central tenet of SET. For practice, this result indicates that if supply chain partners maintain high levels of RQ, they can keep the dark side effect at bay, for the relationship between LTO and perceptions of relationship financial performance.

Similar to Hypotheses 1a and 1b, this dissertation is interested in investigating the dark side effect of relationship variables. Research has supported the relationship between long term orientation and reduced costs and increased profits to both parties to the relationship over time (Ganesan, 1994; Skarmeas, 2006). However, a dark side effect of long term orientation has been proposed, in that long term orientation does not always produce the expected profit (Dowling and Uncles, 1997; Helm et al., 2006; Reinartz and Kumar, 2003; Moorman, Zaltman and Deshpande, 1992) and negative influences become more common with long term oriented relationships (Barnes, 2005; Grayson and Ambler, 1999; Moorman et al., 1992). The results of this hypothesis test

does not support the dark side effect of long term orientation on perceptions of relationship financial performance, but do support the performance benefits and improvement of long term relationship orientation. This result contributes to theory by supporting the central tenets of SET, and to literature by not supporting the existence of a dark side effect for long term orientation, related to performance.

4.5.4 Hypothesis 2b

Hypothesis 2b looked at the relationship between long term relationship orientation, moderated by relationship quality, and likelihood of relationship termination. The results showed that though the path is significant at $p<0.10$ ($p=0.099$), the path is has a positive coefficient (0.109), which is not negative, as was hypothesized. Hypothesis 2b is not supported.

It is very interesting that the interaction effect of long term relationship orientation and relationship quality on perceptions of relationship financial performance was positive, indicating that as long term relationship orientation increases, the perceptions of relationship financial performance increase; while this hypothesis is not supported. That is, in Hypothesis 2b, as long term orientation increases, moderated by relationship quality, likelihood of relationship termination does *not* decrease. It becomes evident that perceptions of relationship financial performance do not automatically indicate that a relationship will not be terminated prematurely. It appears that, in the case of long term orientation and likelihood of relationship termination, a dark side effect is supported. Specifically, an increase in long term orientation has an amplifying, or dark side effect on likelihood of relationship termination.

It is also observed that the main effect of LTO on likelihood of relationship termination is significant and positive, indicating that as LTO increases, the likelihood of relationship termination also increases. *However*, once the relationship is moderated by RQ, the path becomes non-significant. This indicates that while the main effect indicates an amplifying effect of LTO on likelihood of relationship financial performance, this effect is made non-significant by the presence of high levels of RQ.

This result concurs with Moorman, Zaltman and Deshpande's (1992) empirical finding that long term relationships experience a dampening effect on trust, commitment and satisfaction, which leads to a staleness in the relationship and lack of perception of value added by one or both partners. As these feelings increase over time, there is an increase in possibility of opportunistic behavior (Moorman et al., 1992), complacency (Barnes, 2005), relative dissatisfaction with the relationship (Moorman et al., 1992), and dissolution of the relationship (Fang et al., 2011).

This finding does not support the current SET formulation, which would state that as business relationships are strengthened through repeated social interaction, likelihood of relationship termination would reduce, particularly when coupled with high relationship quality (Emerson, 1976; Cropanzano and Mitchell, 2005). This appears to be a boundary condition of the current SET. However, looking at the lost tenets of SET which this dissertation is bringing to light, it becomes evident that SET has, from its birth, helped explain why relationship variables may not always have a positive effect on performance or a reductive effect on likelihood of relationship termination (Homan, 1958; Emerson, 1976).

Foundational authors of SET described a point of diminishing returns on relational variables (Homan, 1958; Emerson, 1976), and the related concepts of fatigue

and comparison level (Thibaut and Kelly, 1959). These concepts help explain why long term relationship orientation, coupled with high relationship quality may not lead to an improved relationship or, in this case, a reduction in the likelihood of relationship termination. If business partners, despite their high level of long term relationship orientation and relationship quality, begin to feel dissatisfaction due to their increased comparison level (Thibaut and Kelly, 1959) or level of diminishing return on their reciprocal obligations (Blau, 1964; Emerson, 1976; Cropanzano and Mitchell, 2005), it may be a logical step to prematurely end the relationship, despite the level of perception of relationship financial performance, as seen in H2a. This result contributes to theory by supporting the reincorporation of the foundational tenets of SET (e.g. comparison level, fatigue, point of diminishing returns), while also contributing to literature by supporting the existing of a dark side effect of long term relationship orientation on likelihood of relationship orientation.

4.5.5 Hypothesis 3a

Hypothesis 3a examined the moderated relationship between learning and absorptive capacity and perceptions of relationship financial performance. The results show that although the path is significant (p=0.013), the path coefficient is negative (-0.186), which shows that, in this data set, as the interaction term between relationship quality and learning increases, all else equal, there is a negative effect on perceptions of relationship financial performance. The hypothesis suggests that the path coefficient would be positive, suggesting that as an increase was shown in the interaction term between learning and perceptions of relationship financial performance, there would be a more positive effect on the dependent variable. Hypothesis 3a is not supported.

While the main effect of learning and absorptive capacity is significant and positive, once the relationship is moderated by RQ, the path is changed to significant and negative. This exhibits the dark side effect of learning and absorptive capacity that is not mitigated by the presence of even high levels of RQ.

Though this hypothesis is not supported, this result concurs with literature which described the potentially one-sided nature of learning alliances, also called mercenary intentions (Hamel, 1991). However, other authors point out that there are negative effects or potential results from learning alliances, such as unintentional disclosure of information (Bresser, 1998). This result also agrees with Hamel (1991) and Dyer et al. (2008) who point out that, in some cases, learning is highly goal-driven or opportunistic, to the extent of reducing performance.

Though these results represent a boundary condition of the current formulation of SET in organizational studies, they are supported by the revisited tenets of SET, namely the concept of diminishing returns, fatigue, and comparison level (Blau, 1964; Emerson, 1976; Cropanzano and Mitchell, 2005). That is, if learning is the initial goal, as the knowledge gains remain the same over time; one or both partners may begin to feel they are not receiving the relationship benefits they were expecting. This result contributes to theory by supporting the newly exposed tenets of SET, discussed in this dissertation, and to literature by supporting the existence of a dark side effect of learning and absorptive capacity.

4.5.6 Hypothesis 3b

Hypothesis 3b looked at the moderated relationship between learning and absorptive capacity and the likelihood of relationship termination. Though the

relationship between the interaction term of relationship quality and learning/ absorptive capacity was significant (p=0.004), the path coefficient was positive (0.027). This indicates that at higher levels of relationship quality, there is a higher likelihood of relationship termination than at lower levels of relationship quality; the opposite effect of the hypothesized relationship. Hypothesis 3b is not supported.

However, of significant interest is the effect of the moderator, RQ, on the main effect. The main effect of learning and absorptive capacity on likelihood of relationship termination is non-significant. Once the moderator, RQ, is introduced, the relationship becomes significant and positive. This result exhibits the dark side effect of learning and absorptive capacity, in that even in the presence of high levels of RQ, this independent variable has an increasing effect on the likelihood of relationship termination.

The data analysis shows the opposite result from what was expected. However, like Hypothesis 3a, literature has described the potentially one-sided and problem-causing nature of learning alliances, also known as dark side effects (Hamel, 1991). Counter to Poppo et al, (2009), who indicated that deeper learning strengthens business relationships and makes it more difficult for partners to disengage or dissolve the relationship, this result concurs with Inkpen and Beamish (1997) which described the abnormally high percentage of relationships terminated in the case of learning alliances. Hamel (1991) also states that, in relationships where learning is a specific goal of the relationship, the relationship may be ended suddenly when on party achieves their learning objective.

The result of this hypothesis test represent a boundary condition for the current formulation of SET. SET's earlier tenets would also point out that, though a relationship was once based upon the mutual benefit of learning, the likelihood of relationship

termination increases inversely with the perception of value derived from the learning process (Blau, 1964; Thibaut and Kelly, 1959). This result contributes to theory by supporting the rediscovered tenets of SET of point of diminishing returns, fatigue and comparison level leading to feelings of dissatisfaction (Blau, 1964; Thibaut and Kelly, 1959; Homans, 1958). This result also contributes to literature by supporting the existence of the dark side effect of learning and likelihood of relationship termination.

4.5.7 Hypothesis 4a

Hypothesis 4a examined the moderated relationship between relational social capital and perceptions of relationship financial performance. The relationship, however, is non-significant (p=0.142), and the path coefficient is negative (-0.091). Hypothesis 4a is not supported.

The main effect of relational social capital on perceptions of relationship financial performance is also non-significant, indicating that relational social capital neither has a significant main effect, nor a significant moderating effect on the dependent variable. This result contradicts both the literature supporting the positive effect on performance of relational social capital, and the literature supporting and testing the dark side effect of relational social capital on performance.

4.5.8 Hypothesis 4b

Hypothesis 4b looks at the relationship between relational social capital and the likelihood of relationship termination. Though the relationship between the interaction term of relationship quality and relational social capital and the dependent variable is highly significant (p<0.001), the path coefficient is positive (0.41). This indicates that, in

this data set, at higher levels of relationship quality, there is a higher likelihood of relationship termination than at lower levels of relationship quality, when moderating the relational social capital- relationship termination linkage. Hypothesis 4b is not supported.

The main effects of relational social capital on likelihood of relationship termination are non-significant, indicating that this independent variable does not have an effect on the dependent variable. However, once the moderator, RQ, is introduced, the moderated effect becomes significant and positive. This indicates that, in the presence of RQ, relational social capital begins exhibiting an effect on the dependent variable, but it is positive, showing an amplifying effect on the likelihood of relationship termination. This result may be indicating the presence of the dark side effect of relational social capital, in that the presence of RQ does *not* mitigate an amplifying effect of relational social capital.

Though they hypothesized relationship is not supported, the results reveal a boundary condition of the current version of SET, and are supportive of the tenets of SET rediscovered in the literature by this dissertation; e.g. comparison levels leading to feelings of dissatisfaction, fatigue, and point of diminishing returns of relationship variables (Blau, 1964; Thibaut and Kelly, 1959; Homans, 1958). That is, it is possible that as relational social capital increases, there is a point of fatigue for the partner at which there is dissatisfaction, which may lead to an increase in the likelihood of relationship termination.

This result concurs with previous organizational literature concerned with the dark side effect of relational social capital. Organizational literature has repeatedly cautioned against the dark side effect of relationship variables (Adler and Kwon, 2002;

Granovetter, 1985; Inkpen and Tsang, 2005; Portes and Sensenbrenner, 1993). Lock et al. (1999) went as far as to say that high levels of relational social capital will lead to extreme performance disadvantage. Other authors report that social capital allowed the relationship to deteriorate, at an imperceptible rate, to an unrecoverable level. The result of Hypothesis 4b bears out that relational social capital increases the likelihood of relationship termination, thereby supporting the existence of the dark side effect of relational social capital. This result contributes to theory by supporting the rediscovered tenets of SET; and contributes to the literature by supporting the potential dark side effect of relational social capital in relation to likelihood of relationship termination.

4.5.9 Hypothesis 5a

Hypothesis 5a examined the relationship between reciprocity and perceptions of relationship financial performance. Though the relationship between the interaction term (reciprocity and relationship quality) is highly significant ($p<0.001$), the path coefficient is negative (-0.273). This indicates that at higher levels of relationship quality, there is a reduced perception of relationship financial performance, given a particular level of reciprocity. Hypothesis 5a is not supported.

The main effect of reciprocity on perceptions of relationship financial performance is significant and positive, showing a beneficial relationship between the two variables. However, once the moderator, RQ, is introduced, the relationship becomes significant, but negative, indicating a reduction in perception of relationship financial performance. This shows that RQ does not mitigate a negative relationship between reciprocity and perceptions of relationship financial performance, supporting the dark side effect of reciprocity.

Though this hypothesized relationship is not supported thereby indicating a boundary condition of SET, the results are supported by the earlier tenets of SET including the concept of fatigue, the point of diminishing returns in relationship variables and feelings of dissatisfaction with the relationship arising from an unsatisfied comparison level (Blau, 1964; Thibaut and Kelly, 1959; Homans, 1958). In this particular hypothesis, reciprocity, even when moderated by high relationship quality, is not increasing perceptions of relationship financial performance. This indicates that the positive effect which would be predicted by the current formulation of SET, which is focused on social obligations and its resulting mutual benefit, did not occur. This result reaffirms the relevance of these 'new' tenets of SET to organizational research.

The dark side effect of reciprocity arises from its potential consumption of relationship resources without a guarantee of a return on investment (Hansen, 1999; Lechner et al., 2010). High reciprocity instills a feeling of obligation which may be strong enough to reduce objective goals and performance objectives (Gimeno and Woo, 1996; Uzzi, 1997; Lechner et al., 2010). This dark side effect of reciprocity is evident in the results of this hypothesis test; thereby supporting the existence of a dark side effect of reciprocity on perceptions of relationship financial performance. This result contributes to theory by supporting the new tenets of SET; and contributes to literature by providing support for the dark side effect of reciprocity in relation to relationship financial performance.

4.5.10 Hypothesis 5b

Hypothesis 5b looks at the relationship between reciprocity and the likelihood of relationship termination. Though the relationship between the interaction term

(relationship quality and reciprocity) is highly significant (p<0.001), the path coefficient (0.113) is positive, indicating that at higher levels of relationship quality, there is an increase in the likelihood of relationship termination, all other things equal. This is the opposite result as hypothesized. Hypothesis 5b is not supported.

The main effect of reciprocity on likelihood of relationship termination is non-significant. However, once the moderator RQ is introduced, the relationship becomes significant, but positive. This is showing that at high levels of RQ, reciprocity has a significant amplifying effect on the likelihood of relationship termination. This result is indicative of the dark side effect of reciprocity.

Though this hypothesis is not supported indicating the existence of a boundary condition to the current formulation of SET, the results support the inclusion of the earlier tenets of SET, including the point of diminishing returns on efforts at improving relationship variables, fatigue in relationships, and a comparison level which leads to reduced satisfaction and may thereby increase the likelihood of relationship termination (Blau, 1964; Thibaut and Kelly, 1959; Homans, 1958). Though literature has not specifically proposed an inverse relationship between reciprocity and likelihood of relationship termination, this hypothesis test result supports the existence of a dark side effect of reciprocity on likelihood of relationship termination.

Table 28: Summary of Hypotheses Testing Results

Hypothesis	IV	DV	Main effects	Moderated effects	Support current SET?	Support dark side effect?
H1a	Relationship specific investment	Perceptions of relationship financial performance	Non-significant	Significant, positive	Yes	No
H1b	Relationship specific investment	Likelihood of relationship termination	Non-significant	Significant, negative	Yes	No
H2a	Long term orientaton	Perceptions of relationship financial performance	Significant, positive	Significant, positive but at half the size of the main effect	Yes	Mixed
H2b	Long term orientation	Likelihood of relationship termination	Significant, positive	Non-significant	No	Yes
H3a	Learning	Perceptions of relationship financial performance	Significant, positive	Significant, negative	No	Yes
H3b	Learning	Likelihood of relationship termination	Non-significant	Significant, positive	No	Yes
H4a	Social capital	Perceptions of relationship financial	Non-significant	Non-significant	No	No

		performance				
H4b	Social capital	Likelihood of relationship termination	Non-significant	Significant, positive	No	Yes
H5a	Reciprocity	Perceptions of relationship financial performance	Significant, positive	Significant, negative	No	Yes
H5b	Reciprocity	Likelihood of relationship termination	Non-significant	Significant, positive	No	Yes

The results of this hypothesis contribute to literature by supporting the existence of the dark side effect of reciprocity, by increasing the likelihood of relationship termination. The results also contribute to theory by revealing boundary conditions of the current version of SET in organizational research and supporting the revisited tenets of SET exposed by this dissertation: including comparison level, fatigue, and diminishing returns of higher levels of reciprocity in relation to likelihood of relationship financial performance.

4.5.11 Conclusion of Hypothesis Testing

In conclusion, RQ improved some of the relationship under study in this dissertation while not affecting others. These empirical tests have 1) confirmed the existence of boundary conditions for the current formulation of SET, 2) supported the existence of the dark side effect of some relationship variables, and 3) supported inclusion of the earlier concepts in SET.

Table 29: Hypothesis Testing Results

Hypothesis	Supported?
H1a: The relationship between relationship-specific investment and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.	Yes
H1b: The relationship between relationship-specific investment and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.	Yes
H2a: The relationship between long-term relationship orientation and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.	Yes
H2b: The relationship between long-term relationship orientation and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.	No, significant but opposite direction
H3a: The relationship between learning/ absorptive capacity and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.	No, significant but opposite direction
H3b: The relationship between learning/ absorptive capacity and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than	No, significant

for mature supply chain relationships for a high level of relationship quality.	but opposite direction
H4a: The relationship between social capital and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.	No, NS
H4b: The relationship between social capital and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.	No, significant but opposite direction
H5a: The relationship between reciprocity and relationship financial performance is stronger for mature supply chain relationships with a high level of relationship quality than for mature supply chain relationships for a low level of relationship quality.	No, significant but opposite direction
H5b: The relationship between reciprocity and likelihood of termination is stronger for mature supply chain relationships with a low level of relationship quality than for mature supply chain relationships for a high level of relationship quality.	No, significant but opposite direction

4.6 Post Hoc Testing

Though the hypotheses were tested using the interaction term between the moderator, relationship quality, and the independent variables; there is considerable academic interest in empirically verifying the mere existence of the dark side effect of relationship variables (Anderson and Jap, 2005). The main effects of the independent variables, when significant, were evaluated for their linearity in relation to the dependent variables to evaluate the existence of the dark side effect of relationship variables in this data set through main effects testing (See Table 27 for significant main effects in the full model). The significance levels and path coefficients calculated by PLS can be interpreted similarly to linear regression coefficients as a general trend (Kock, 2014). However, WarpPLS will fit a line either linear or curvilinear (termed 'warped') to minimize the residual errors (Kock, 2014). The dark side effect of relationship variables will cause them to have non-linear relationships to performance-related variables (Anderson and Jap, 2005). These potential non-linear relationships can be modeled using WarpPLS software; at the time of this writing, WarpPLS is the only software capable of estimating non-linear structural equation relationships (Kock, 2014).

Upon visual inspection, five of the relationships have main effects which exhibit non-linear relationships with the dependent variables of interest. See Table 29 for the paths exhibiting non-linear, or warped, relationships. One of the relationships was observed to be non-linear when tested in the full model: learning and perceptions of relationship financial performance; while the other four non-linear relationships were observed when testing one independent latent construct and one dependent variable. That is, the only significant warped relationship found in the full model is learning and

absorptive capacity and perceptions of relationship financial performance. However,

post-hoc testing of each independent variable individually with each dependent variable

reveals that some of the variables, when tested alone, exhibit a warped relationship,

indicating the presence of the dark side effect of that variable on the dependent variable.

Due to the strong interest in empirically detecting the existence of the dark side effect,

these tests were conducted in a post-hoc manner.

Table 30: Non-linear Main Effects

Model	Independent variable	Dependent variable
Full model	Learning and absorptive capacity	Perceptions of relationship financial performance
Individual model	Relational social capital	Perceptions of relationship financial performance
Individual model	Relational social capital	Likelihood of relationship termination
Individual model	Relationship specific investment	Perceptions of relationship financial performance
Individual model	Relationship specific investment	Likelihood of relationship termination

WarpPLS models these nonlinear relationships by determining the line, whether

straight or curved, which minimizes the standard error of all points in the data (Kock,

2015). When a curvilinear relationship is present, this indicates that there may be a

point of diminishing returns, as is suggested by both the dark side effect literature and

the added tenets of SET.

Figure 7 shows the main effects of learning and absorptive capacity on

perceptions of relationship financial performance. There is a very clear nonlinear

relationship between the two variables, with a point of diminishing returns occurring in

the middle portion of the chart. This indicates that, with relationships involving learning or absorptive capacity, there is a point at which an incremental increase in learning or absorptive capacity does not create a proportional gain in perceptions of relationship financial performance. This warped relationship does not explain why H3a (the moderated relationship between learning and absorptive capacity and the perception of relationship financial performance, is non-significant. This graph shows only the main effect of the independent variable upon this dependent variable.

This conclusion supports the existence of a point of diminishing returns for learning and absorptive capacity and perceptions of relationship performance. Though this does not necessarily support the dark side effect, the graph is suggestive of a point at which the expected return on the relationship variable is not attained, which is akin to the dark side effect (Anderson and Jap, 2005).

4.6.1 Testing individual constructs with one dependent variable

Though only the main effects discussed in the previous section were significant in the full model, other main effects were significant when tested individually with one dependent variable. Some of these relationships exhibited a curvilinear pattern, indicative of the dark side effect of variables. These curvilinear relationships resulted from relationship social capital and relationship specific investment. For example, in Figure 8, the point of diminishing returns becomes apparent near the point 0 of social capital on the x-axis. (Note: The variables are standardized.) Though general trend of the relationship is positive, a point of diminishing returns in the relationship is revealed. This relationship suggests there is a point at

Figure 7: Main Effects of Learning and Absorptive Capacity on Perceptions of
Relationship Financial Performance
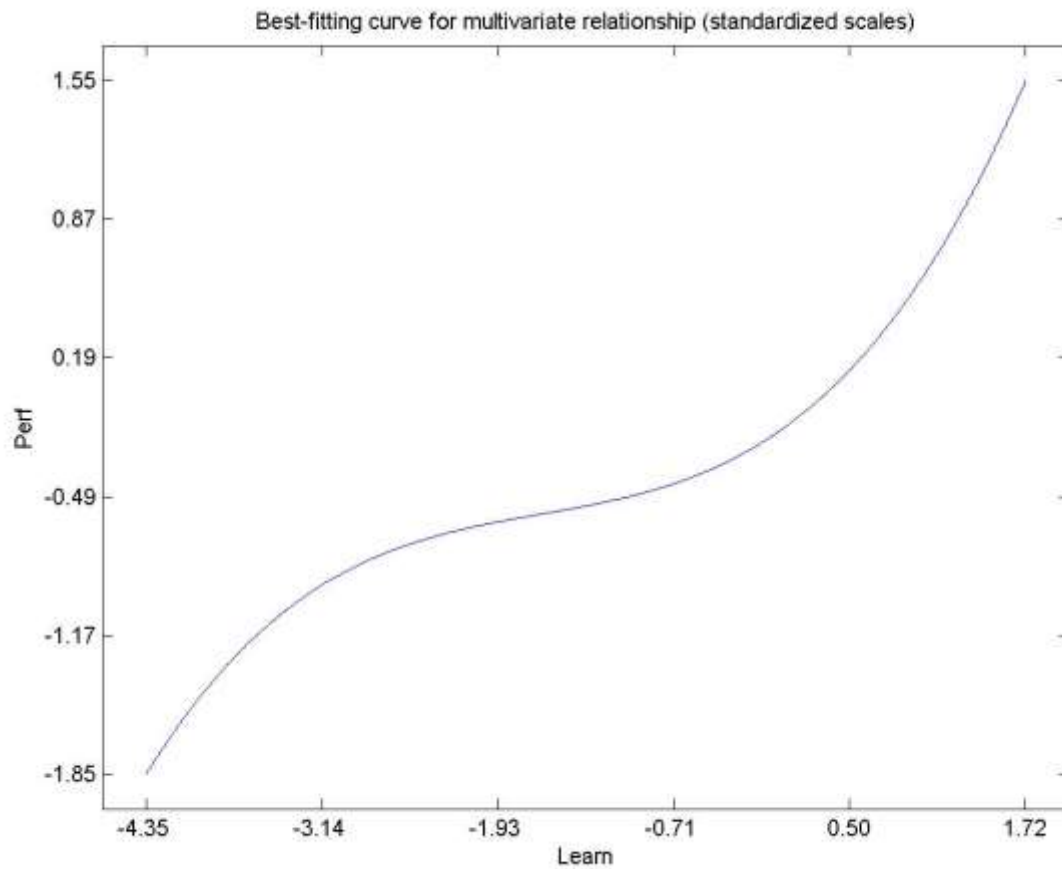
which the increase in relational social capital does not achieve the expected increase in

perceptions of relationship financial performance. This result again reinforces the

boundary conditions of SET, while supporting both the existence of the dark side effect,

and the earlier conceptualizations of SET.

Figure 8: Main Effect of Relationship Social Capital and Perceptions of Relationship
Financial Performance
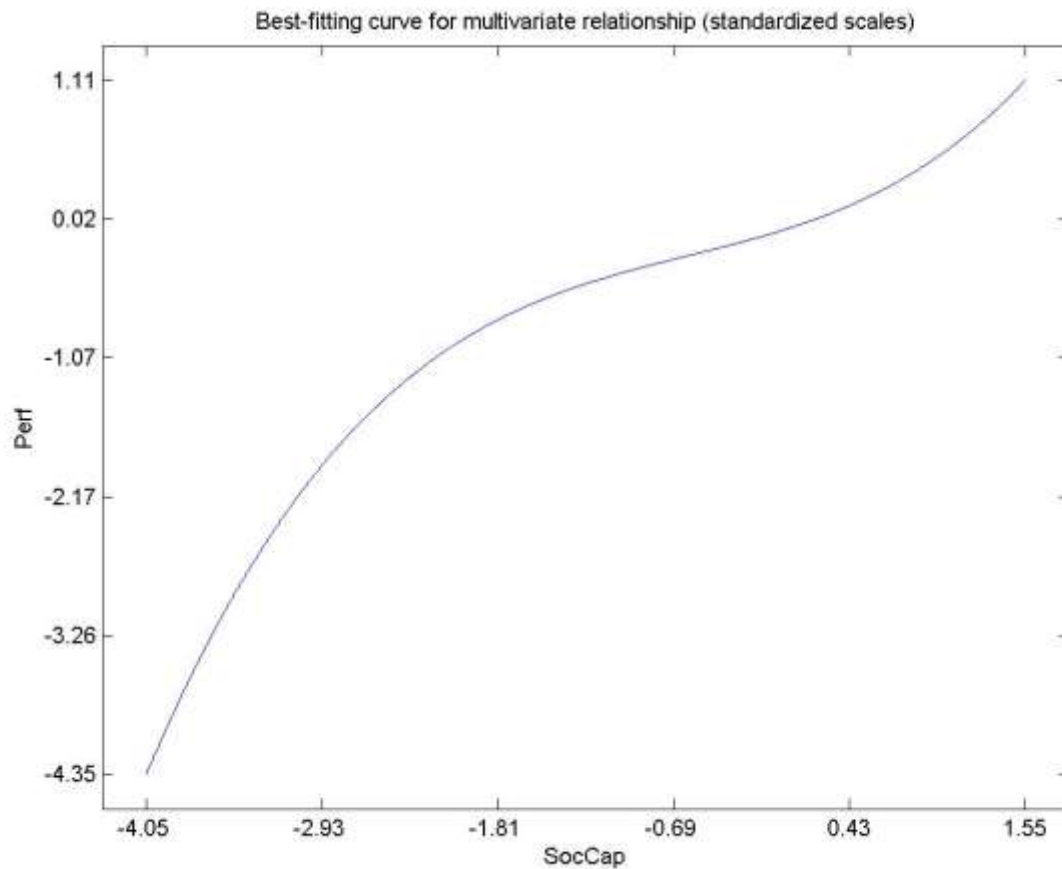
Figure 9 shows the main effect of relationship social capital and the likelihood of

relationship termination. As was seen in Figure 8, the general trend is negative,

indicating that in general terms, as relational social capital increases, the likelihood of

relationship termination decreases. However, there is a flattening of the curve around

the point 0 on the x-axis of relational social capital, indicating a point of reduced

effectiveness of relational social capital in reducing the likelihood of relationship

termination.

Figure 9: Main Effect of Relationship Social Capital and Likelihood of Relationship Termination

Best-fitting curve for multivariate relationship (standardized scales)
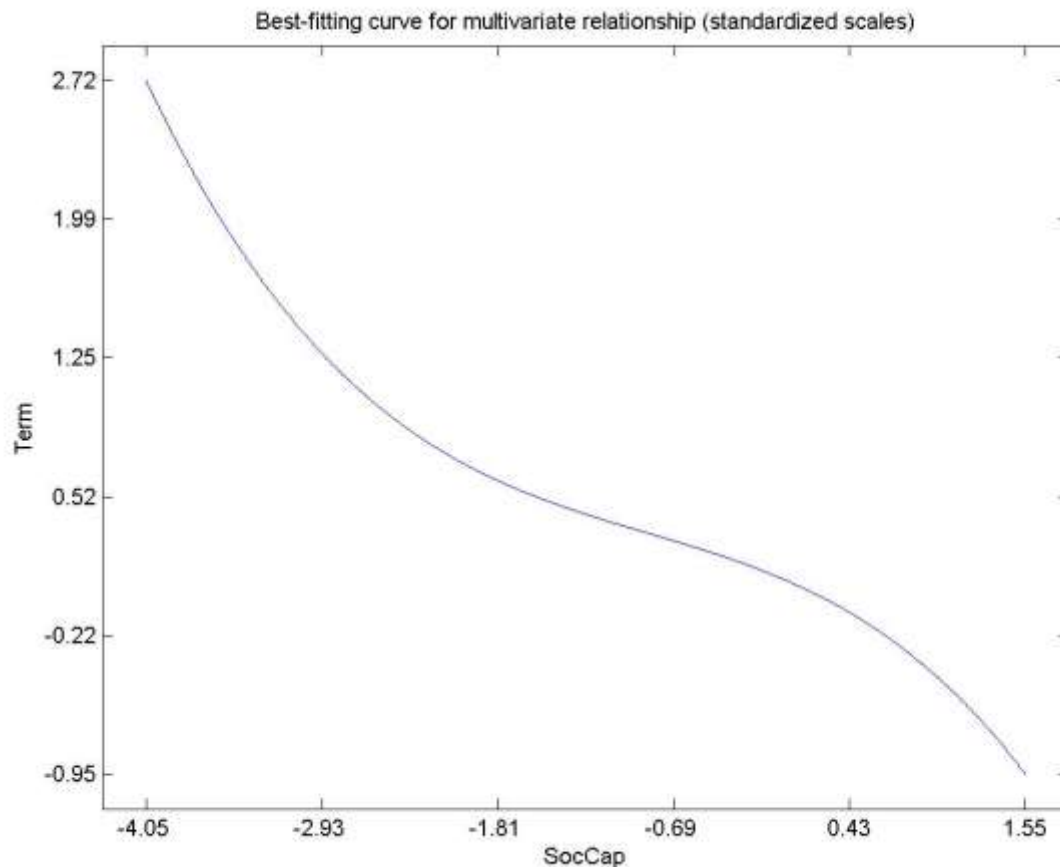
Figure 10 shows the main effect of relationship specific investment on perceptions of relationship financial performance. As was evident in some of the previous figures, there is a considerable curve visible in the relationship between the two variables. From approximately -1.3 to roughly 0.5 on the standardized variable axes, there is nearly no improvement in performance for the increased level of relationship specific investment. Figure 11 shows a similar curvilinear relationship between relationship specific investment and likelihood of relationship termination. Though they are in different general trends, both curves are indicative of a point of diminishing returns of relationship specific investment on perceptions of relationship financial

performance; thereby supporting the facets of SET which are newly emphasized in this

dissertation.

Figure 10: Main Effect of Relationship Specific Investment and Perceptions of
Relationship Financial Performance

Best-fitting curve for multivariate relationship (standardized scales)
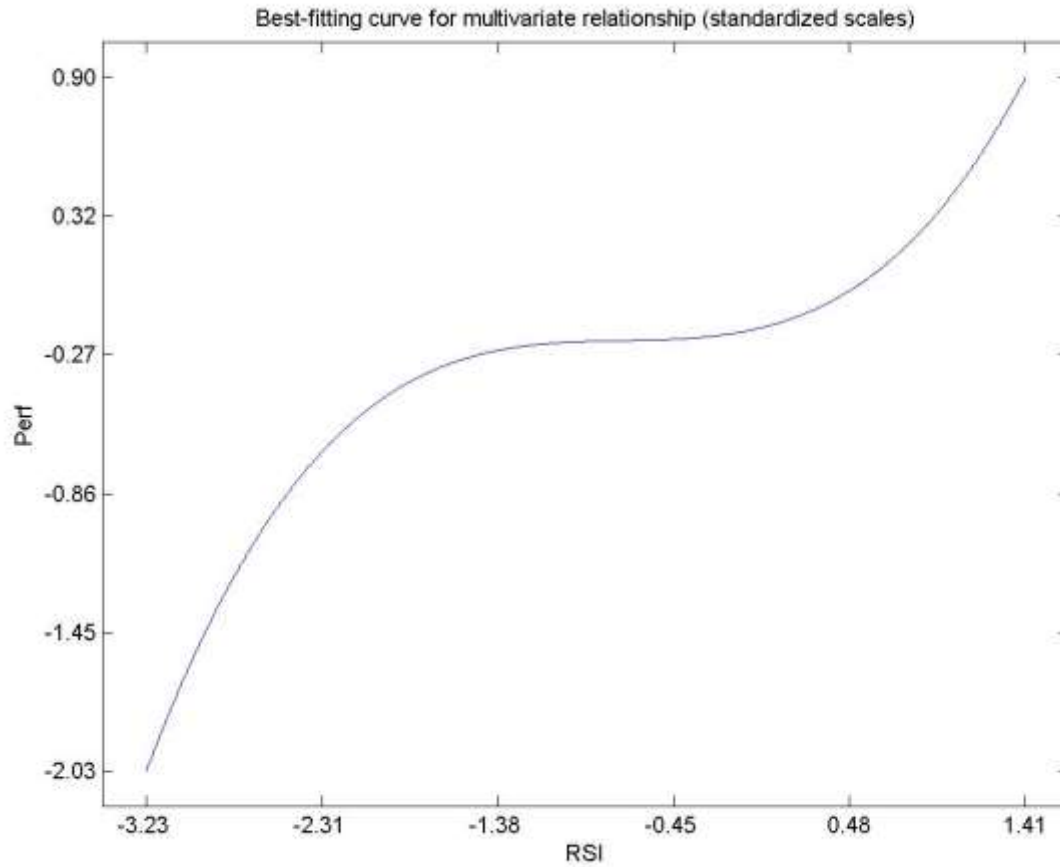
Figure 11: Main Effect of Relationship Specific Investment and Likelihood of
Relationship Termination

Best-fitting curve for multivariate relationship (standardized scales)
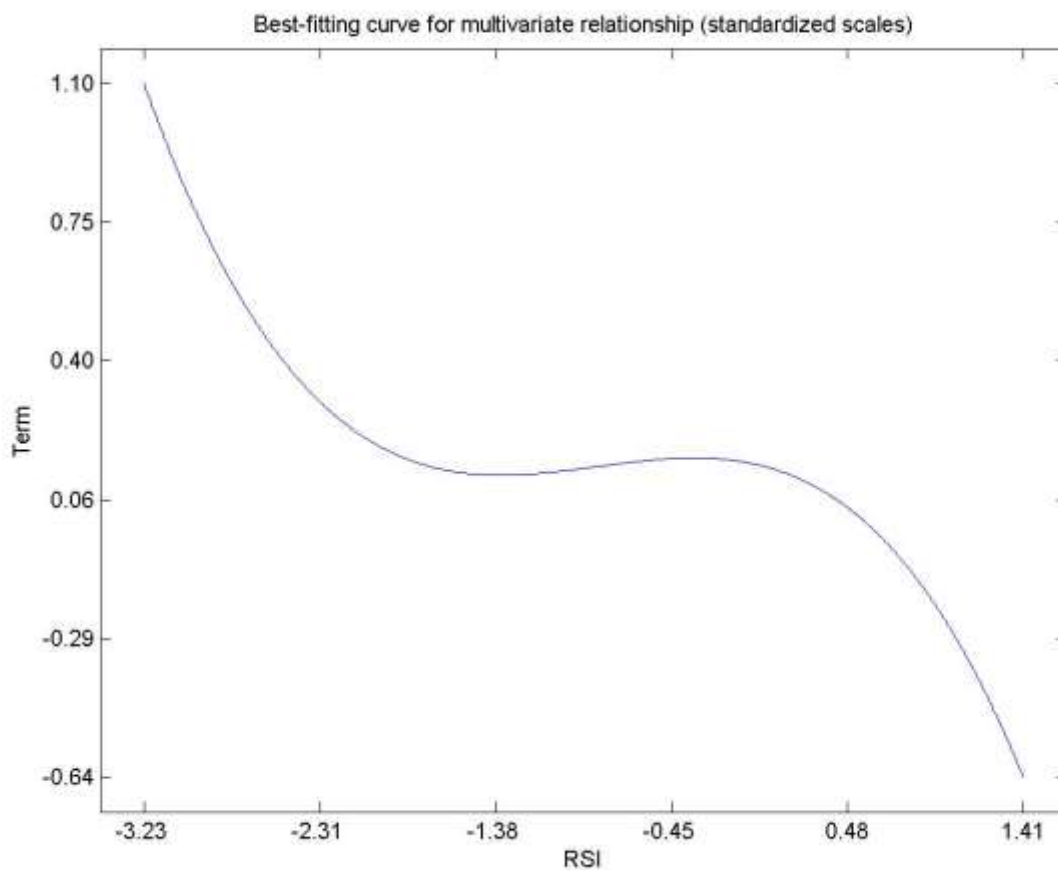
4.7 Conclusion

In conclusion, this research confirmed three hypotheses (H1a, H1b, and H2a).
However, the unsupported hypotheses also inform the topic of interest, the dark side
effect of relationship variables, and lend support to the inclusion of the tenets of SET
brought forth in this dissertation. The full model showed excellent reliability,
convergent validity and discriminant validity; and face validity was established with a
pretest, theoretical foundation, and considerable literature to develop the constructs
and arguments. There are numerous theoretical contributions in the findings of this
study, which will be fully described in Chapter 5. Post-hoc testing was conducted to

determine if any variables which may not have been significant in the interaction effect, may have non-linear effects on the dependent variables, which would be indicative of a point of diminishing returns, or in some cases, the dark side effect itself. The post-hoc testing indicated that learning, relational social capital, and relationship specific investment exhibit a point of diminishing returns which suggests the dark side effect, concurring with the newly emphasized facets of SET brought forth by this dissertation.

5.0 Discussion, conclusion and future research

5.1 Discussion

Social Exchange Theory (SET) has been long used to support the positive effect of relationship variables on various performance measures (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958). However, literature over decades has pointed out, and in some cases empirically supported, mixed results, non-significant results, or significant negative results. The stream of literature which predicts negative or no effect of these relationship variables on performance variables has been termed the 'dark side effect' literature (Anderson and Jap, 2005). There have been very few empirical studies evaluating or supporting the dark side effect. This dissertation contributes to this literature stream by empirically testing the effect of five independent variables on a performance measure and a relationship continuity measure.

SET in management literature has included the norm of reciprocity and the concept of social obligations created by iterative interactions which strengthen the relationship and enhance performance of both parties (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958). However, when revisiting the foundational SET works, several theoretical tenets were discovered that support the existence of dark side variables (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958) and upon which this dissertation was founded. These theoretical propositions include the concept of diminishing returns of increased relationship variables, fatigue and satiation, and comparison level (Blau, 1964; Emerson, 1962; 1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958).

The findings supported three of ten hypotheses (H1a, H1b, and H2a), and lead to the rejection of the other seven hypotheses. However, the rejection of H2b through H5b shows the boundary conditions of the current formulation of SET and supports the existence of the dark side effect of those independent relationship variables and those tenets of SET which are brought to light in this dissertation. This dissertation is one of the first empirical tests of the dark side effect of relationship variables. The results reaffirm that the resurrected concepts of SET are relevant to business relationships today.

They hypotheses that were supported indicate that high levels of RQ can help keep the dark side effect of relationship variables at bay. However, the hypotheses which were not supported indicate that there are some relationship variables which, regardless of the level of RQ, there is still the potential for diminishing returns, or the dark side effect of those variables.

There are explicit contributions to theory including identifying boundary conditions of the current formulation of SET; supporting earlier conceptualizations of SET; replicating previous empirical work; extending previous empirical work; and adding a newly-tested dark side effect: relationship specific investment. The contribution to practice includes providing knowledge and some guidance in maintaining the value of mature supply chain relationships.

Table 31: Specific Contributions of this Dissertation

Contribution	Result
Theoretical	Identify the boundary conditions of the current formulation of SET
	Support the earlier concepts of SET, which are supportive of the dark side effect
	Replication: Villena, Revilla and Choi, 2011
	Extension: McFadyen and Cannella, 2004
	Extension: Hamel, 1991
	Extension: Grayson and Ambler, 1999
	Extension: Gu, Hung and Tse, 2008
	New test: the dark side effect of relationship-specific investment
Managerial	Providing guidance in maintaining value of mature supply chain relationships

5.2 Theoretical implications and contribution

Both the hypothesis results and the post-hoc results support the tenets of SET.

SET, even in its current state, would support that higher levels of RQ would improve a

relationship and reduce its chances of ending prematurely (Blau, 1964; Emerson, 1962;

1976; Gouldner, 1960; Thibaut and Kelly, 1959; Homans, 1958), which supported the

results of H1a, H1b and H2a.

This dissertation has revealed boundary conditions of SET, at which point either

relationship variables or RQ as a moderator, was insufficient to prevent the negative,

diminishing returns, or dark side effect from resulting. This dissertation has also

provided empirical support for the existence of the dark side effect, or curvilinear effect

of some relationship variables on the dependent variables of interest. Finally, this

dissertation has provided empirical support for reincorporating the earlier theoretical

concepts in SET studies in organizational behavior, which show a more realistic, multidimensional view of supply chain relationships. Table 27 shows which hypotheses and variables support the dark side effect, and includes long term orientation, learning and absorptive capacity, relational social capital, and reciprocity.

The post-hoc testing, in particular, supports the neglected aspects of SET that this dissertation is bringing to light. This dissertation is extending SET by bringing in previously-neglected parts of the theory. When SET was brought into the organizational and management research, several parts of the theory were left behind, such as comparison level, fatigue and satiation. These parts of SET support the existence of the dark side effect of variables, by discussing the point of diminishing returns, or diminished marginal utility. These new aspects are supported in this dissertation by the post hoc testing in particular.

Theh boundary conditions of the current formulation of SET which are revealed in this study are that high levels of relationship quality do not always, or even often, improve the perceptions of relationship performance or the likelihood of relationship termination, and three of the five relationship variables tested reveal that higher levels of the relationship variable itself, and or relationship quality do not improve the relationship outcomes. These outcomes indicate that SET does not provide explanatory power for the results in these three variables. This result supports the inclusion of the earlier theoretical constructs of SET, supporting the negative side of relationships and the dark side effect.

The Political Economy Framework provides a general framework for organizational research including supply chain relationship research. The structure created by the Framework allows researchers to focus efforts on less researched areas,

such as the dark side effect of relationship variables. SET fits within the Political

Economy Framework with and without its boundary conditions revealed in this study

and fit very well into the exchange construct, as described in the literature review

section.

Though this dissertation is testing boundary conditions of the current

formulation of SET, the study also contributes to theory by testing the revisited aspects

of SET (Goldsby et al., 2013; Knemeyer and Naylor, 2011). This study contributes to

literature by answering calls for theory testing in the field of supply chain management

and business relationships, particularly negative outcomes of supply chain relationships

(Carter, 2011; Mentzer et al., 2001; Mentzer and Kahn, 1995; Mitrega and Zolkiewski,

2012) and by empirically testing the dark side effect of relationship variables (Villena et

al., 2005). An additional contribution of this dissertation is testing causes of

relationship termination, which has been lacking (Anderson and Jap, 2005; Fang et al.,

2011).

This dissertation also contributes to supply chain management literature by

extending existing empirical work on social capital (McFadyen and Cannella, 2004);

learning (Hamel, 1991); long term orientation (Grayson and Ambler, 1999); and

reciprocity (Gu, Hung and Tse, 2008). A new contribution of this study is the testing of

the dark side effect of relationship variables on perceptions of relationship financial

performance and likelihood of relationship termination.

Table 32: Overall Research Contribution

Issues	Why needed?	This study
Imbalanced theory development and testing in business research (focused on positive) (Mitrega and Zolkiewski, 2012)	Possible negative effects of relationships are neglected in research	Investigates the dark side effects of relationship variables
Mixed results of social capital relationship to performance (Villena, Revilla and Choi, 2011; McFadyen and Cannella, 2004)	Continual promotion of social capital development as a means of improving performance; must be tempered with a balanced view of the potential results of increased social capital	Empirically studies the relationship between relational social capital and perceptions of relationship financial performance and likelihood of relationship termination, moderated by relationship quality
Extending conceptual and qualitative work on relationship variables (Hamel, 1991; Grayson and Ambler, 1999; Gu, Hung and Tse, 2008)	Overly positive focus on studies of relationship variables	Extends studies on relationship variables (social capital, learning, long term orientation, and reciprocity) and adds a new variable: relationship specific investment
Need to discover causes of supply chain partnership failure (Adler and Kwon, 2002; Autry and Griffis, 2008)	To assist managers in best developing supply chain relationships	Provides empirical evidence from nearly 200 companies on the effects of five relationship variables on relationship termination and performance

5.3 Managerial implications

The results support the previous literature which said that blindly recommending increasing relational variables may be unfounded and may not make any gains

whatsoever (Adler and Kwon, 2002; Autry and Griffis, 2008; Fang et al., 2011; Landolt and Portes, 1996; Villena et al., 2011). Relationship specific investment showed an amplifying effect on perceptions of relationship financial performance and a diminishing effect on likelihood of relationship termination. Relationship specific investments represent a shared risk in the relationship. Shared risk is a fundamental aspect of business operation and success, as both parties, together, may fail or succeed. When two entities share a common risk, as is the case with relationship specific investments, there may be a buffering effect in which two different positions are brought to bear on tactical and strategic decisions which are involved in the perception of long- and short- term financial success. An organic self-correction process takes place which may not occur when the risk is carried by just one partner. This knowledge contributes confidence to managers in the positive effect expected when investing in relationship specific investments, and can contribute faith in the likely beneficial results of doing so.

Long term orientation showed an amplifying effect on perceptions of relationship financial performance. Long term orientation creates a strategic business environment that sees past the volatile nature of short-term results. Short-term success or failure can result from a variety of market and operations conditions beyond the control or predictive capabilities of managers. A long term orientation encourages corrective actions and strategic responses that have a greater probability of yielding results beyond the short-term expectation.

The results bear out, however, that there is a great risk to investing in increased relationship variables and that there is both a dark side effect, and a point of diminishing returns for these relationship variables. Increasing investment to strengthen a relationship must be done with caution, and with an understanding that

there may be a point at which the investment yields no benefit and that it is possible the relationship may end regardless. The benefit of RQ is also supported in this study, particularly in relationship specific investment and long term relationship orientation. Managers can be aware of the ongoing beneficial nature of maintaining high levels of RQ, though simultaneously be aware that high levels of RQ are not always enough to mitigate the dark side effect of relationship variables.

However, this is a great opportunity! According to Ernst and Bamford (2005), stability in a relationship is not always the best option for performance. 75% of the executives surveyed in their study said their companies do not often evaluate their business relationships for performance levels or restructuring, which, according to the authors could save up to 75% of business relationships. Even though the relationship variables under study often contribute to reduced perceptions of relationship financial performance and an increase in the likelihood of relationship termination, this information can spur companies to regularly reevaluate and improve their relationships and alliances.

An example of the dark side effect of social relational capital and its remedy was reported by a marketing agency: Scott Elser, who worked in a marketing agency, reported that when he was first made to be specific client's counterpart, he initially found that the previous relationship had been extremely close which appeared to convey benefit (Elser, 2014). His firm was strongly focused on keeping the client happy and his firm had even become "an extension of the client's team" (Elser, 2014). However, after a brief time as the client's counterpart, Scott was told by the client's CMO that the contract was to be put out to review and possibly offered to another marketing agency

(Elser, 2014). This issue is illustrative of the dark side of social relational capital and its ability to increase the likelihood of relationship termination.

Scott wondered how such a close business and personal relationship, in other words, a relationship with high social relational capital, could be falling apart (Elser, 2014). He reported that a large part of the problem was that representatives of his firm were simply trying to keep the client happy and not pushing them to become better, and not contributing true forces for improvement and that "healthy tension, innovation, and reinvention" were all missing (Elser, 2014). This illustrates the concept pointed out in the literature review of this dissertation that high levels of social relational capital may lead to complacency or a lack of objectivity in decision making. However, there are solutions recommended by professionals.

Scott wrote that it was easy to fix this situation, even though many of the individuals involved in these relationships may have felt uncomfortable with the effort (Elser, 2014). His recommendation was that each and every decision made between the marketing agency and the client be deeply explored to evaluate its value, regardless of the personal relationships of those involved in the decision (Elser, 2014). Scott also recommends that the best time to toughly evaluate these types of relationships is when they are going well (Elser, 2014).

5.4 Contribution

This study makes contributions to literature, theory, and methodology. In terms of literature, this study supports the dark side effect of the following variables, in that the relationship between these independent and dependent variables was nonlinear, and show a point of diminishing returns for performance and likelihood of relationship

termination. The hypotheses which were supported also lend evidence to the positive effects of SET. Relationship specific investment, at high levels of relationship quality, lead to increased perceptions of relationship financial performance. Hypothesis 1b shows that relationship specific investment, at high levels of relationship quality, reduce the likelihood of relationship termination. Finally, long term orientation, at high levels of relationship quality, increase the perceptions of relationship financial performance. These results support the positive aspects of the current conceptualization of SET.

However, the hypotheses which were not supported lend evidence to the dark side effect theoretical constructs of SET which are brought to light in this dissertation. That is, the concepts of diminishing marginal utility, fatigue, satiation, and comparison levels leading to reduced satisfaction, are supported by the negative effects of the independent variables upon the dependent variables of this study.

This dissertation also methodologically contributes by shedding light on a recent software package, WarpPLS 5.0, which can model non-linear relationships. Non-linear relationships are common in behavioral research, yet structural equation modeling software packages have not been capable of modeling these relationships and instead have been forcing the estimates into linear relationships regardless of their actual proclivities (Kock, 2015). WarpPLS 5.0 explicitly identifies non-linear relationships and calculates their multivariate coefficients taking the curvilinear relationship into account (Kock, 2015).

5.5 Research limitations

There are limitations to any study of any type, and this dissertation is no different. The primary limitations of this particular dissertation are the non-

representative sample and the high number of non-completes for the survey. However, there is a trade-off between the number of variables which can be studied, and the length of the survey, which is directly proportional to the number of respondents who end their survey before it is complete. The non-representative sample was used to increase the response rate, since the researcher has worked with the same population several times in the past and had a high chance of reaching the population of interest (managers involved in purchasing or providing logistics services) at the response rate required to perform the analysis.

5.6 Future research opportunities

Future study will include a sequential qualitative study to evaluate the results of this paper; e.g. how realistic is the problem of the dark side effect of relationship variables? What are the practitioners' proposed ways to deal with it? What do they see as the main problem related to dark side relationship variables? What is their experience in point of diminishing returns with relationship variables? How can they tell when they are approaching this point of diminishing returns, or even the onset of the dark side effect of relationship variables? There is also value in determining any other relationship variables which should be included in a future study, from the practitioner point of view.

Future study will also include evaluating the dark side effect alongside the concept of relational power to evaluate how power imbalance may change the effects of the dark side variables. This study will be replicated with the addition of other variables which have been suggested in conceptual literature to have a dark side effect including embeddedness (Uzzi, 1997; Lechner et al., 2010), network centrality (Uzzi, 1997;

Lechner et al., 2010), information sharing (Grover et al., 2006), deep relationships (Mitrega and Zolkiewski, 2012), and trust (Kusari et al., 2013).

Previous empirical work found that embeddedness and network centrality exhibited a non-linear relationship to economic performance (Uzzi, 1997; Lechner et al., 2010). While no previous empirical work was located, conceptual work and content analysis suggest a dark side effect of high levels of information sharing (Grover et al., 2006). Qualitative empirical work identified dark side effects of deep relationships (Mitrega and Zolkiewski, 2012), while a strongly supported beneficial variable, trust, however, in one empirical study, there was an inverted relationship between trust and performance and satisfaction (Kusari et al., 2013). Particularly due to the mixed results and the strong conceptual underpinnings of these variables, they are good candidates for further study on dark side effect of relationship variables.

5.7 Conclusion

In conclusion, this test of the dark side effect of relationship variables has revealed boundary conditions of a well-regarded theory in organizational and supply chain research, SET, while simultaneously providing support for earlier concepts from the theory which were neglected once the theory was pulled from social psychology into the world or organizational research, namely the point of diminishing returns, fatigue and satiation of relationship variables. This study also provides considerable support for the existence of the dark side effect of relationship variables: 7 of the 10 hypotheses supported the existence of the dark side effect; while 3 of the hypotheses show support for the current formulation of SET. The study considerably contributes to theory by advancing literature and testing theory, within the framework of the Political Economy

Framework, and contributes to practice by clarifying somewhat the mixed effect of high

levels of RQ on relationship performance.

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Appendix A: Survey instrument

Evaluation of Mature Business Relationships

Thank you so much for clicking on the link for the business relationship survey! This survey is specifically studying mature business relationships.

Mature business relationships are typically mutually-dependent relationships that often have relationship-specific investments and a willingness to take risks for mutual benefit. This mature relationship is often an older relationship with a history of satisfactory interaction.

While answering all the following questions, please think of an existing business relationship that is a mature relationship and has many of the above criteria.

Please click on the following link to read the full informed consent document. Please click Yes below if you consent to participating in this anonymous survey, or No if you do not consent to participating in this anonymous survey.

Informed consent

- ○ Yes
- ○ No

How important is this specific partner to your company?

- ○ Not at all Important
- ○ Very Unimportant
- ○ Neither Important nor Unimportant
- ○ Very Important
- ○ Extremely Important

Would you characterize this specific relationship as a mature relationship?

- ○ Yes
- ○ No

Keeping in mind this specific business relationship, please indicate the extent to which you agree that the relationship between your company and this partner is characterized by:

3/24/2015   Qualtrics Survey Software

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
A close personal interaction.	○	○	○	○	○
Mutual respect.	○	○	○	○	○
Mutual trust.	○	○	○	○	○
Personal friendship.	○	○	○	○	○
Reciprocity.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We believe that over the long run, our relationship with this partner will be profitable.	○	○	○	○	○
Maintaining a long term relationship with this partner is important to us.	○	○	○	○	○
We focus on long term goals in this relationship.	○	○	○	○	○
We are willing to make sacrifices to help this partner from time to time.	○	○	○	○	○
We are only concerned with our own outcomes in this relationship.	○	○	○	○	○
We expect this partner to be working with us for a long time.	○	○	○	○	○
Any concessions we make to help out this partner will even out in the long run.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We have invested substantially in personnel dedicated to this relationship.	○	○	○	○	○
We have provided proprietary expertise or technology to this partner.	○	○	○	○	○
We have dedicated significant investments (e.g. equipment or support systems) to this relationship.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

Working with this specific partner, we have co-developed processes for:

Qualtrics Survey Software

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Acquiring knowledge about new products or services in our industry.	○	○	○	○	○
Generating new knowledge together from existing knowledge.	○	○	○	○	○
Collaborating on mutually beneficial projects.	○	○	○	○	○
Protecting knowledge from inappropriate use outside the relationship.	○	○	○	○	○
Encouraging the protection of each other's knowledge.	○	○	○	○	○
Restricting access to some internal sources of knowledge.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We expect the relationship with this partner to last a long time.	○	○	○	○	○
It is likely that our relationship with this partner will be terminated within the next two years.	○	○	○	○	○
Our firm has been successful in getting this partner to commit to long term cooperation.	○	○	○	○	○
This partner is hesitant to come to any long term agreements.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We see a lot of future growth potential with this partner.	○	○	○	○	○
The amount of business we have with this partner is growing.	○	○	○	○	○
The future viability of this relationship does not look good.	○	○	○	○	○
Investments of time and money in this relationship have been worthwhile.	○	○	○	○	○
Investments we have made in this relationship have made our business operations more cost effective and efficient.	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Returns we have made from this relationship have enabled us to reinvest and expand our business with this partner.	○	○	○	○	○
The cost of servicing this partner is low given the amount of business it generates.	○	○	○	○	○
We have been required to make investments in this relationship that have cost us a lot of money but offer little benefit to our own operations.	○	○	○	○	○
We are satisfied with the level of profits we achieve with this partner.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
When making important decisions, this partner is concerned about our welfare.	○	○	○	○	○
We can rely on this partner handling critical information about our company confidentially.	○	○	○	○	○
When we have an important requirement, we can depend on this partner's support.	○	○	○	○	○
We are convinced that this partner performs its tasks professionally.	○	○	○	○	○
We can count on this partner's promises made to our firm.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We are patient with this partner when they make mistakes that cause us trouble.	○	○	○	○	○
We are willing to dedicate whatever people and resources it takes to grow sales for this partner.	○	○	○	○	○
We are quite willing to make long-term investments in this partner.	○	○	○	○	○
We are NOT continually on the lookout for another partner to replace this partner.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

My firm is satisfied with this partner in terms of:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Coordination of activities.	○	○	○	○	○
Level of commitment.	○	○	○	○	○
Level of information sharing.	○	○	○	○	○
Management of activities.	○	○	○	○	○

Keeping in mind this specific business relationship, please indicate the extent to which you agree with the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
We are willing to help and share information with this partner when they need it.	○	○	○	○	○
When this partner needs help, we are willing to assist them even if it may cost us time and effort.	○	○	○	○	○
When we ask this partner for help, we think they will help us.	○	○	○	○	○
Even if this partner, who we have helped may not help us in return, we believe they will in the future.	○	○	○	○	○

To what extent do you agree with the following statement?

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
At my company, we make extensive use of statistical techniques to reduce variance in our business volume.	○	○	○	○	○

Please choose your general job title from the following list.

[▼]

How long have you held this position?

○ Less than one year

○ Between 1 and 5 years

○ Between 5 and 10 years

○ Between 10 and 15 years

More than 15 years

In what industry category would this partner belong in?

[▼]

How long have you been with this company?

○ Less than one year

○ Between 1 and 5 years

○ Between 5 and 10 years

○ Between 10 and 15 years

○ More than 15 years

Please choose the approximate annual revenue of your company.

○ Less than $100,000

○ Between $100,000 and $500,000

○ Between $500,000 and $1,000,000

○ Between $1,000,000 and $2,000,000

○ Above $2,000,000

Please choose the number of employees in your company.

○ Less than 50

○ Between 50 and 100

○ Between 100 and 200

○ Between 200 and 500

○ More than 500

What is your age?

○ Less than 30

○ Between 30 and 40

○ Between 40 and 50

○ Between 50 and 60

○ Between 60 and 70

○ Other

What is your gender?

○ Male

○ Female

○ Prefer not to answer

In what industry category does your company operate?

[▼]

Appendix B: Informed Consent

Q Previewing Survey   ↩ Restart Survey   ⚙ ˅   🔖 Place Bookmark   ˅   ▯

INFORMED CONSENT

1. My name is Heather Monteiro, a PhD candidate at Georgia Southern University. I am conducting this research to fulfill requirements for my dissertation titled WHEN GOOD BUSINESS RELATIONSHIPS GO BAD: A QUANTITATIVE ANALYSIS OF DARK-SIDE VARIABLES IN MATURE SUPPLY CHAIN RELATIONSHIPS.

2. The purpose of this research is to quantitatively test causes of the deterioration of mature business relationships.

3. Participation in this research will include completion of an anonymous online survey.

4. There is a small risk of fatigue in filling out the survey or a feeling of discomfort due to answering questions about sensitive issues.

5. The benefits to participants include receiving a professional summary of the results, which will help guide business practice in maintaining mature business relationships. The benefits to the business community include a deeper understanding of why some mature business relationships deteriorate and research-based recommendations on preventing this situation.

6. The online survey will take less than 15 minutes.

7. The data will be available to the primary investigator (Heather Monteiro) and the primary investigator's faculty advisor (Dr. Jacqueline Eastman). No identifying information will be collected. De-identified or coded data from this study may be placed in a publically available repository for study validation and further research. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

8. Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Office of Research Services and Sponsored Programs at 912-478-0843.

9. As compensation for participating in this study, the primary investigator will provide a professional summary of the results with managerial implications to the respondents.

10. Participation is voluntary; you may end your participation at any time by not submitting the survey. You do not have to answer any questions you don't want to answer.

11. There is no penalty for deciding not to participate in the study or for ending participation before submitting the survey. If a participant chooses not to complete or submit the survey, the professional summary report will not be made available to them.

12. You must be 18 years of age or older to consent to participate in this research study. If you consent to participate in this research study and to the terms above, please click "YES."

You will be given a copy of this consent form to keep for your records. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H_____.

Title of Project: WHEN GOOD BUSINESS RELATIONSHIPS GO BAD: A QUANTITATIVE ANALYSIS OF DARK-SIDE VARIABLES IN MATURE SUPPLY CHAIN RELATIONSHIPS

Principal Investigator: (Heather Monteiro, Georgia Southern University Department of Supply Chain Management, P.O. Box 8154, Statesboro, GA 30460, 912-478-1498, heather_L_monteiro@georgiasouthern.edu)

Faculty Advisor: (Dr. Jacqueline Eastman, Georgia Southern University, Statesboro, GA 30460, 912-478-1870, jeastman@georgiasouthern.edu)

○ Yes

○ No

                           << | >>

Previewing Survey   Restart Survey   ⚙ ⌄   🔖 Place Bookmark   ⌄   ▊

INFORMED CONSENT

1. My name is Heather Monteiro, a PhD candidate at Georgia Southern University. I am conducting this research to fulfill requirements for my dissertation titled WHEN GOOD BUSINESS RELATIONSHIPS GO BAD: A QUANTITATIVE ANALYSIS OF DARK-SIDE VARIABLES IN MATURE SUPPLY CHAIN RELATIONSHIPS.

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○ Yes
○ No

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