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**A Comparative Econometric Analysis of South African and New
Zealand Wineries' Grape Sourcing Strategies**

“Towards a Multi-Paradigm Exchange Protection Framework”

A thesis
submitted in partial fulfilment
of the requirements for the Degree of
Doctor of Philosophy

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by
Monnane Mokaedi Monnane

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Abstract of a thesis submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy.

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Monnane Mokaedi Monnane

The Transaction cost economics (TCE) incomplete contracting framework exposes exchange relationships to trading partner(s)'s opportunism (Williamson, 1985). Despite this limitation, incomplete contracts are still widely used (Dawes, Murota, Jera, Masara, & Sola, 2009; Fraser, 2005). However, TCE does not provide a theoretical reason why companies use contracts even though they expose transactions to exchange hazards. It is against this background that this research has developed an exchange protection framework that protects exchange relationships better than TCE incomplete contracts. The new framework is multi-paradigm in nature and integrates the exchange protection qualities of incomplete contracting (Transaction cost economics theory), monitoring and incentives (agency theory), relational norms (relational exchange theory) and the legal system. The framework has also been used to explain the use of contracts despite their vulnerability to opportunism. The explanation is that companies complement incomplete contracts with other exchange protection frameworks such as monitoring, incentives, norms and the contract enforcement mechanism of the legal system. These other exchange frameworks provide added safeguards to incomplete contracts and hence their continued use.

Insights from the multi-paradigm exchange protection framework developed for this research have been used to make managerial and theoretical contributions. For example, managers have been advised to complete their contractual relationships by building norm based relationships with their trading partners and clients, providing necessary incentives and

relying more on mutual obligation monitoring, and to consider giving priority to building exchange relationships with partners operating in strong legal systems if they happen to engage in cross-border trade. From a theoretical perspective, the research has developed a multi-paradigm theoretical framework that is believed to offer better exchange protection than any theory in isolation. This notwithstanding, the current research has some limitations. These include among others, the focus on only one part of the value chain (grower-winery) and the generalisation problems arising from the fact that the research focused on only one sector (wine industry). These limitations helped shape the direction of further research which includes applying the multi-theoretical framework to different industries.

Keywords: Transaction cost economics, Agency theory, Relational exchange theory, Legal system, Bounded rationality, Opportunism, Trust, Monitoring, Incentives, Contracts.

Dedication

To my mother and father.

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Chapter 1

Thesis Introduction

1.1 Introduction

The Transaction Cost Economics (TCE) exchange protection framework is based on incomplete contracting. However, there are limitations to this framework. It makes two main behaviour assumptions, opportunism and bounded rationality (Williamson, 1985). Opportunism implies that given the opportunity, actors will take advantage of their trading partner's vulnerability and bounded rationality means that principals cannot anticipate future contingencies as they design contracts, which exposes them to opportunistic tendencies of agents who may wish to re-negotiate the contracts as the future unfolds. The TCE contracting schema therefore exposes transactions to opportunism since it allows for contract re-negotiations. This suggests that transactions are not adequately protected under the TCE incomplete contracting framework because opportunistic actors are most likely to take advantage of their trading partners. As such, the theory fails to offer complete contractual protection to exchange relationships, the result of which is expected to be vertical control. This notwithstanding, contracts are still widely used to coordinate exchange relationships (Dawes *et al.*, 2009; Goodhue, Heien, Lee, & Summer, 2003). This raises the question of why the TCE incomplete contracts are widely used despite their obvious limitation of exposing exchange relationships to opportunism. The theory does not have a credible explanation as to why incomplete contracts (arising from bounded rationality and opportunism) are used despite their vulnerability to holdup.

The key objective of this research is therefore to develop an exchange protection framework that offers better exchange protection than the TCE incomplete contract. The other key objective is to use the new exchange protection framework to explain the continued use of incomplete contracts despite their vulnerability to holdup. The new framework will be developed by integrating different exchange protection mechanisms into TCE incomplete contracting schema with the objective of developing an improved multi-paradigm exchange protection framework. It is important to note at the very onset that a number of studies that have employed the multi-theoretical approach have already been undertaken. These studies can be divided into two main streams. The first group has largely focused on the differences of these theories in dealing with exchange problems. These include Kim and Mahoney (2005), Tiwana and Bush (2007) and Kochhar (1996) who integrated TCE with agency theory as well

as Mudambi and Pederson (2007) who integrated agency theory with the resource dependency theory. Another group of studies has sought to identify and exploit the exchange protection qualities of the theories, but the studies have largely focused on integrating TCE and relational exchange theory. These include Lui, Wong & Liu (2009) and Somogyi, Gyau, Li and Bruwer (2010).

The current study differs from previous literature in two main ways. (a) Unlike previous studies that sought to compare the perspectives of different theories about a given phenomena or identify and exploit the exchange protection qualities of the theories, this research will endeavour to capture both the disparities and complementarities of selected theories, the key objective being to develop a more improved exchange protection framework. (b) The current study will integrate the exchange protection qualities of the legal system into a multi-paradigm exchange protection framework. Specifically, the research will integrate the TCE, agency and the relational exchange theories as well as the efficacy of the legal system in protecting exchange relationships. The integrated framework will be used to explain why transacting parties use incomplete contracts despite their vulnerability to opportunism. To the best knowledge of the researcher, no study has ever integrated these four exchange protection mechanisms.

1.2 Theoretical Background

This research draws its theoretical base from TCE, agency theory, and relational exchange theory. The common thread between these theories is that they are concerned with trading relationships between partners. That is, they are exchange theories. Thus non-exchange theories such as resource theories (Penrose, 1959) and social network or cluster theories (Homans, 1961) are not considered as suitable for this type of research. Resource/knowledge-based theories of the firm tend to be inward looking and do not see exchange between two firms as a means of encouraging firm competitiveness. However, this research notes that Resource theory does provide justification for firms to engage in exchange relationships, primarily to secure scarce resources, but this is only one reason for what are complex socio-economic arrangements. In addition, social exchange or cluster based theories such as social network theory are concerned with group based firm relationships while the current research is focusing on dyads. The exchange theories identified for the current research will be supplemented by the contract enforcement mechanism of the legal system, primarily because the legal system also provides protection to exchange relationships but has not been integrated into a framework such as the one this research proposes before.

1.2.1 The TCE Theory

The TCE (Williamson, 1975, 1985, 2008) posits that in the absence of specific assets, transactions should be undertaken within the spot market. Once specific assets are involved and there are no costly contractual hazards, contractual relationships are recommended. In the event of contractual hazards, the theory argues that transactions should be internalised. The theory further argues that business actors are opportunistic and that it is impossible to capture all possible future contingencies in a contract. Hence contracts are incomplete. Since actors are opportunistic, as new information unfolds following the signing of a contract, they may wish to re-negotiate for new contractual terms that are based on the new information and this may create opportunities for hold up (Baker & Krawiec, 2006). The combination of opportunistic actors and incomplete contracts implies that while TCE contracting provides some form of exchange protection, it fails to adequately protect transactions against opportunism. However, despite this limitation, contracts are still widely used as a coordination mechanism (Bogetoft & Olesen, 2002; Fraser, 2005). The question then is; why are contracts still used despite this limitation, especially given the TCE supposition that transactions would be internalised once they are exposed to contractual hazards? Why is it that transacting parties do not always take advantage of each other's vulnerabilities even when incomplete contracts offer them the opportunity to do so? This research is of the view that while it is not feasible to capture of every future contingency in a contract, contracts are not as incomplete as the TCE envisages. This research argues that in addition to a TCE contract, exchange protection mechanisms offered by agency theory, relational exchange theory and the legal system also help reduce exchange partners' levels of opportunism. It is against this background that this research has integrated these exchange protection mechanisms into a single theoretical framework.

1.2.2 Agency Theory

Agency theory controls for opportunism by designing a contract in such a way that agents are provided with incentives (outcome based contract) not to behave opportunistically or/and monitored (behaviour based contract) to ensure that they behave in line with the expectations of the principal (Turner, 1994). Behaviour based contracts control the actions of the agent through investing in systems aimed at monitoring the activities of the agent and reward the agents based on their observed actions. But the principal bears all the risk because regardless of the outcome, the agent gets their rewards. Outcome based contracts on the other hand are

tailored in such a way that agents are rewarded or penalised on the basis of the realised outcomes (Eisenhardt, 1989). Agency theory is therefore of the view that monitoring the behaviour of the agents together with providing them with incentives motivates them to behave in line with the interests of the principals and hence does away with the need for renegotiations. Contractual completeness is assumed because negotiations are made *ex ante*, resulting in goal alignment and thus no need for *ex post* contract re-negotiations (Furlotti, 2007).

However, the literature points to some limitations of the goal alignment strategy. On incentives, Hart (1988) observes that agency theory has been loath to come to terms with the problem of bounded rationality, which renders all contracts incomplete (including the agency contract) anyway. Drawing from TCE, humans lack cognitive ability to capture all future states of the world *ex ante*. Since all contracts are incomplete, *ex post* re-negotiations of incentives and even the degree of agent monitoring is a possibility that could lead to hold up. Therefore, while agency theory provides some degree of exchange protection, as with TCE, it does not adequately address the problem of opportunism because contrary to the theory's assumption that goal alignment would prevent re-negotiations, this does not seem to be the case in reality.

Perhaps due to TCE and agency theories inability to provide adequate exchange protection, both theories have been criticised for overstating the desirability of contracting and vertical integration (in the case of TCE) in hazardous exchange settings; and paying little or no attention to the role of norms in safeguarding exchange relationships (Macaulay, 1963). It is due to such criticisms that this research incorporated the norm based relational exchange theory into its theoretical framework. This follows, among others, Semogyi *et al.*, (2010) and Sutton-Brady (2008) who have acknowledged and studied the importance of relational norms in protecting exchange relationships.

1.2.3 Relational Exchange Theory

The TCE and agency theories are based on the premise that economic agents are self-interested and would act opportunistically if given the opportunity to do so. They therefore advocate addressing any threat of opportunistic behaviour through formal contracts that must be enforced by the courts to ensure that relationships work smoothly. However, proponents of the relational exchange theory (Macaulay, 1963; Uzzi, 1997) recognise that there exist some

exchange relationships that involve exchange hazards such as specific investments and yet are not subjected to vertical integration or formal contracting. According to these theorists, firms create close ties with their trading partner and transactions are not seen as discrete. Transactions are projected into the future on a repetitive basis (Macneil, 1978). The relationship between the exchange parties is sustained by the value of future transactions and interactions. Unlike with both TCE and agency theories, opportunism can be dealt with by adopting a more social orientation to doing business (Podolny, 1994) rather than by formal contracting. That is, relational norms between trading parties are believed to discourage opportunistic behaviour as they lead to self-enforcing anti-opportunistic behaviour that is less costly to govern and more effective than both contracts and vertical integration. However, while norms protect exchange relationships to some degree, the question of why contracts are still so prevalent despite the existence of the less costly option of norm-based contracting remains. Like TCE and agency theories, relational exchange theory fails to adequately account for the use of formal contracts, especially that contracting is even more expensive than relational governance.

1.2.4 The Institutional Environment – The Legal System

Defined by Antia and Frazier (2001, p. 68) as “the severity of a principal’s disciplinary response to an agent’s violation of a contractual obligation”, contract enforcement is a key factor that influences exchange performance. This is so because contracts are a set of rights and obligations established between the transacting parties, but are meaningless without a mechanism to enforce them (Alisena & Giavazzi, 2008). That is why all contracts include provisions or mechanisms to support their implementation (Menard, 2000). Lack of contract enforcement or weaknesses within the contract enforcement framework exposes transactions to hazards. It motivates opportunism because exchange partners stand to benefit from dishonesty without any serious consequences.

Contracts may be enforced by the parties themselves, and this is usually under states of normalcy, where there are no substantial deviations between the *ex ante* and *ex post* states of the world. This is however not always the case. In as much as contracts imply the intent of cooperation and consensus between trading parties, they also engender dispute and disagreements that may lead to substantial deviations between *ex ante* and *ex post* circumstances (Antia & Frazier, 2001). When such deviations occur, third party enforcement may be called in to enforce the costs of violation. Thus, one of the most important qualities of third party enforcers is that they must be able to induce performance from the parties that

otherwise would not perform if it were not for the enforcer(s)' imposition of costs or threat to impose costs in case of non-performance.

Third enforcement party varies. It may be independent individuals, associations of companies, or the legal system of the state such as agencies, tribunals and various courts (Barzel, 2000). They also vary in terms of enforcement processes, with the legal system of the state following a formal or judicial enforcement while others predominantly follow informal mechanisms. The state's legal enforcement mechanism relies on the state apparatus to effectively enforce the costs, sometimes even using force to ensure compliance (Dhillion & Rigolini, 2006), while most other forms depend on relationally based threats such as excommunication and tarnishing the reputation of the violating party. Having touched on the relational approach to addressing opportunism in the above sub-section, the interest here is the role of the legal system in protecting exchange relationships.

The state's legal system ensures contract enforcement by clarifying threat points in the contract and enforcing such threats in the event of default (World Bank, 2004). It therefore helps facilitate transactions between anonymous parties and provide enforcement of contracts (Kahkonen & Meagher, 1997). This reduces any opportunistic incentives for exchange parties because they know that there are consequences to be borne in the event of an opportunistic indulgence by the offending party. While it is evident that the legal system does protect exchange relationships, the World Bank (2010) makes it clear that a strong or efficient legal system provides better exchange performance than a weak legal system. The World Bank (2010) measures the efficiency of the legal system through time, cost and procedural complexity of resolving a dispute between two domestic businesses. Based on this measurement, 183 countries are assessed for the efficiency of the legal system. The bank observes that the efficiency of the legal system or courts varies greatly around the world. It reports that enforcing contracts can take less than a year in countries with efficient legal systems such as New Zealand or Korea and take up to four years in countries at the lower end of the ease contract enforcement scale such as Bangladesh or Angola. Hence, a strong legal environment may discourage opportunistic behaviour better than a weak but functional legal framework. Even if the legal system is weak, its functionality needs to be emphasised because while it is not as effective as a strong legal system, it is better than dysfunctional legal system (Johnson, McMillan, & Woodruff, 2002). According to the World Bank (2010) report, the New Zealand legal system is stronger than the South African legal system. Table 1.1 below

summarises the World Bank’s (2010) assessment of the South African and New Zealand legal systems in terms of contract enforcement.

Table 1-1: Contract enforcement comparison between South Africa and New Zealand

	South Africa	New Zealand
Global Contract enforcement rank (out of 183 countries)	85	10
Number of contract enforcement procedures	30	30
Time required in days	600	216
Cost as percentage of total claim	33.2	22.4

Source: World Bank (2010)

The above table shows that while the two countries have an equal number of contract enforcement procedures involved from the moment the plaintiff files the lawsuit until actual payment, it takes South Africa almost three times longer than New Zealand to enforce a contract. It is also about ten percent more expensive (as percentage of total claim) to enforce a contract in South Africa than it is in New Zealand. As a result, New Zealand is 75 places above South Africa in the global contract enforcement rankings (out of 183 countries). Hence on this basis, this research considers the New Zealand legal system stronger or more efficient than the South African legal system. Henceforth, reference to a stronger/efficient and weaker/less efficient legal system will mean the New Zealand and South African legal systems respectively. However, South Africa is 98 places above the country with the least effective contract enforcement system on the World Bank (2010) rankings. This suggests that while the country’s legal system is weak relative to the New Zealand legal system; it still has a functional legal system that is better than many countries. The difference between the effectiveness in contract enforcement in these countries has therefore influenced this research to adopt a comparative approach where a country with a weak legal system such as South Africa will be compared to one with a strong legal system such as New Zealand.

1.3 The Wine Industry

TCE has widely been applied to many industries such as electricity (Saussier, 2000), natural gas (Hirschman & Neumann, 2008), sales force (Tremblay *et al*, 2003), information technology (Tiwana & Bush, 2007) and automotive industry (Kingley & Fettulah, 2010). However, Fernandos-Olmos, Rossell-Martinez and Espitia-Escuer (2009) note the lack of studies that have applied TCE within the beverage industry including the wine industry. Given the lack of studies within the wine industry, the author felt that it was appropriate to apply the TCE framework in this industry. Hence, the current research focused on the wine

industry as a way of complementing Fernandos-Olmos *et al*, (2009)'s efforts to derive greater insights into the TCE by analysing a new industry.

1.4 Research Objectives and Questions

This research aims to develop a multi-theoretical exchange protection framework that offers better exchange protection than any theory in isolation. The framework will then be used to explain why firms use incomplete contracts despite their vulnerability to hold up. However, before using the framework to explain incomplete contract use, the research will first have to establish the degree of contract use in both South African and New Zealand. The research objectives are therefore:

- (a) To integrate TCE, agency theory, relational exchange theory and the contract enforcement mechanism of the legal system into a multi-paradigm governance framework that is more effective in protecting exchange relationships than any exchange protection framework in isolation.
- (b) To use the multi-theory governance framework developed in (a) above to help explain why firms use incomplete contracts despite their vulnerability to *ex post* opportunism.
- (c) To investigate the structure of, and the differences between the South African and New Zealand wineries' grape sourcing strategies.

These objectives will be addressed through the following research questions.

- (a) What governance strategies do firms in South Africa and New Zealand wine industries use to source their grapes?
- (b) Are there any differences or similarities between the South African and New Zealand grape sourcing strategies?
- (c) Can the continued use of incomplete contracts be explained through the theoretical underpinnings of TCE, agency theory, relational exchange theory and the efficacy of the legal system?

1.5 Methods and the Philosophical Approach to the Research

Because of the researcher's epistemological approach to research, which is essentially quantitative, this approach to hypotheses testing will be adopted to help address the research questions and objectives. According to Phillips (1987), epistemology concerns the current

body of scientific knowledge of a given phenomena. It is concerned with knowledge that has been generated through reliable scientific or quantitative processes. In particular, econometric analyses will be the dominant quantitative method used for the current study. This approach is the most appropriate for this research because as compared to the rival Structural Equation Modelling (SEM) approach, econometric analyses is less sensitive to sample size variations. For example, the research has a sample size of 111 for South Africa and 116 for New Zealand. In addition, there are 9 interactive variables. With 9 interactive variables, the effective use of SEM would require a minimum sample size of 500 (Hair, *et al*, 2010), while econometric modelling would only require a minimum sample of 30 (Zikmund, 2003). Thus, the choice of econometric modelling approach provides confidence in the interpretation of the results as 111 and 116 are well above the minimum threshold sample size required for the effectiveness and reliability of this approach. Further, while the phenomenological approaches such the case study provides in depth understanding of the phenomena because they involve gathering deeper information and perceptions through inductive, qualitative methods such as interviews, discussions and participant observations (Hycner, 1985), they will not be applied to the current study because population generalisations cannot be made from such studies. The current study is a comparative study and the findings from the sample results should be generalisable to the entire sector/firm population of the country so as to aid comparison between the two countries.

1.6 Contributions of this Research

This research will make a number of theoretical and managerial contributions to the exchange protection literature. From a theoretical perspective, this research will develop a multi-theoretical framework perceived as offering better protection to exchange relationships than any theory in isolation (chapter three). This framework incorporates the exchange protection mechanisms of agency theory (monitoring and incentives), relational exchange theory (norms) and the contract enforcement mechanism of the legal system into the TCE incomplete contracting schema. The research will then use the multi-theoretical framework to explain why incomplete contracts are used despite their vulnerability to hold up. In particular, the research will undertake empirical research on the South African and New Zealand wine industries and the results will show support for the suggestion that the component parts (monitoring, incentives, relational norms and the contract enforcement mechanism of the legal system) of this framework provide added safeguards to incomplete contracts, allowing firms to use incomplete contracts with reduced fear of opportunism.

The research will also incorporate the legal system into the mainstream theoretical exchange literature. This means that the legal system will not be treated as a stand-alone exchange protection mechanism but as part of the multi-paradigm theoretical framework. As such, the removal of the efficacy of the legal system would weaken the multi-paradigm framework's ability to protect exchange relationships, and the legal system would also be less effective when isolated from the multi-paradigm exchange protection framework.

From a managerial perspective, the research will advise that managers should make a deliberate effort to leverage the benefits associated with each of the three prevalent governance strategies of the spot market, contracting and vertical control (Scales, Crosser, & Freebairn, 1995). This advice will be informed by the research's findings that each of these three governance strategies has a unique role to play in a firm's overall exchange strategy.

It has been noted that this research will make a theoretical contribution by developing a multi-theoretical framework that highlights the importance of having an all encompassing theoretical approach to protecting exchange relationships from opportunism. On the basis of the framework, managers will be advised to complete their contractual relationships by building socio-economic relationships with their trading partners and clients, providing necessary incentives and relying more on mutual obligation monitoring to ensure performance, and to give preference to exchange partners operating in strong legal systems if they happen to engage in cross-border trade.

1.7 Thesis Structure

This chapter has introduced the current research, broadly outlining the research focus in terms of its objectives, theoretical background and the contributions to the exchange protection literature. Chapter two will review the literature relevant to this research. In particular, the TCE, agency and relational exchange theories as well as the role of the legal system in protecting exchange relationships from hold up will be reviewed.

Chapter three will use these exchange protection insights to develop the theoretical framework for the research. In particular, it will use the TCE incomplete contracting framework as a base on which the new theoretical framework rests. The weaknesses of this theory in protecting exchange relationships will be identified and this will pave the way for strengthening the theory's exchange protection capabilities by introducing and incorporating

the exchange protection mechanisms from agency theory, relational exchange theory and the legal system to develop a new and improved multi-paradigm exchange protection framework. Based on this framework, the chapter will go on to develop the hypotheses for the study.

Next, chapter four will discuss the methods employed in undertaking this research. This chapter will detail the development and validation of the instrument used in the research, data collection procedures as well as how the collected data will be analysed. Chapter five will present the data analysis for this research. The data analysis will start with an overview of the demographics of the respondent firms before reporting on the descriptive statistics of the research's major constructs and variables. It will then perform the validity and reliability tests of the instrument before testing the hypotheses. The hypotheses will be tested using the multiple regression analysis as well as the independent sample t-tests statistics. Finally, chapter six is the concluding chapter. It will discuss the results in detail and present the theoretical and managerial implications of the research. The chapter will then discuss the limitations of the study before mapping the future research agenda.

Chapter 2

Literature Review: Key Exchange Protection Frameworks

2.1 Introduction

This chapter integrates the exchange protection frameworks of the TCE, agency theory, relational exchange theory and the legal system with the key objective of explaining the continued use of contracts despite their vulnerability to opportunism. The integration process also aims at understanding the grape coordination structures within the New Zealand and South African wine industries. Finally, the review process will aid in the development of a multi-theoretical framework that offers better protection to exchange relationships than any theory in isolation. In particular, this review will set out to identify the exchange protection qualities and limitations of each of these frameworks and how they complement each other in protecting exchange relationships. However, before the detailed review of the literature, it is important to discuss Lewis and Grimmes' (1999) metatriangulation theory building process as it will be used to guide the review process.

2.1.1 The Metatriangulation Approach

One of the key objectives of this research is to integrate four exchange protection frameworks and another is to develop a multi-theoretical framework that better protects exchange relationships against opportunism than any exchange protection framework in isolation. The multi-theoretical framework will be used to help explain the continued use of incomplete contracts despite their vulnerability to hold up. In order to achieve these objectives, this research has identified the relevant exchange protection frameworks that will be the focus for review. The review of these frameworks will help this research identify weaknesses and complementarities of the frameworks in protecting exchange relationships. Based on the review findings, proposals for remedies will be put forward in the latter chapters of this research. This requires the use of a process that will allow the research to study the differences and interplay of multiple paradigms with the objective of a better understanding of the protection of exchange relationships.

The metatriangulation theory building process provides a theoretical lens that can help achieve such a task (Lewis & Grimes, 1999). This approach recognises the need for researchers to

appreciate and accommodate diverse paradigmatic insights in their theory building process (Gioia & Pitre, 1990). It recognises the need to explore the disparity and interplay of multiple paradigms, with a view to help arrive at an enlarged and enlightened understating of the phenomena of interest (Lewis & Grimes, 1999). This approach will help harmonise the exchange protection mechanics of the TCE, agency, relational exchange theories as well as the legal system with a view to developing a multi-paradigm framework (Chapter three). However, before reviewing these theories, it is instructive to briefly discuss how the neo-classical treatment of the firm influenced TCE the resultant continuum of governance structures as these will occasionally be referred to as the theories are reviewed.

2.2 The Neo-classical Theory, TCE and the Transaction Governance Continuums

The principal activity of the neo-classical firm is to turn inputs into outputs through a formalised production function (Nicholson & Snyder, 2008). This is done to maximise profits subject to resource constraints (Kreps, 1990). The firm engages in market transactions to secure resources it requires for the production of goods and services it sells in the competitive market (Webster, 1992). The theory assumes perfect competition where production is directed by price movements (Cohen & Cyert, 1975; Hay & Morris, 1991). Each transaction is independent and is guided solely by the price mechanism as the firm seeks to buy resources for its production process at the lowest possible price (Webster, 1992).

This notwithstanding, TCE argues that in addition to the costs associated with the price being paid for goods and services, there are transaction costs associated with the transaction itself. These include the costs of discovering what the relevant prices are, of negotiating and contracting and of monitoring the quality and quantity to the goods delivered (Coase, 1937). That is, there are costs associated with using the price mechanism. Making decisions in the real world involves transactions costs (Williamson, 1971) and these are ignored by the neo-classical theory (Marks & Hooghie, 2000) because this theory treats the firm as an instrument for transforming market sourced inputs into outputs without any real economising within the firm (Williamson, 1991). In order to address this anomaly, Williamson (1971) made a distinction between competition in the neo-classical fashion and hierarchy (the firm) and argued that firms have an option of undertaking transactions through one of these mechanisms. His stance was that the firm (internal organisation) and market governance are substitutes. He states; “as the frictions associated with administrative coordination become more severe, recourse to market exchange becomes more attractive, *ceteris paribus*”

(Williamson, 1971, p. 113). However, this dichotomy came under heavy criticism, with Perrow (1986) arguing that it neglected power relations between firms and Granovetter (1985) asserting that it did not take into account trust between firms and their social imbeddedness within firm networks. This led Williamson (1991) to revise the “make or buy” dichotomy and conceptualised three generic forms of economic economisation of market, hybrid and hierarchy. The hybrid form falls between markets and hierarchy and while the parties maintain autonomy, they are linked through an elastic contracting mechanism. Franchise agreements are given as an example. The elastic nature of the contracting mechanism implies that disturbances may be dealt with through different means, ranging from doing nothing if the deviations are small and the benefits of adjustments are lower than the costs of adjustments to arbitration when the benefits of reconciliation outweigh the costs and finally litigation when the relationship has irretrievably been broken. Further, Ring and van de van (1992) identified non-formal cooperative arrangements based on trust as one characteristic of hybrids. They argued that by choosing governance structures solely on the basis of their ability to minimise costs, TCE failed to explore and exploit other available alternatives such as repeated transactions, and the key roles of trust and equity in-inter firm relationships. On these bases, a number of continua of governance structures have been developed. These include those by Peterson, Wysocki and Harsh, (2001), Lambert, Emmelhaiz and Garner (1996), Webster (1992), Wilson (1995) and Macneil (1980).

Peterson *et al.*, 's (2001) governance continuum shows that firms may use an array of coordination measures ranging from spot markets at the one extreme to vertical integration at the other. In the middle are the following structures: Specification contracts, norm based alliances and equity based alliances. These are shown in Table 2.1 below.

Table 2-1: Control intensity across the coordination continuum

Governance measure	Spot market	Specification contract	Relational based alliance	Equity based alliance	Vertical Integration
Intensity of control	Low intensity (<i>ex ante</i> dominate)	Moderately low (ex ante dominate)	Moderate (mixed ex ante & ex post)	Moderately high (ex post dominate)	High (ex post dominate)
Focus of control	Immediate transaction	Contract terms	Relationship	Property rights of stakeholders in limited joint entity	Property rights of stakeholders in full entity
Ex ante control process	Price discovery Yes/no decision to transact	Setting specifications Setting incentives	Relationship building Setting informal parameters	Negotiating the formal centralised ex post governance structure	Negotiating the formal centralised ex post governance structure
Ex post control process	Yes/no decision to repeat transaction	Decision to renew/negotiate contract, or seek third party enforcement	Mutual resolution or dissolution	Execution of governance policies and procedures in the limited entity	Execution of governance policies and procedures in the full entity

Source: Peterson *et al.*, (2001).

Spot markets are characterised by low intensity of coordination. Under this governance structure, price is market determined and the only control the parties have is to discover the price level, decide whether or not to transact, and decide whether or not to transact again with the same party in future. Parties retain the right to walk away, and can easily do so if they wish. The next governance structure is specification contract. Here the level of control substantially increases over the spot market governance mode since conditions of the exchange can be legally enforced. The contracts include legally binding exchange specifications and terms, and the parties may seek third party enforcement if one of the parties fails to perform. The main objective of contracts is to help the contracting party (principal) have control over the contracted party (agent), hence the principal-agent relationship which forms the cornerstone of agency theory (Eisenhardt, 1989). Next, relational governance comes third in the continuum. This governance form is based on the need and will to adhere to social norms and expectations, especially norms of reciprocity, obligation to cooperate and fairness over and above any contract or agreement (Chiles & McMackin, 1996; Gundlach, Achrol, & Mentzer, 1995). Inter-firm relationships go beyond transactions to include sharing of knowledge, technology and even marketing strategies, each of the parties retain their separate identities.

The fourth governance mode on the continuum is equity based alliances, whereby partners are willing and motivated to collaborate and facilitate varying degrees of integration without a complete merger or a complete acquisition. Equity based alliances are characterised by shared equity capital between parties. These include partial acquisitions, cross equity transactions and joint ventures (Pekár & Margulis, 2003). Parties maintain their separate identities and they may sever ties with their trading partner(s) if the need arises, although joint ownership of assets makes it more difficult to walk away. Since there is common ownership of assets between the parties, the focus of control is defining the property rights of partners in the jointly owned entity. Finally, vertical integration is where control is centralised in one organisation through ownership. Vertical integration occurs when a single firm spans two or more stages of production. Backward integration occurs when a firm decides to integrate either partially or completely with its suppliers (McFetridge, 1994). Forward integration occurs when a firm integrates downstream with the marketing and distribution functions. Hence, vertical integration internalises market exchanges. Two parties to a transaction become one and hence complete hierarchy is achieved and the decision process is completely centralised (Peterson *et al.*, 2001).

A related governance continuum was developed by Webster (1992). This continuum provides the typology of the development of strategic relationships. It argues that at the beginning of relationships transactions are based on the neo-classical profit maximisation paradigm where social processes are not considered in the execution of transactions but rather each transaction is independent of other transactions, and firms want to buy at the lowest available price. This is in line with Williamson's (1991) three part governance continuum and Peterson *et al.*'s (2001) continuum, where the starting point is a price based market transaction between two actors. The next part of the continuum is repeated exchanges mainly due to the acknowledgement of brand quality. The repeatability of exchange does not imply the presence of any meaningful relationships except to appreciate the quality of goods or services offered. This is followed by long-term adversarial contractual relationships, where suppliers seek to buy products at lower prices. The fourth part of Webster's (1992) continuum is mutual, total-dependence buyer-seller partnerships. The distinguishing feature of the relationships is cost reduction and quality improvement through the development of long-term mutually supportive relationships between partners. Unlike the long-term contractual relationships, these partnerships are not adversarial, but are rather based on the notion of mutual benefit of all partners through sharing of information, stability and longevity of the relationships as well the promotion of long-term growth policies. Next are strategic alliances, where relationships

are started with the objective of helping each of the parties achieve their specific long-term goals. These objectives may include the development of new technologies, new products or new markets. This is followed by joint ventures, wherein a new firm that is expected to exist in perpetuity is created. Joint ventures help firms benefit from the competitive advantages and resources of their partners. The sixth part of this continuum is networks. These are complex organisational agreements and collaborations that may include, among others, subsidiaries and value added re-sellers. These must not be confused with alliances. Whereas alliances are agreements between firms, networks are characterised by confederation, or a flexible coalition that is managed from the centre. Alliances may therefore be part of, and managed by the network. Finally, vertical integration is the last part of the continuum.

Another continuum was developed by Lambert *et al.*,(1996) and as with those already discussed, it starts with market based transactions. These are followed by three levels of partnership arrangements, type I, II and III. At the type I level, actors recognise each other as partners and coordinate their activities on a limited basis. These are generally short-term partnerships and are limited to mutual coordination of only a few activities. Type II partnerships consist of companies that have moved beyond simple coordination of activities to integration of activities. These are usually long-term partnerships though they are not expected to last forever. Finally, type III partnerships are characterised by sharing of significant level of strategic operation and with no limit to the length of the partnership. The last two stages are joint ventures and vertical control. Lambert *et al.*, (1996) observes that it is common to have a firm with relationships spanning the entire spectrum. This view is shared by Wilson (1995) who developed a five stage relationship building process. This process integrates constructs (e.g. reputation, trust, mutual goals, cooperation) most often used in empirical research to study relationship development process, and entails partner selection, defining purpose of the relationship, setting relationship boundaries and value as well as relationship maintenance. The process suggests, among others, that reputation is most important at the partner selection stage, and trust is most important at the partner selection stage and purpose defining stages. The importance of mutual goals is said to span four stages of the development process (partner selection, defining purpose of the relationship and setting relationship boundaries and value). Wilson (1995) notes that constructs or governance mechanisms may be latent or active. An active construct is one that receives the manager's attention and the latent construct is one in which the main issues have been addressed to the manager's satisfaction and therefore does not require the manager's time and attention. Latent constructs are however equally important as active constructs in that they would remain latent

for as long as there is no incident or shock that would make them active again. The only difference is that they perform without the manager's attention since they have become "part of the operating environment" (p. 340). Thus, relationships characterised by latent constructs would most likely fall within Lambert *et al.*'s (1996) type II and II partnerships where companies have moved beyond simple coordination of activities to integration of activities or share a significant level of strategic operation and with no limit to the length of the partnership. These continuums show that there are overlaps between coordination measures and companies may use all or a combination of them at a time. That is, the interaction between these governance structures is dynamic. This dynamism is also highlighted Macneil (1980) who argues that exchange partners give up their unilateral power and assume bilateral power (where each party has a say on the nature of the relationship) once they enter into an exchange relationship.

The review of the governance continua above therefore suggests that firms have different coordination strategies available to them. In almost all cases, the beginning of exchange relationships is effecting transactions through the market. From there the intensity of the relationships, be contractual or relational increases with time and the level of interaction, with vertical integration representing the pinnacle of partnerships as at this level firms integrate into a single entity. Further, companies may use more than one governance mechanism at a time, suggesting dynamism in relationships and the use of different governance mechanisms when it is appropriate to do so. Governance structures may be active or latent depending on the stage of the relationship. These governance structures are useful in the following reviews as they are applicable in varying degrees to the exchange protection mechanisms under review.

2.3 Review of Exchange Protection Theories/Mechanisms

The TCE, agency and relational exchange theories all share a common goal of controlling trading partner's opportunistic behaviour. TCE uses ownership or vertical control and formal contractual arrangements. Agency theory uses formal contractual arrangements and relational exchange theory emphasises norm based relationships. However, these theories have limitations in protecting exchange relationships. This section reviews these theories with the objective of identifying their exchange protection properties, limitations and complementarities. The findings of the review process will be used to develop an improved multi-paradigm exchange protection framework in the next chapter. In addition, the legal

system will also be reviewed with the objective of identifying its exchange protection qualities and incorporating them into the multi-paradigmatic framework.

2.3.1 Transaction Cost Economics Theory

2.3.1.1 Introduction and Background

The origins of the Transaction Cost Economics (TCE) theory can be traced back to Coase's (1937) seminal work on the Nature of the Firm. This paper's main thrust was to explain why firms exist. He reasoned that firms exist to provide alternative governance structures to markets as they have different transactions costs to market transaction costs. He proposed that under certain conditions, the costs of organising transactions in the market may exceed the costs of internalising transactions. In particular, he suggested that transactions will be organised within the firm when the cost of organising them in-house is lower than using the market. Further work by Williamson (1975, 1979, 1985) gave credence to Coase's (1937) ideas and also provided some extensions, the product of which was the emergence of the TCE theory. The main thesis of this theory is that transactions should be governed through a governance mode that minimises transaction costs. Williamson (1991) has identified three alternative governance structures through which transaction costs may be minimised. These are market, hybrid and hierarchy, and preference is given to the governance mode that minimises transaction costs. These governance structures have since been refined and while the first stage is characterised by market transactions as initially indicated by Williamson (1971), the hybrid governance mode is shown to include an array of coordination measures such as quality enhanced repeated transactions, adversarial contractual relationships (Webster, 1992), different types of alliances such as those based on the mutual benefit of buyers and sellers (Peterson *et al.*, 2001; Webster, 1992) as well joint ventures (Lambert *et al.*, 1996) and finally vertical integration (Williamson, 1991). Moving from market transactions to vertical control represents increased strength, long term orientation and level of involvement between parties (Knemeyer, Corsi, & Murphy, 2003).

Williamson (1981) states that a transaction occurs when a good or service is transferred across a technological separable interface. Regardless of the transaction governance form, the transacting process is not costless. It involves some transaction costs (Williamson, 1985) and these include: (a) information costs associated with seeking information about the potential exchange partner(s), (b) bargaining costs, which are costs associated with negotiating and establishing the contracts, and (c) enforcement costs, which are costs incurred in enforcing and controlling performance of the partners as well as conflict resolution and contract re-

negotiations. The TCE therefore aims to minimise these transaction costs. That is, transactions should be governed through the least costly governance framework. In particular, it posits that when market uncertainties are high, or market transaction costs are high, it can be cheaper to internalise transactions (Williamson, 2008).

2.3.1.2 TCE Theory Sources and Solutions of Exchange Hazards

According to Williamson (1985), exchange hazards/transaction costs emanate from the transaction properties of: (a) asset specificity, (b) uncertainty and (c) frequency. These are compounded by the behavioural assumptions of bounded rationality and opportunism. Before discussing how the transaction properties expose transactions to exchange hazards or lead to increases in transaction costs, it is important to first introduce the behavioural assumptions of bounded rationality and opportunism because these assumptions contribute to all three transaction properties increasing transaction costs.

Bounded rationality refers to the fact that decision makers have constraints on their cognitive capabilities and limits on their rationality (Rindfleisch & Heide, 1997). Dugger (1983, p. 101) lends support to this view: “people intend to be rational but their calculating and choosing capacities are finite, bounded”. Most transactions are therefore negotiated with limited information. Because of this, TCE argues that any contracts designed by humans are incomplete (Williamson, 1971). Due to bounded rationality, it is impossible for the parties to specify all possible future contingencies (Tirole, 2007), because parties lack the knowledge and foresight to come up with an accurate prediction of, and plan for all the contingencies that may arise during the execution of the transaction (Macher & Richman, 2008). The second behavioural assumption is opportunism. Williamson (1985) posits that human beings are assumed to be self interested by nature and most will pursue their self interest with craftiness, shrewdness or guile. This view is supported by Wilson (1996) who views opportunistic behaviour as involving any act of commission or omission that knowingly and deliberately advances one’s own position to the detriment of another. This implies that TCE assumes, that given the chance, exchange partners would make a deliberate effort to take advantage of their partners since they are assumed to act out of self interest (McIvor, 2009). Thus, opportunism implies that exchange partners will take advantage of their trading partners as and when the opportunity to do so arises.

These behavioural assumptions have implications for the sources of transaction hazards associated with the transaction properties of asset specificity, uncertainty and frequency.

Considered to be the most important of the three transaction characteristics (Williamson, 1989), asset specificity refers to the degree to which an asset can be redeployed to alternative use without loss of its productive value (Williamson, 1985). Four different types of asset specificity are identified: physical asset specificity (specialised machine or tool), human asset specificity (specialised learning process), site specificity (location advantage), and dedicated assets specificity (suppliers' investments to a specific transaction). When asset specificity is nonexistent, market governance is considered to be more effective than hybrid and hierarchy. Under market governance, the identity of the transacting parties is not important because there is no asset dependency between the parties. Parties retain the right to walk away from one another and can easily do so if they wish. However, once the relationship becomes asset specific, bilateral dependence develops and parties cannot easily walk away from each other. The hybrid governance mode is considered more appropriate when there is bilateral dependence arising from asset specificity because it makes it difficult for parties to easily walk away from each other and hence provides some exchange protection. This implies that while the trading parties are autonomous they are also dependent on each other to some extent. However, the hybrid governance mode's effectiveness largely depends on contractual performance. Any contractual misalignments would compromise the hybrid mode's ability to protect exchange relationships because this would open possibilities for contract re-negotiations, which would in turn expose transactions to what has come to be known as the "holdup problem" (Klein, Crawford, & Alchian, 1978). For the holdups to arise, one of the parties to the transaction must commit investments to transact with the other, known as "relationship specific investments". These kinds of investments are risky because they are locked into a particular relationship and are therefore of little value in any alternative use other than the extant relationship (Holmstrom & Roberts, 1998). Realising that the assets have no use outside the relationship and driven by selfish interests, the party that did not invest in the assets may demand new favourable terms from the party that invested in assets. Due to bounded rationality, the party that invested in specific assets would most likely not have incorporated the *ex post* demands of the party that did not invest in specific assets into the original contract. This may trigger a wave of re-negotiations and any renegotiation process would expose the specific investments to the exchange hazards. According to TCE, the solution to holdup associated with asset specificity, bounded rationality and opportunism is hierarchy or internalisation of transactions (Williamson, 1985). Thus, vertical integration should be more prevalent when it is difficult to write long term contracts between contracting parties (Acemoglu, Aghion, Griffith, & Zilibotti, 2004) as this would reduce or eliminate the

need for renegotiations. TCE therefore treats the firm as an avoider of risks associated with specificity, bounded rationality and opportunism (Hardt, 2009).

The second most important transaction attribute is uncertainty and it is exacerbated by contract incompleteness emanating from bounded rationality and trading partners' opportunistic tendencies. Uncertainty may be divided into internal and external uncertainty (Shervani, Frazier, & Challagala, 2007). Internal uncertainty is a problem that arises due to the firm's inability to measure the performance of its trading partner (Williamson, 1981). Realising that the contracting party can not accurately measure performance, an opportunistic party may not operate as per the contractual agreement. Hence, internal uncertainty may lead to *ex post* opportunism (Tirole, 2007). Under such circumstances TCE posits that firms could address internal uncertainty problems by relying increasingly on more integrated transactions (Shervani *et al.*, 2007). External uncertainty is driven by the ever changing industry environment, making it difficult for firms to grasp and predict future outcomes (Williamson, 1981). External uncertainty exposes transactions to opportunism because, as unexpected changes in the environment are realised, opportunistic trading partners may wish to re-negotiate settlements or agreements to take into account the environmental changes that were not anticipated *ex ante*. Bounded rationality dictates that the *ex post* environmental state of the world would not have been expected and most likely not included in the contract and this exposes the contracting party to exchange hazards associated with re-negotiations. This may lead to investment inefficiencies because faced with such uncertainties; investors may under invest as there is no guarantee or certainty that they will get the full return on their investments. According to TCE, vertical integration is therefore seen as one way of controlling for holdup resulting from external uncertainty because combined ownership of the investments in a fully integrated firm offers greater protection for specific assets and provide relatively efficient mechanisms for responding to change where coordinated adaptation is necessary (Monteverde & Teece, 1982; Ornelas & Turner, 2006).

The third attribute of a transaction that may increase transaction costs is transaction frequency and it accounts for the transaction repetitiveness (Williamson, 2008). Recurring transactions require close and constant monitoring, while those that occur only occasionally need not be attended to continuously and do not merit the bureaucratic costs of establishing a hierarchy (David & Shin-Kap, 2004). Thus, in the presence of asset specificity, frequency also pushes transactions away from the market into hierarchy. This is so because it would not make sense to bring in-house the provision of a good or service that is very rarely used (Williamson

1985). It is therefore economical for firms to integrate in the face of more frequent transactions, as by so doing, the costs of frequent transacting including contract re-negotiation costs (financial and time) may be reduced by absorbing them into the hierarchical governance structures of the firm. Frequent transactions are better undertaken in house because sequential adaptations can be made with very “little need to consult, complete, or revise inter-firm agreements” (Williamson, 1979, p. 253).

What emerges from the above discussion is that the TCE posits that the transaction hazards associated with the transaction properties of asset specificity, uncertainty, frequency and the behavioural assumptions of bounded rationality and opportunism may be controlled through hybrid forms of governance when there is contractual performance and vertical control in case of contractual breakdowns. While this is a plausible argument, there are limitations to the argument, and these limitations are discussed below.

2.3.1.3 TCE Limitations and its Empirical Evidence

Two main limitations of the TCE contracting schema can be singled out. First, the combination of the two assumptions of bounded rationality and opportunism makes it tenable that exchange relationships would be exposed to hold up under the TCE framework. From a theoretical stand point, it is reasonable to assume that opportunistic agents will almost always take advantage offered by incomplete contracts. Therefore, under this theory’s incomplete contracting framework, transactions are not adequately protected because opportunistic agents will most likely take advantage of their trading partners. TCE underpinnings therefore fail to fully control for opportunism because its incomplete contract expose transactions to the holdup problem due to potential *ex post* renegotiations.

Second, despite the above limitation (contract incompleteness), empirical research has found contract use to be prevalent (D’Silva, Uli, & Samah, 2009; Dawes *et al.*, 2009; Fraser, 2005; Goodhue *et al.*, 2003) especially within the agricultural sector, and in particular the wine industry, which is the focus of this research. Frazer (2005) found that 85 per cent of growers in Australia had written contracts and 15 per cent had oral or handshake contracts with wineries; while Goodhue *et al.*, (2003) reported a 90 per cent grape contracting by the California wineries. Further, reviews of TCE empirical studies (Carter & Hodgson, 2006; David & Shin-Kap, 2004) also found that despite contract incompleteness, asset specificity does not always lead to vertical control. This raises the key theoretical question that this research seeks to address, and that is:

What explains the fact that trading parties do not always take advantage of their partner(s)' vulnerability even though contract incompleteness offers them the opportunity to do so?

This question arises because from a theoretical stand point, TCE fails to explain why contracts are still widely used despite the associated exchange hazards arising from bounded rationality and opportunism. The theory not only fails to offer adequate exchange protection due to its incomplete contracting framework but also fails to explain the continued use of contracts despite their vulnerability to hold up. Despite these limitations, TCE cannot be said to be a complete failure when it comes to controlling trading partners' opportunism. The limitations suggest that despite the theory's exchange protection qualities, opportunism remains a serious threat to exchange relationships. Empirical studies suggest that TCE does indeed provide exchange protection. However, these studies also exhibit the limitations pointed out by the theory itself.

Saussier (2000) tested for the determinants of contractual relationships between French state owned electricity company (EDF) and its coal transporters. The study intended to find out why some contracts are more detailed than others, and why other contracts often leave contracting parties' obligations more vague than others. A database consisting of 29 contracts signed between 1977 and 1997 for the transportation of coal to EDF power plants was used for the study. The results showed that contracts characterised by high degree of asset specificity were likely to be more complete than those characterised by low degree of asset specificity. This was meant to protect the specific assets from opportunism, and this corroborates the propositions of the TCE. An interesting observation about this study is that it shows a positive and significant correlation between specific assets and contract complexity. But as has already been stated, contracts are incomplete and despite their complexity, the threat of holdup remains. In spite of this threat, EDF did not internalise the transportation services. This study, did not explain the reasons for EDF's continued use of contracts even though they exposed it to holdup by the opportunistic transporters. Hence, like TCE, this study did not shed light on the continued use of contracts regardless of their vulnerability to hold up. Hirschhausen and Neumann (2008) investigated the determinants of the duration of producer- importer contracts under changing technical, economic and institutional conditions (high environmental uncertainty) within the natural gas industry. They found out that duration of contracts involving asset specific investments extend, on average three years longer. What

is not explained by this study is why firms would expose transactions to risk for a further three years.

Hence, what emerges from these studies is that they appear to overly rely on specific terms and conditions in the formal contract as a safeguard against opportunism. Bounded rationality implies that contracts are incomplete, and the current research is of the view that increasing the complexity of the contract on its own would not protect exchange relationships against opportunism. It is against this background that Baker and Krawiec (2006) argue that contract incompleteness may create opportunities for holdup leading to renegotiation as the future unfolds. As this happens, TCE suggests that firms will integrate their transactions as a way of protecting exchange relationships against opportunism (Lyons, 1995). But as already stated, contracts are still widely used. Therefore, like TCE, these studies do not provide an explanation for the continued use of contracts when it comes to exposing transactions to hold up. Therefore, there is a need to develop a theoretical framework that explains the continued use of contract despite their incompleteness. This research will develop a multi-paradigm framework that is believed to protect offer better protection to incomplete contracts and hence explain the continued use of such contracts. The premise for this framework will be that contracting parties do not take advantage of each other's vulnerabilities even when incomplete contracts offer them the opportunity to do so because other theoretical underpinnings and mechanisms such as relational norms, monitoring and incentives as well as the threat of litigation complement incomplete contracts and hence help explain the continued use of incomplete contracts. The framework will also help address TCE contractual inadequacies associated with bounded rationality and opportunism.

In summary, TCE advocates for the adoption of a governance form that minimises transaction costs. In particular, it posits that market governance is an efficient governance mode when no specific investments are involved, while hybrid governance is best when transactions are asset specific and there are no costly contractual breakdowns. Once there are contractual breakdowns, TCE suggests that transactions are better protected by assimilating them into a unified structure. However, there are limitations or flaws to the logic informing the TCE exchange protection framework. First, given that agents are opportunistic and contracts are incomplete, transactions are forever exposed to hazards under the TCE framework. Hence, the theory fails to offer complete contractual protection to exchange relationships. Second, since the theory fails to provide adequate contractual stability, it is logical to expect no contractual arrangements in the face of contract incompleteness and the opportunistic agents. Instead,

vertical integration is expected to be the sole governance mechanism when exchange relationships involve specific assets (given the assumptions of bounded rationality and opportunism). However, this is not the case. Relationships continue to be protected through contractual relationships (Fraser, 2005; Goodhue *et al.*, 2003). TCE therefore fails to explain why incomplete contracts are used despite their vulnerability to holdup.

2.3.2 Agency Theory

2.3.2.1 Introduction and Background

Agency theory is concerned with addressing agency problems that arise in relationships or agreements in which one party (the principal) engages another party (the agent) to undertake some function(s) or action(s) on the principal's behalf (Bergen, Dutta, & Walker, 1992; Logan, 2000; Worsham & Gatrell, 2005). The ideas embodied within this theory can be traced to the writings of the early economists such as Adam Smith. Writing on the relationship between land owners and their tenants (farmers), Adam Smith (1776 (1869)) argues that the farmers have “a plain interest that the whole produce should be as great as possible, in order that their own proportion may be so” (p. 392). This represents goal alignment between the farmer (agent) and the land owner (principal). However, Adam Smith's insights were forgotten for some considerable time and during this time the firm was perceived in neo-classical economics terms, simply as a production function that explains the combination of capital and labour that could be used given some fixed technologies (Kiser, 1999). As discussed in section 2.2, the firm was modelled as “an entrepreneur who maximises profits in an environment in which all contracts are perfectly enforced at no cost (Jensen & Meckling, 1976). However, this view changed within the agency literature following the work of, among others, Ross (1973) on the economic theory of agency. These early works were then followed by the publication of a paper on the Theory of Firm by Jensen and Meckling (1976) which arguably gave prominence to agency theory.

2.3.2.2 Agency Exchange Hazards/Problems

Opportunism within an agency arrangement arises due to two main assumptions about the individual behaviour (Bergen *et al.*, 1992). First, as with TCE, individuals are assumed to be self interested and this may compromise exchange performance in that the agents may, in the desire to satisfy their own interests, behave opportunistically by taking a course of action that satisfies their interests more than those of the principals, a situation referred to as moral hazard (Jensen & Meckling, 1976). Second, the theory's conjecture is that agents have more information than the principals and this may adversely affect the principals' ability to monitor whether or not their interests are being properly served by the agents (Bergen *et al.*, 1992).

Since principals do not have as much information as the agents, they may not know whether the agents' actions are in their (principals') best interests, a situation referred to as *adverse selection* (Jensen & Meckling, 1976). The main objective of agency theory is therefore to reduce the problems of moral hazard and adverse selection through optimal contracting that allows for monitoring and incentive mechanisms that may control the actions of the agents and provide necessary information to the principals (Tate, Ellram, Bals, Hartman, & van der Valk, 2009).

Adverse selection is mainly a pre contractual problem (Bergen *et al.*, 1992). Key issues at this stage are whether in an attempt to win the contract, the agent is misrepresenting his skills and abilities. With adverse selection, opportunism arises because the agent may abuse their information advantage to mislead the principal about their capabilities. This opportunistic behaviour of agents is influenced by the fact that it is not practical and economical for the principal to obtain all information about what the agent can and cannot do (Aish, Wael, & Hassan, 2008). On the other hand, *Moral hazard* is concerned with the agent's opportunistic behaviour that arises after the principal has offered the contract to the agent (Bergen *et al.*, 1992). The problem of moral hazard arises because, given the assumption of information asymmetry, it is not only difficult but also expensive for the principal to know the real actions of the agent (Eisenhardt, 1989). For example, Basu, Lall, Srinivasan and Staelin (1985) argue that it is difficult to adequately reward the efforts of each salesperson because it is problematic to monitor the actual efforts of each sales person. Further, there is the issue of environmental risk. In addition to the agent's effort, outcomes may be influenced by environmental risk, which comes into play because there are other factors beyond the control of the agent, let alone the principal, that may determine the outcomes. These include, among others, market conditions, competitors' strategies and technological changes (Bergen *et al.*, 1992; Hornibrook, 2007).

Agency problems therefore arise because since both the agents and the principals are self interested and have different profit maximising objectives, the risk-averse agents would prefer a more cautious approach and would seek guarantees that they would achieve any task they undertake. On the other hand, the risk-neutral principal is indifferent to guarantees of success. Despite these differences, the principal would like the agent to take a course of action that best suits the interests of the principal. Such course of action would be, and is often fairly costly to the agent in terms of time, effort and any other resources (Bergen *et al.*, 1992). Hence, the agent may try to avoid the actions preferred by the principal, and this may result in

conflict between the two. The objective of agency theory is therefore to design mechanisms that efficiently align the interests of the agent with those of the principal (Turner, 1994), and thus help resolve potential conflict between the two (Tate *et al.*, 2009). Details of how pre-contractual (*adverse selection*) and post contractual (*moral hazard*) problems are addressed by agency theory are reviewed below.

2.3.2.3 Theoretical Solutions to Agency Problems

The literature (Eisenhardt, 1989; Hornibrook, 2007) suggests one pre-contractual solution to addressing adverse selection: investing in finding actual capabilities of the agent and two contractual solutions for addressing moral hazard: a behaviour based and outcome based contract.

Addressing adverse selection requires the principal to invest in collecting information on the true capabilities of the agent before the agent is offered a contract (Bergen *et al.*, 1992). However, this comes at some costs, that of gathering information about the capabilities, which in turn increases the hiring transaction costs. These costs are unavoidable because saving on them may result in the principal hiring the wrong agent due to lack of information, and this may lead to losses due to poor performance (Turner, 1994). Thus, the principal has to decide whether to opt to incur the costs of gathering pre-employment information to increase the probability of hiring the appropriate agent or to risk potential losses associated with hiring the wrong agent (Bergen *et al.*, 1992). In most cases, the principal opts for pre-contract information gathering about the capabilities of the agent (Bergen *et al.*, 1992).

As for moral hazards, Bergen, *et al.*, (1992) proposes that the principals may align the interests of the agents with their own through two types of contracts, the behaviour based and outcome based contract. The behaviour based contract requires the principal to collect more information about the behaviour of the agent by investing in systems aimed at monitoring the actions of the agent (Tate *et al.*, 2009). This is expected to help the principal capture the behaviour of the agent and reward them on the basis of their observed behaviour. However, as with the pre-contractual solution, this is a costly exercise. On the other hand, an outcome based contract is designed in such a way that the agent is rewarded on the basis of the realised specific outcomes, such as sales volume (Ng & Ding, 2010). The principal's interest is not how and when the agent performs their functions, but rather whether or not the expected outcomes have been achieved, regardless of how the agent achieved them. For example, sales agents controlled through an outcome based contract would be rewarded based on sales

volume (Basu *et al.*, 1985) as opposed to paying a salary to the agent regardless of the volume of sales as is the case with a behaviour based contract. For an outcome based contract, the rewards would be proportionate to the sales achieved. This is expected to motivate the agent to act in line with the principals' interests. Once again, this can only be achieved at a cost. These are the monitoring costs incurred by principals as they invest in and operate control systems to ensure that agents act and make decisions that are in the best interests of the principals (Ng & Ding, 2010; Tate *et al.*, 2009). An example is fees of independent auditors. Without incurring audit fees, shareholders would never verify justifications for expenditures by managers (Islam, Islam, Bhattacharjee, & Islam, 2010). They also include incentive costs that are meant to reward agents as a way of encouraging them to direct their behaviours in line with the interests of the principals (Muller & Gaudig, 2010). Such reward systems may include executive share options and performance bonuses. They also include residual agency costs which are simply an admission that as long as there is an agent and principal, all other actions may only reduce the agency costs but will never eliminate them completely (Hueth, Ligon, Wolf, & Wu, 1999). It has been noted that outcomes may not be due to the agent's effort only but may also be due to environmental factors that are beyond the control of both the agent and the principal such as market conditions (Hornibrook, 2007). When environmental uncertainty is high, the agent is most likely to require the principal to pay high bonuses to induce the agent to accept the risk. This implies that the higher the environmental risk, the higher the reward needed to align the agent's interests with those of the principal.

The focus of agency theory is therefore on designing a contract between the principal and agent that will optimally serve the interests of the agent and the principal by minimising agency costs (the cost of monitoring, motivating and ensuring the agent's commitment to the principal's course) while at the same time adequately rewarding the agent to help reduce their incentives to shirk (Nilakant & Rao, 1994). Thus the contract would entail monitoring devices to serve the interests of the principal and incentives to motivate the agent to behave in the interests of the principal. This being the case, the need for re-negotiation is, according to agency theory eliminated because agents have the incentives to behave in line with the expectations of the principals, and principals' information deficiencies are addressed through monitoring. On this basis, Furlotti (2007) argues that agency theory sees monitoring and incentives as principally the cure of conflicts of interest. Agency theory therefore assumes contractual completeness. This view emanates from the fact that negotiations are made *ex ante*, resulting in *ex ante* incentive alignment and thus no need for *ex post* renegotiation. The theory's exchange protection framework therefore helps address the TCE limitations.

Incentives (outcome based contract) and monitoring (behaviour based contract) help align the agent and the principal's interests, and hence protect exchange relationships. Therefore, agency theory's contracting framework drives TCE incomplete contract towards some degree of completeness. Thus, contracts specifying duties and obligations of each party (incomplete contracts) may offer better exchange protection when coupled with agency theory monitoring and incentive devices.

2.3.2.4 Agency Theory Limitations and Empirical Evidence

Despite strong theoretical arguments for the monitoring and incentives goal alignment strategy, agency theory has notable limitations. The first inadequacy of this theory has been observed by Hart (1988) who argues that agency theory has been reluctant to come to terms with the problem of bounded rationality, which renders all contracts, including the agency contract incomplete. Drawing from one of the basic premises of TCE, humans lack cognitive ability to capture all future states of the world *ex ante*. For example, an outcome based contract agreed upon now may need to be revised in the future because environmental circumstances influencing the outcomes over and above the agent's effort may turn out completely different from those expected at the contract signing period, prompting the agent to request for a new agreement that takes into account the realised levels of environmental uncertainty. Agency theory therefore unrealistically places too much faith in the ability of *ex ante* negotiations to result in perfect goal alignment, and hence no possibility of *ex post* goal alignment which is well known to expose transactions to hold up. Putting too much emphasis on *ex ante* incentive alignment as a solution to the holdup problem is therefore a limitation of agency theory in the sense that since all contracts are incomplete and contract *ex post* re-negotiations cannot be ruled out with certainty. This view is also supported by Aish, Wael and Hassan (2008) who observe that despite the exchange protection capabilities of monitoring and incentives, there may still be some room for the agents to engage in adverse selection but on a lesser scale. This suggests that self-interested opportunism by the agent can never be completely resolved as long as there is delegation of responsibilities. This not only leaves the question of why firms use incomplete contracts still unanswered but also presents a challenge of developing a framework that would efficiently manage and minimise opportunism.

A second limitation is related to the behaviour based interventions. Putting in place mechanisms to observe the actions of the agent is costly. For example, in the agricultural sector, this may mean extra costs of employing field persons to make periodic visits to the grower's farm to observe effort being put into the production process (Hueth *et al.*, 1999). Third, from an outcome based contractual arrangement, it may also be costly to measure

outcomes. Hence investments have to be made to ensure that outcomes are appropriately measured. It also transfers the risk to the agent, as goal attainment does not depend entirely on the effort of the agent but also on the environmental factors such as government regulations and the overall business climate. Thus, while goal alignment reduces the need for *ex post* re-negotiation and thus helps to address the holdup problem, environmental uncertainty poses a problem in that it increases the costs of goal alignment in addition to the costs of measuring outcomes. For example, when environmental uncertainty is low, agency theory's incentive stance seems appealing because the agent will readily accept the risk, but when environmental uncertainty is high, it becomes increasingly expensive to shift risk to the agent despite the motivational appeal of such a move. Hence, in the face of high environmental uncertainty, the bonus required to appease the agent to accept the risk is bound to be sufficiently large (Miller & Whitford, 2007), hence increasing the transaction costs. From the above it seems that that the right mix of goal alignment will only last as long as the environment remains the same. Any change in the environment may lead to possible re-negotiations and thus expose transactions to hold up.

It is therefore reasonable to argue that while incentive alignment is an appealing concept as it ensures that both the principal and the agent have the same interests, the issues of bounded rationality and hence incomplete contracts, monitoring and outcome measurement costs as well as the costs of bonuses in the face of high environmental uncertainty weaken the ability of agency theory to adequately protect exchange relationships from opportunism. Given the incomplete nature of contracts, an *ex ante* incentive agreement looks very fragile as new states may alter the risk profile of the agent, requiring the agent to seek a renegotiation of terms which may expose transactions to hold up. Thus, agency theory addresses opportunism only when environmental uncertainty is low, but fails to acknowledge the hazards of incomplete contracting. Thus, like TCE, agency theory cannot adequately address the problem of opportunism, particularly due to its neglect of the fact that contracts are incomplete.

However, as with TCE, the theoretical limitations sighted above do not in any way suggest that agency theory does not provide exchange protection. The monitoring and incentive framework does offer exchange protection, especially when environmental uncertainty is low. The limitations simply point to the fact some aspects of the theory may compromise exchange protection and that not recognising bounded rationality, and hence assuming complete contracting, it cannot successfully counter exchange hazards since incomplete contracts are still widely used. For example, Juras and Hinson (2008) developed and tested propositions

about the relationship between board of directors' characteristics and firm performance within the banking sector and conclude that board size, independence, and strong ties to the organization through stock ownership lead to increased performance of the organization. Essentially, this study showed support for the agency theory in that strong ties to the organisation were found to lead to increased performance. Managers' stock ownership in firms helped achieve good firm performance, which was also the boards' objective.

Muller and Gaudig (2010) investigated the antecedent of information exchange in supply chains and found that monitoring measures and frequent meetings positively influence the exchange information flow. They also found that measures such as reputation mechanism would probably be effective only in the long run. This study showed that the agency mechanism does protect exchange relationships. The study also considered both agency and relational effects on exchange protection, which contributed to the current study's decision to employ a multi-paradigm approach to exchange protection. It also helped confirm the governance continuums' assertion (Peterson *et al.*, 2001; Webster, 1992) that companies employ a variety of governance measures to manage their transactions, that as per Wilson's (1995) argument, governance structures may be active or latent at different stages of the relationship. In this case, relational norms were found to become effective or active after relationships have been managed through formal contractual means.

These studies helped address the weaknesses of the TCE incomplete contract in that they show that agency theory provides an added safeguard to exchange relationships. This suggests that the monitoring and incentive mechanism compliments the TCE incomplete contract in protecting exchange relationships.

It has to be noted however, that all contracts are incomplete (Hart, 1988) and therefore the fact that managers' stock ownership did not completely remedy the managers' opportunistic behaviour. Hence, despite the added safeguards provided by agency theory's incentive and monitoring mechanisms, the threat of hold up still remains. Further, while agency theory helps address the weaknesses associated with incomplete contracting, it fails to explain the key theoretical question that this research seeks to address, that of explaining the continued use of contracts despite their vulnerability to holdup.

Agency theory has also been criticised for being under-socialised as it does not account for prior meeting of trading partners, which may reduce and even eliminate goal incongruence

between the principal and the agent (Granovetter, 1985). Perrow (1986) argues that since the theory emphasises monitoring and offering of incentives to control opportunistic behaviour, it would actually increase attitudinal differences in the long run. Critics of agency theory recommend concentrating on building trust between the principal and the agent which could reduce opportunistic behaviour of agents (Beccerra & Gupta, 1999). These critics highlighted the importance of the exchange protection qualities of a more socialised transaction coordination approach, and will be incorporated under the next theoretical construct.

In summary, the focus of agency theory is to design a contract between the principal and agent that will minimise agency costs (Nilakant & Rao, 1994). The contract entails both monitoring and incentive aspects. This helps address the limitations of TCE. Incentives and monitoring help prevent the opportunistic agent from taking advantage of the principal. Monitoring helps improve the principal's information about the agent's behaviour and actions, and thus provides a means of controlling the agent's opportunistic behaviour. Further, incentives promise positive rewards in cases where the agent behaves in the best interests of the principal. This again dissuades the TCE opportunistic agent from taking advantage of the vulnerable principal. Hence, it is fair to argue that the agency theory goal alignment strategy compliments TCE exchange framework as the strategy helps address the transaction vulnerability associated with TCE incomplete contract and opportunistic agents. Moreover, by designing a contract that ensures that agents are incentivised to meet the principal's expectations *ex ante*, the agency contract represents a positive step towards a complete contract as it substantially reduces the need for *ex post* contractual renegotiations.

However, like TCE, agency theory has limitations when it comes to protecting exchange relationships. Hart (1988), is of the view that agency theory should embrace TCE assumption of bounded rationality and appreciates that while incentives and monitoring would reduce opportunistic behaviour, there are other contractual hazards beyond those two that cannot be included in a contract. Contracts are naturally incomplete. The theory is also said to be under-socialised as it does not account for prior meeting of trading partners. It is against this background that the next section of this review is on the norm based relational exchange theory.

2.3.3 Relational Exchange Theory and the Protection of Exchange Relationships

2.3.3.1 Introduction and Background

Unlike the neo-classical economic theory that has a price mechanistic view of the firm, the relational exchange theory integrates and helps understand the social behaviour in economic undertakings (Homans, 1958). It is concerned with protecting exchange relationships through norms such as commitment and trust (Yaqub, 2010). It is against this background that in contrast to TCE and agency theories that emphasise formal contracting (and vertical integration in the case of TCE) to address market uncertainties, the relational exchange theory perspective is that market uncertainties can be dealt with through adopting a more social orientation to doing business (Podolny, 1994).

The origins of the relational exchange theory can be traced to Homans (1958) who suggested that any interaction between humans represents an exchange of resources and that the resources exchanged may be both tangible (goods) and intangible (friendship). His thesis was that parties enter and maintain a relationship with expectations that the relationship will be rewarding. Parties expect some benefit from entering into and maintaining relationships. This line of thought was later advanced by among others, Macaulay (1963) and Macneil (1978) who also highlighted the importance of social norms and self enforcing contracts in business relationships.

2.3.3.2 Relational Exchange Theory Solutions to Exchange Hazards

As stated above, relational exchange theory is concerned with protecting exchange relationships through establishing relational norms between exchange partners. Relational norms are many and varied. They may include shared planning and joint responsibility (Johnston, McCutcheon, Stuart, & Kerswood, 2004), reputation and cooperation (Arend, 2009), risk sharing and exchange of information (Arrighetti, Bachmann, & Deakin, 1997) and trust (Claro & Claro, 2008; Morgan & Hunt, 1994). Further, trust is generally considered to be the most important variable within relational exchange literature and is commonly used to represent relational norms (Lambe, Wittman, & Spekman, 2001). Trust is an abstract concept and means different things to different people. For example, Ring & Van de Ven (1992) define trust as confidence in the other party's goodwill. It is the firms' belief that each party to the transaction will act for the benefit of the other (Anderson & Narus, 1990). Sako (1992) identifies three types of trust relevant to buyer supplier relations and these are contractual trust, competence trust and goodwill trust. Contractual trust refers to a belief that all parties will act ethically and keep the promise, be it a written or an oral promise, while competence

trust refers to a belief that a partner possesses the capabilities of doing what it promises to do, or is competent to execute the task at hand. Goodwill trust refers to the assumption that parties will make an open ended endeavour to take initiatives for the benefit of both parties and will not act opportunistically. According to Burchell and Wilkinson (1997, p. 218) trust means “at a minimum that the supplier can be relied upon to deliver on time the product or service of the agreed design, quantity, quality and price, and that the customer can be relied upon to accept the delivery of the order and to pay up fully and on time”. What emerges is that despite the many meanings of trust, a common thread between these meanings is that trustworthy partners are expected to act in the best interest of their trading partners and thus are least expected to behave opportunistically.

Norm based relational exchange theory argues that inter-firm transactions are governed by these norms. Transactions are characterised by repeated exchanges and embeddedness in social relationships (Granovetter, 1985; Poppo & Zenger, 2002). Firms create close ties with their trading partner(s) and transactions are projected into the future (Macneil, 1978). They are seen as a series of uncertain, open ended, incomplete exchanges over medium to long term (Masters, Miles, D'Souza, & Orr, 2004). Baker, Gibbons and Murphy (2002) argue that in a relational set up, the relationship between the two parties is sustained by the value of future transactions and interactions. Relational governance allows inter-firm relationships to go beyond transactions to include sharing of knowledge, technology and even marketing strategies. There is expectation that cooperation between the firms will provide future mutual benefits (Paulin, Perrien, & Ferguson, 1997). The need and will to adhere to relational norms and expectations, especially norms of reciprocity, obligation to cooperate and fairness are important foundations for relational governance (Chiles & McMackin, 1996).

The main objective of the exchange partners is to maintain their relationship for the foreseeable future. They are therefore unlikely to conduct themselves in ways that would compromise this goal. This leads to repeated exchanges, which further fosters trust as the more the parties trade with each other over a long period of time without breach, the more they trust each other and reduces transaction costs. Repeated exchange between parties also leads to social embeddedness where economic relationships are shaped by social networks characterised by informal arrangements rather than bureaucratic structures such as formal contractual relationships between actors (Granovetter, 1985; Ring & Ven, 1992). In fact, some commentators view the use of formal contracts as encouraging opportunism rather than protecting exchange relationships as intended. For example, Macaulay (1963, p. 64) argues

that the use of formal contracts in an exchange relationship “indicates a lack of trust and blunts the demands of friendship, turning a cooperative adventure into an antagonistic horse trade”. He further argues that businesspeople often prefer to rely on a word of mouth or a handshake even when exposed to serious transaction risks. These relational norms therefore reduce transaction costs (Chiles & McMackin, 1996), and hence, like the TCE and agency exchange frameworks, it helps protect exchange relationships against opportunism. For example, when there is trust between two actors, there is less need to employ expensive safeguard measures such as contract negotiations and renegotiations, installation of monitoring devices to detect agents’ shirking or even provision of incentives to encourage agents’ performance, all of which results in increased transaction costs. In a relational set up, monitoring costs are substantially lowered because trust reduces the need to check every time whether the other party is really doing what he promised to do. Thus, norms help address problems associated with moral hazard. When actors belong to the same group they face less coordination problems, which reduce their transaction costs. With reference to trust, Lyon (2000, p. 664) notes that; “trust plays a major role in reducing transaction costs, especially in situations of long distance trade, through reducing the need for monitoring and information”.

Since norms discourage opportunistic behaviour (Uzzi, 1997; Wakabayashi, 2003), they encourage better investment decisions, and ensure rapid and flexible responses to unforeseen circumstances (Lyons & Mehta, 1997). The theory argues that specific investments through the use of social mechanisms such as restricting access to exchanges, imposition of collective sanctions, and trading with reputable partners only (Borgatti, Hesterly, & Jones, 1997). Restricted access seeks to limit the number of trading partners within the network. This is normally meant to ensure that members of the network are of an acceptable status. It has been mentioned that repeated exchanges facilitate the development of trust and therefore embeddedness. Access is therefore in most cases restricted to members who have continuously shown commitment to quality through previous transactions (Podolny, 1994) and who have developed as a social unit over time.

Fewer suppliers or restricted access reduces transaction costs (coordination costs) and allows for better and close monitoring through frequent interaction (Borgatti *et al.*, 1997). This not only helps ensure high quality inputs but also reduces the possibility and dangers of opportunism. This is so because having fewer partners who closely interact encourages the development of close ties and as this happens, the parties interests become aligned and hence mitigate opportunistic behaviour (Granovetter, 1973). Smaller groups generally find it easy to

become loyal towards each other, which is a positive development towards averting opportunism because in the absence of loyalty and adherence to promises, opportunism is largely seen as a stronger form of self interest (Ghoshal & Moran, 1996). Group sanctions involve imposition of sanctions or punishment on group members who violate group norms and values. Punishment may include withdrawal of cooperation, disapproval and stigmatising culprits (Lyon, 2000). Sanctions safeguard exchanges and relationship specific assets as actors are normally aware of the consequences of engaging in unacceptable behaviour. Reputation involves a high degree of integrity. It is a signal of the company's capabilities and reliability, and hence conforms to Sako's (1992) competence trust. It is about the company's attributes based on its past dealings with transacting parties. Such attributes include level of performance, quality of products and even the type of partners (Vendelo, 1998). Dolphin (2004) views identity, image, prestige, goodwill, esteem; and standing as synonyms of reputation. Good reputation is good for business as it is a signal of value, good performance and helps build sustainable competitive advantage (Mahon & Wartick, 2003). Reputation is therefore sort after as it is an advantage to firms.

The fact that relational norms help reduce transaction costs and the need for constant monitoring, suggests that relational exchange theory may help address the limitations of agency theory that arise due to monitoring and incentive costs. This further helps the performance of TCE incomplete contracts. Hence, it is fair to argue that like monitoring and incentives, relational norms help drive TCE incomplete contract to some degree of completeness, and thus help improve the protection of exchange relationship. That is, incomplete contracts may perform better when they are coupled with monitoring, incentives and relational norms.

2.3.3.3 Limitations and Empirical Evidence of Relational Exchange Theory

The first limitation of the relational exchange theory is what Grayson and Ambler (1999) and Zahra, Yavuz and Ucbasaran (2006) refer to as the "dark side", which in simple terms means that excessive reliance on norms can have negative effects (Lambe *et al.*, 2001; Nooteboom, 2002). Nooteboom (2002) argues that over emphasis of relational norms may induce rigidities and create barriers to innovation. This view is supported by Zahra *et al.*, (2006) who explored the role of trust in the new business creation process in established firms. They found that while relational trust may help overcome some problems that may arise in the various stages of new business creation, they also identified many downside effects of trust on business development for established firms. For example, trusting partners may overlook due diligence, fail to consider alternative partners, lack effective controls and in extreme cases fail

to guard against partner(s)' opportunistic behaviour. Moorman, Zaltman and Deshpande (1992) investigated the role of trust between knowledge users and knowledge providers. Based on their results, they argued that clients in long term relationships are more likely to begin to have higher expectations, which would in turn increase the likelihood of dissatisfaction. They also noted that clients may start believing that long term service providers are taking advantage of the trusting relationship and being opportunistic. The point supports Lambe *et al.*, (2001) who argue that the theory should be criticised for its assumption that social norms are devoid of opportunism. Their thesis is that even after achieving the highest levels of relational norms, occasional differences between partners are still possible, and they may expose transactions to opportunism. Further, the dark side of relational norms is in line with Wilson (1995) who observed that constructs aimed at protecting exchange relationships such as trust, commitment, cooperation and mutual goals may be active and latent in certain stages of the business relationship. Hence, as the above studies show, there are times when the relationships are characterised by the dark side of trust, and this may be during stages when the variable is latent. This suggests that exchange relationships cannot be protected by norms alone, as there are problems associated with over reliance on norms. Thus, firms may benefit from combining relational norms with other exchange protection frameworks. In this way, other exchange safeguards would protect relationships when the norm based mechanisms are latent or affected by their dark side. This has therefore contributed to the multi-paradigm exchange protection approach adopted for this research where norms are integrated with other exchange protection frameworks.

The second limitation is related to the conceptual argument that relational governance may be substitutes for formal governance mechanisms such as formal contracts (Macaulay, 1963). Recent studies (Argyres, Bercovitz, & Mayer, 2007; Poppo & Zenger, 2002; Ryall & Sampson, 2009) point to the complementarity between formal and relational governance structures. Thus the relational theory's perception that relational governance may be substitutes for formal governance may have robbed managers of the benefits of a balanced and improved relational /formal governance framework. A related limitation is that it puts a lot of emphasis on long term relationships at the expense of short term one. The theory argues that transactions are projected into the future (Macneil, 1978) and are characterised by repeated exchanges (Poppo & Zenger, 2002). However, relational norms develop over time (Lewicki, Tomlinson, & Gillespie, 2006). For example, Gulati (1995) posits that trust is built as firms repeatedly interact. This view is shared by Luo (2002) who states that formal contracts serve as a framework for guiding cooperation and Beave and Saussier (2010) who argue that informal agreements emerge to improve on the results of formal agreements. This

suggests that before relational norms develop, actors rely on formal coordination measures. Formal governance mechanisms protect exchange relationships before familiarity between trading partners develop. The relational exchange theory should therefore implicitly acknowledge the importance of formal contracts especially in short term relationships that cannot rely on familiarity to provide exchange protection. This is more so as Beave and Saussier (2010) point out, while relational norms are often presented as a mechanism of addressing limitations associated with contracting, firms always sign a contract of some type.

Further, the theory plays down the role of the legal system in protecting exchange relationships. Its argument is that the problems of bounded rationality and hence opportunism may be addressed through self enforcing relational contracts. This argument is based on Macaulay's (1963) findings that courts are seldom used to resolve disputes between trading partners, even in developed countries like the United States. However, as shall become apparent when the role of the legal system in protecting exchange relationships is reviewed, courts do protect exchange relationships and may therefore complement norms in protecting exchange relationships. Lastly, despite its apparent disdain for the use of formal contracts (Macaulay, 1963) and arguing that transactions are better protected through norm based relationships than formal contracting, the relational exchange theory fails to explain the continued use of incomplete contracts despite their vulnerability to holdup.

These limitations point to the fact that while the theory provides protection to transactions, it has shortcomings. This suggests that, just like TCE and agency theory, it fails to comprehensively control for opportunism. Once again it is important to note, that this does not mean that relational exchange theory completely fails to protect exchange relationships. Empirical studies show that relational norms do indeed protect exchange relationships. However, there are glaring limitations in these studies. For example, Claro and Claro (2008) tested the relationship between performance and trust in the Brazilian distribution market and concluded that overall, trust efficiently coordinates the activities of the relationships. They further stated that managers of the companies seek to build trusting relationships as a way of mitigating opportunism. The study's overall findings therefore support the propositions of relational exchange theory. They show that relational norms, in this case trust, do help protect exchange relationships. However, while it is impossible to explore all the determinants of exchange performance within any given industry or relationship, by focussing exclusively on trust (relational norms), and excluding other governance mechanisms such as formal contracts and monitoring/incentives, the authors may have missed the opportunity to gain a broad understanding of determinants of exchange performance within the Brazilian distribution

sector. Another study by Masuku and Kirsten (2004) examined contractual relationships between smallholder growers and millers in the sugar industry supply chain in Swaziland. Their results showed that higher levels of trust led to higher levels of cooperation between growers and millers, which in turn led to higher levels of commitment of growers to the business relationships. The authors suggested that since contracts work on compliance and relational exchange requires only trust and commitment, transactions supported by relational norms are most likely to succeed than those supported by legal contingencies. Indeed these results show support for the relational exchange theory in protecting exchange relationships. However, the authors played down the role of other governance frameworks such as forms contracts in insuring transaction performance. They adopted the formal/relational contracts substitution approach and as such their advice may have denied managers the opportunity to put in place the governance structures that take advantage of the benefits of both formal and relational contracting. Furthermore, even though the authors showed their disapproval of formal contracts, they did little to shed light on why formal contracts continue to be used even when, as they note, are more likely to fail than the relational contracts. This research will argue that the choice of governance measures should not be informed by whether or not the formal or relational approach is most likely to fail but should be informed by the right mix, based on different circumstances, of both formal and relational governance mechanisms. The two are complimentary.

This view is influenced by among others, Poppo and Zinger (2002) and Zhang and Aramyan (2009) who perceive formal and relational contracts as complements rather than substitutes. Poppo and Zinger (2002) used data from a sample of information services exchanges and found empirical support for the complementarity between relational and formal governance. Managers appeared to couple their increasingly customised contracts with high levels of relational governance (and vice-versa). They argued that that in settings where hazards are severe, a combination of both formal contracts and relational arrangements may result in superior exchange performance than either governance framework in isolation. Formal contractual specifications such as clauses on punishment in case of default may encourage long term agreements and thus discourage opportunistic behaviour aimed at short term gains. In this case, specification contracts and relational based alliances in Peterson *et al.*, 's (2001) continuum were used at the same time, suggesting that different mechanisms may simultaneously be employed to protect exchange relationships. However, this study was cross sectional in nature and therefore did not capture the dynamics of the relationships. Wilson (1995) and Peterson *et al.*, (2001) continuums of relationships suggest that relational norms develop at later stages of the relationships.

A related study by Ryall and Sampson (2009) examined 52 contracts for joint technology development in the telecommunications equipment industry to determine whether and how their content is affected by relational considerations. They found that contracts became more detailed and included stronger enforcement terms when at least one of the firms has prior relationships with each other. The reason given for this was learning by doing: as a firm interacts with its trading partner(s), its ability to write more complex contracts improves. That is, repeatability and socialisation did not lead to less contract complexity but instead led to greater contract complexity. A related study by Argyres *et al.*, (2007) investigated the evolution of the contracting process in the information technology sector and found that dyadic repeat exchanges lead to complexity in subsequent contracts. This was said to be mainly due to the fact that contract implementation revealed shortcomings in the relationship and the shortcomings were dealt with by including new and appropriate contingency provisions in the subsequent contracts. This suggested that as firms come to know each other over a longer period of time, they tend to include more provisions in their contractual relationships, suggesting a positive correlation between relational governance and formal contracting. Again this suggests complementarity between relational governance and formal contracting. It suggests that different governance mechanisms may work together in real life.

These studies played an important role in influencing the current research to develop a multi-paradigm exchange performance framework and using it to explain why incomplete contracts are used to govern transactions despite their vulnerability to hold up. The studies gave initial indications that formality and informality may co-exist in a relationship and indeed complement each other in ensuring exchange performance. Managers may rely on relational governance for increased protection as contracts become more complex and may also use formal contracts as added safeguards in case relational norms fail to perform. This is more so as relational exchange theory has a dark side, the effects of which may be dealt with by complementing norms with other exchange protection mechanisms.

In summary, unlike TCE and agency theories that protect exchange relationships through formal contracts, the relational exchange theorists (Gulati, 1995; Uzzi, 1997; Granovetter, 1985) argue that opportunism may be reduced by the development of norm based relationships. Relational exchange theory views norms such as trust and commitment as substitutes to vertical integration and/or explicit contracts. Market uncertainties can be addressed through socially orientated relationships (Podolny, 1994). Norms are seen as

enforcers of anti opportunistic behaviour. This has implications for both TCE theory and agency theory. Relational norms help address the problem of bounded rationality and hence opportunism. Thus, like TCE and agency theory formal contract, the relational exchange theory seeks to protect transactions from opportunism. This suggests a complementarity of purpose between the three governance structures, an indication that there is room for a simultaneous application of the three governance frameworks with a view to offer improved protection to exchange relationships.

This notwithstanding, some studies (Claro & Claro, 2008; Masuku & Kirsten, 2004) adopt the traditional relational approach of focusing on relational exchange protection attributes and disregarding the exchange protection qualities of formal contracting. While these studies show that relational norms encourage exchange performance, they fail to account for the use of formal contracts as a governance measure. Hence, like TCE and agency theory, the relational exchange theory falls short of providing a tangible reason for the continued use of incomplete or formal contracts.

However, some studies (Argyres *et al.*, 2007; Ryall & Sampson, 2009) help shed light on the reasons for incomplete contracting despite its limitations. Unlike studies that implement the Relational exchange theory as given and thus treat formal contracts and relational contracts as substitutes or ignore the role of formal contracting in ensuring exchange performance, these studies treat formal and informal governance approaches as complements. The central thesis of these studies is that as contracts become more complex, managers rely on relational governance as an added exchange safeguard. This view has influenced the current study and hence it treats formal contracts and relational contracts as complements.

2.3.4 The Legal System and the Protection of Exchange Relationships

2.3.4.1 Introduction and Background

The legal system is one of the institutions devised by society to create order and reduce uncertainty in exchange (North, 1991). Williamson (2000) argues that these institutions fall into two main categories of formal and informal institutions. The formal institutions are basically the state's legal system and are comprised of the law of the contract and other bodies of the law that shape or impinge upon contractual ordering, and the courts and procedures involved in enforcing contracts (Kahkonen & Meagher, 1997). The informal institutions include customs, mores, social sanctions, traditions and codes of conduct among others (North, 1991; Williamson, 2000). These formal and informal institutions are essentially rules

of the game (Aoki, 2000). They play an important part in guiding and influencing the outcomes of the transacting process because as rules of the game, they reduce the uncertainty involved in human interaction by prescribing the transacting parties' patterns of behaviour (Yeager, 1999). These rules establish and clarify property rights and reduce dispute resolution costs and provide exchange partners with protections against abuse (World Bank, 2010).

The norms, customs, mores and social sanctions, fall under the relational governance mode that was reviewed in the last sub-section and will not be reviewed in this section. Instead, this section focuses on the role of the formal institutions, hereinafter referred to as the legal system, in protecting exchange relationships.

2.3.4.2 The Legal System's Exchange Protection Mechanism

When parties exchange goods or services simultaneously, the need for contract law is small (Chirelstein, 1998). When goods and services are exchanged on a non-simultaneous basis, the need for a system to mediate exchanges arises because in this case, parties promise future performance. But there are uncertainties associated with promises for future performance due to opportunistic nature of transacting parties and incomplete contracting (Williamson, 1985). As discussed under the review of the relational exchange theory, parties may resolve transaction uncertainties through non legal sanctions such as ostracism and dealing with fellow reputable participants only (Juurikkala, 2009). In such cases, the need for legal intervention may be reduced. Legal intervention may be used when controlling opportunism through non legal means is more costly than the judicial alternative (Kostritsky, 2004) or when the legal system is perceived as credible (Zhou & Poppo, 2010) and capable of providing added safeguards to exchange relationships.

The legal system uses a legally binding contract as an instrument for protecting exchange relationships. The contract represents legal commitments that parties to a transaction agree to honour (Mellewigt, Madhok, & Weibel, 2007). It represents promises or obligations that parties to a transaction agree to perform in future (Mayer & Argyres, 2004). It can also be seen as a form of private ordering whereby the transacting parties document the terms governing their relationship (Kahkonen & Meagher, 1997). By enforcing the contract, the legal system helps ensure that trading parties honour their promises (Kostritsky, 2004). It allows parties to coordinate their actions with their trading partners by guaranteeing bilateral commitment to the trading agreement and that in the event of transaction default, the parties can enforce the agreement through the court system (Bridgeman, 2009). It also allows parties

without prior trading history to contract major transactions with reduced fear of opportunistic tendencies such as fraud (Leeson, 2008). The legal system therefore facilitates exchange among anonymous individuals and firms by providing impartial and predictable enforcement of contracts (Kahkonen & Meagher, 1997). This reduces uncertainty.

It can therefore be argued that the legal system minimises the problems associated with bounded rationality, and hence hold-up. This complements the relational theory in that it can be used as an added transaction safeguard measure. It also plays a complementary role to both TCE and agency theories, since these two struggle with possibilities of contract renegotiations and opportunism. By guaranteeing that the government will enforce the agreement (Bridgeman, 2009), the legal system helps curb problems associated with incomplete contracting. It drives incomplete contracts to some degree of completion. This suggests that the legal system complements all the exchange protection mechanisms reviewed so far (TCE, agency theory and the relational exchange theory). It is therefore logical to incorporate the legal system into this research.

The role of the legal system in protecting exchange relationships is also supported by empirical studies. For an example, in a comparative study on the regulation of inter-firm contracting between companies in Germany, Britain and Italy, Arrighetti *et al.*, (1997) concluded that relational contracting involving higher frequency of contracting as well as asset specificity may also be associated with the use of legal enforceability as a form of security. They further pointed out that the role of the legal system in underpinning relational contracting is arguably greater than has been previously thought, and that there are indications that legal regulation plays an important role in fostering inter-firm cooperation. They argue that the law creates an attractive environment within which parties can transact in that it makes provision for future contingencies as well as for legally enforceable sanctions that encourage performance from both parties and discourages opportunistic behaviour. The conclusions of this study have implications for whether the legal system replaces norms or compliments them. The conclusions suggest that the legal system may act as an added safeguard measure in case relational norms fail to provide exchange protection. Perhaps this also helps explain why transacting parties often sign a contract (Beave & Saussier, 2010) even if their relationship is norm based. A related study by Juurikkala (2009) investigated the role of legal and social norms in the governance of contractual relationships in the United States and Taiwan and concluded that legal norms are most relevant and efficient when they are well aligned with social norms.

de Jong, Rosaline and Klein-Woolthuis (2008) studied the governance of high-tech alliances and found that legally enforceable contracts play two important functions in an exchange relationship. First, they safeguard contingencies. That is, they act as a framework for how to react if unforeseen contingencies arise. Second, participants use legally enforceable contracts to show commitment, a view that is also supported by Mellwig *et al.*, (2007). This suggests that while the legal system may be used to enforce contracts in case of transactional default, it may also be used to simply show partners' commitment, which once again shows the complementarity between the legal norms and relational norms. This suggests that norms do not necessarily replace the legal system. Further, drawing on the perspective of the neoclassical contract lens, Aulakh and Gencuck (2008) examined the export-import relationships and found that under conditions of high dependency of either the exporter or the importer on its trading partner. Their main conclusion was that both firms will prefer detailed legally enforceable contracts which provide for the necessary safeguards and guarantees.

These studies therefore show that the legal system provides enforceability of contracts and this helps ensure exchange performance. This has influenced this research to incorporate the legal system into a broader multi-paradigm exchange protection framework.

2.3.4.3 Strength of the Legal System and Exchange Protection

While it is evident that the legal system does protect exchange relationships, empirical research support the argument that strong legal systems provide better exchange protection than weak legal systems. For example, Lerner and Schoar (2005) analysed 210 developing country private equity investments with the key objective of understanding how differences in the enforcement of commercial laws affect financial contracting. They found that transactions vary with the nations' level of legal enforcement capability. In particular, they found that investments in countries with effective court systems have more protections for private equity, while investors in countries with less effective legal systems protect their investments through control measures such as majority ownership and board dominance. This is in line with the current research's proposition that the stronger New Zealand legal system is more likely to better protect exchange relationships than the weaker South African legal system. Another study by Mina (2006) examined the influence of contract enforcement in international lending and debt maturity. The study concluded that countries with good contract enforcement are more likely to get higher levels of lending with longer repayment terms. This indicates that lenders are more comfortable extending credit to countries with good legal systems than to countries with a weak legal system. This again influenced the current research to make a

distinction between weak and strong legal systems. Further, a study by Lu and Tao (2009) used a sample of private businesses in China to investigate the impacts of contract enforcement on the degree of family control of businesses. They found that weak contract enforcement is associated with higher degree of family control of businesses. This is primarily because when contract enforcement standards are low, firms may opt to complement legal enforceability with other governance structures that afford them greater control over the activities of the firm such as family ownership and vertical control.

Laeven and Woodruff (2008) used data from different Mexican states to test the proposition that the quality of the legal system affects the efficiency of the economy and found that the legal system affects firm size by reducing the idiosyncratic risk faced by firm owners. They therefore concluded that better legal systems reduce investment risk which in turn allows for increased efficiency in the allocation of capital. A related study by Du, Lu and Tao (2010) investigated the relationship between the quality of contracting institutions and vertical integration across various cities in China. They found that poorer contracting institutions cause firms to be more vertically integrated. They concluded that given that the quality of contracting institutions is imperfect even in some developed countries, and a major concern in many developing countries, the investigation of the quality of contracting institutions on exchange performance is highly needed. In addition, Ma, Qu and Zhang (2010) used data from 28 developing countries to investigate how judicial quality affects firm exports through relationship specific investments. They found that sound contract enforcement and a good quality legal system significantly encourage export performance of firms that have to invest in relationship specific investments. These studies' findings are in line with the World Bank (2010) assertion that strong legal systems protect exchange relationships better than weak legal systems.

In summary, the above review shows that the legal system plays an important role in protecting exchange relationships. The World Bank (2004) is supportive of this view and empirical studies (Arrighetti *et al.*, 1997; Lerner & Schoar, 2005) show that indeed the legal system does provide protection to exchange relationships. This reduces transaction threats posed by bounded rationality and opportunism. Thus, the legal system compliments the two contract based theories (TCE and agency theory) reviewed in this research through facilitating the enforcement of contracts. It also compliments the relational forms of protecting exchange relationships in that relational contracting involving higher frequency of contracting as well as

asset specificity may also be associated with the use of legal enforceability as a form of added transaction safeguards (Arrighetti *et al.*, 1997).

This notwithstanding, the TCE implicitly casts doubts on the ability of the legal environment to safeguard the exchange relationships. The theory assumes that an outside authority like the courts would not be in a position to adequately figure out the real meaning of what is contained in a contract, thus leading to difficulties in enforcing it (Williamson, 1985). While there may be some truth in this, TCE fails to take into account differences in inter-country legal jurisdictions. Some jurisdictions have greater capacity to enforce complex contracts than others. The risk of opportunism is likely to be higher in a country with a weak legal system than a country with a strong legal system. Agency theory on the other hand fully embraces the legal environment as it relies on a well customised contract to protect the principal from the agent's opportunistic behaviour. However, like TCE, it does not account for the strength or otherwise of the legal environment. This research will therefore incorporate the legal system into the multi-paradigm exchange framework to be developed. The framework will further acknowledge the fact that a strong legal system protects exchange relationships better than a weak legal system. The difference between the effectiveness in contract enforcement in the wine producing countries studied in this research has therefore influenced the adoption of a comparative approach where a country with a weak legal system (South Africa) and one with a strong legal system (New Zealand) have been studied.

2.4 The Wine Industry Value Chain

Although TCE framework has been widely applied in empirical work, surprisingly, only a few studies (Fernández-Olmos, Rosell-Martínez, & Espitia-Escuer, 2009; Fernandez - Olmos, 2008 ; Zylbersztajn & Miele, 2001) have applied the framework within the wine industry. The wine industry is therefore one of the few industries which provide opportunities for further empirical assessment of TCE framework. It is against this background that the current research uses the TCE framework as the basis for studying the exchange relationships between the growers and wineries in South Africa and New Zealand wine industries. As indicated earlier in the study, the choice of the two countries was primarily based on the fact that they are both wine producers and New Zealand has a more efficient legal system than South Africa. This section will therefore review the South African and New Zealand wine industries in terms of industry characteristics and structure. The review will follow the individual countries' industry data reporting styles. For example, in South Africa, grape growers are categorised by tons of grapes produced and wineries are categorised by tons

grapes crushed and are also categorised into private wine cellars, producer cellars and producing wholesalers. The distinctions between these will be elaborated further in this review. In New Zealand, there are no distinct categories of grape growers. However, wineries are categorised by annual sales of wine in litres. The section will then provide a generic value chain of the wine industry but with emphasis on the grower-winery relationship, before discussing the sources of transaction costs within the wine industry. This will be followed by a brief discussion of how agency problems arise and are addressed within the wine industry as well as how relational norms and the efficacy of the courts help address opportunism.

2.4.1 The Structure of the South African Wine Industry

According to South African Wine Industry Information and Systems (SAWIS) annual report of 2009, all grape growers and wineries in South Africa are SAWIS members. SAWIS is an organisation under the control of the South African wine industry and its main functions are to collect, process, disseminate industry information and represent the general welfare of its members. This suggests a close relationship between grape growers and wineries because they belong to one umbrella organisation. There are 3,839 primary wine producers (grape growers) in South Africa. The majority of these (2,967) or 4.02 percent produce 500 tons of grapes or less per annum, while only 7 (0.18 percent) produce over 5,000 – 10,000 tons. Table 2.2 below summarises the distribution of the South African grape growers by production category.

Table 2-2: South African grape producers per production Category (2009)

Tons	Number of producers	%
1 - 100	1,544	40.2
>100 – 500	1,423	37.4
>500 - 1000	498	13.0
>1000 - 5000	367	9.6
>5000 - 10000	7	0.18
Total	3,839	100.0

Source: SAWIS, 2009

These grape producers are made up of: (a) growers that part of a cooperative or a shareholding company, (b) independent grape growers that do not have wine making facilities and do not hold any shares in wineries, and (c) vineyards that are wholly owned by wineries in vertically integrated firms. In addition, there are 585 cellars (wine producers). Of these, 58 are producer cellars or wineries that are owned by grower shareholders. They get their grapes mainly from their own shareholder growers. The other category is the private wine cellars and they total 504. These are mainly fully independent firms, vertically integrated from vineyard to export (Ponte, 2009). However, they may also source grapes from cooperative grower

shareholders and also the spot market. The last category of wine producers in South Africa is the producing wholesalers. These produce limited varieties of high quality wines through their own grapes but mainly deal in wines made by both producer cellars and private cellars. They essentially perform two functions in the chain, that of wine production and marketing. Published statistics do not show any data on import or export of grapes, suggesting that most if not all grape requirements are met through locally produced grapes.

Table 2-3: The number of South African Wineries (2009)

Winery Size in Tons of Grapes Crushed (2008)	Total	%	Private Wine Cellars	%	Producer Cellars	%	Producing Wholesalers	%
1 - 100	267	45.6	260	51.6	-	-	7	30.4
>100 - 500	150	25.6	144	28.6	-	-	6	26.1
>500 - 1000	50	8.5	47	9.3	1	1.7	2	8.6
>1000 - 5000	63	10.7	50	9.9	10	17.2	3	13.0
>5000 - 10000	15	2.6	3	0.6	10	17.2	2	8.6
>10000	40	6.8	-	-	37	63.8	3	13.0
Total	585	100.0	504	100.0	58	100.0	23	100.0

SAWIS, 2009

2.4.2 The structure of the New Zealand Wine Industry

Growers and wineries in New Zealand are members of the New Zealand Winegrowers Association, an organisation whose main objective is to advocate for the welfare and interests of wine industry members. This means that industry members are close and guided by common goals, such as maintenance of quality standards set by the umbrella body. There are 1128 grape growers in New Zealand who supply the industry with grapes. As with South Africa, published statistics do not show any data on import or export of grapes, and this is taken to mean that most if not all the grape requirements are met through locally produced grapes. Further, although MAF Biodiversity New Zealand (2009) does not provide any statistics on imported grapes in New Zealand, it states that grapes can currently only be imported into New Zealand from countries covered by the import health standard, which are, USA, Italy, Australia, Mexico and Chile. This suggests that while wineries may not be sourcing grapes from the international market, they have an option of doing so if the need arise. There are 643 wineries in New Zealand, and they are classified into three categories of annual sales of wine. Category one captures wineries that sold less than 200,000 litres of wine in the last harvest year, while categories two and three capture wineries that sold between 200,000 and 400,000 litres and those who sold in excess of 400,000 litres respectively. Table 2.4 below presents the structure of the New Zealand wine industry.

Table 2-4: New Zealand growers and wineries (2009)

Growers and Wineries	Number of producers	%
Grape growers	1128	100.0
Wineries - Category one (annual sales not exceeding 200,000 litres)	577	51.1
Wineries - Category two (annual sales between 200,000 and 400,000 litres)	60	5.3
Wineries - Category three (annual sales exceeding 4,000,000 litres)	6	0.5

Source: NZWINE, 2009

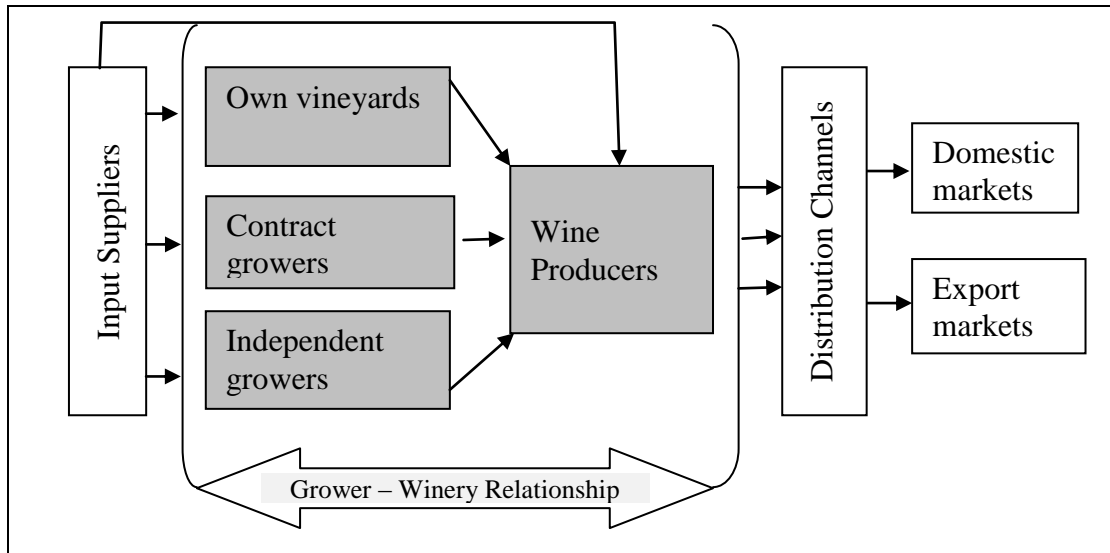
There are no indications of special relationships between certain groups of grape growers and wineries in New Zealand as is the case in South Africa where, for example, some wineries source grapes mainly from the shareholder growers. However, the literature provides some preliminary insights into the New Zealand wineries' grape sourcing strategies. For example, Wilson and Goddard (2004) observe that major players within the New Zealand wine industry create value by making significant investments into the strategy of vertical integration. For example, Montana and Nobilo are said to have made direct asset purchases and Villa Maria Estate to have used publicly owned investment vehicles to gain control of vineyards. This observation is supported by Gwynne (2006) who argues that Montana sources grapes from its vineyards located in growing areas such as Hawkes Bay, Gisborne, North Canterbury and Marlborough. Further, NZWINE (2010) describes the structure of the New Zealand Wine Industry as vertically integrated with functional specifications such as specialist processors and vineyard contractors. This suggests some degree of integration of grape supply and contracting within the New Zealand wine industry.

2.4.3 The Wine Value Chain

The value chain encompasses all the activities associated with the flow and transformation of goods from the raw materials stage through to the end user, as well as the associated information flow (Atkin & Affonso, 2004). It represents a coherent link between input supply, production, trade and consumption (Ponte, 2007). The value chain can therefore be said to be a series of linked activities that link suppliers and customers. The wine industry literature on South Africa (Ponte, 2007) and New Zealand (Wilson & Goddard, 2004) as well as Atkin and Affonso's (2004) generalised supply chain, present differing but close versions of the wine value chains. The slight differences may be due to the focus of the individual authors. Yet the different versions have one common thread, the "grape-grower relationship", and this relationship is central to this research. Based on this literature, below is the current author's attempt to present a simple generic wine industry value chain, with of course, particular

emphasis on the “grape-winery” link of the value chain. Detailed value chains for the South African and New Zealand wine industries are presented in Ponte (2007) and Wilson and Goddard (2004) respectively.

Figure 2-1: A simplified wine industry value chain



Adapted from: Ponte (2009), Wilson and Goddard (2004).

The chain indicates that some input supplies (e.g. water and fertilisers) are used in the grape production process. The resultant grapes are then supplied to the wineries and together with other input supplies (e.g. fermenting tanks) are then used by wineries to produce wine, which is then taken to both domestic and international markets through the distribution channels. However, as highlighted above, this research is primarily concerned with the critical grower-winery relationship which captures the part of the chain that produces significant value that ensures the supply of grapes to the wineries. This part is identified as the “grower-winery relationship in figure 2-1 above and its component parts are shaded.

2.4.4 The Grape Grower-Winery Value Chain

Grape supply within the wine industry mainly takes any or all of the following three forms Wineries source their grapes through (a) own vineyards; (b) contractual arrangements with grape growers or (c) compete in the open market for the grapes produced by independent growers (Scales *et al.*, 1995; Somogyi *et al.*, 2010). The grape sourcing process involves transaction costs that wineries must minimise (Hobbs & Young, 2000). The process of how these transactions costs arise may be best captured through the review of TCE within the context of the wine industry.

2.4.5 The Wine Industry and the TCE theory

As indicated in the review of TCE, transaction costs emanate from the transaction properties of asset specificity, uncertainty and frequency. However, as with the main review of TCE, it is important to first discuss TCE behavioural assumptions of opportunism or self interested behaviour and bounded rationality in the context of the wine industry before discussing how the transaction properties lead to increases in transaction costs within the wine industry because these assumptions contribute to how all the three transaction properties increase transaction costs of sourcing grapes.

Opportunism arises due to agents' self interest (Williamson, 1985) and it is also a potential problem for the wine industry. Hayward and Lewis (2008) acknowledge the importance of production practices in influencing the quality of the grapes. They point out that vineyard management decisions (site selection, vine spacing, monitoring fruit development, selecting varieties, removing bunches, thinning and other practices) are important for the production of good quality grapes, and by extension, good quality wines. For an example, Smith and Whigham (1999) argues that it is widely recognised within the wine industry that the less grapes harvested per hectare, the better the quality of the grapes. An opportunistic grower may decide to produce larger volumes of grapes per hectare at the expense of quality, and sell the grapes at the price of good quality grapes. Since good wine requires good grapes, this will compromise not only the quality of the wine, but also the integrity and ultimate market position of the wine maker. The wine producer will have fallen victim to the grape producer's opportunistic behaviour.

Bounded rationality may come in different forms within the wine industry. As the above discussion shows, the grower's behaviour may significantly influence the ultimate quality of the wine. This brings in some risk that needs to be taken into account in the design of the contractual relationships between grape producers and wine makers. However, due to bounded rationality, Williamson (2008) states that it is impossible to anticipate all possible grower behaviours that may compromise the quality of wine and lock them into the *contract ex ante*. Asset specificity is common within the wine industry. Wine production requires huge capital expenditures including an insulated hot room for control of secondary ferments (e.g. New Zealand Wine Company), bottling hall with bottling line, warehouse, crushers, fermenting and storage tanks and cooling plant (New Zealand Wine Company, 2007). This represents Williamson's (1985) physical asset specificity. Wine making also requires specialist skills such as grape processing, control of the fermentation process and bottling

(Biggsby, Trought, Lambe, & Bicknell, 1998). This represents Williamson's (1985) human asset specificity. Further, when studying the determinants of make or buy decisions by wineries in the Rioja region, Fernandez-Olmos, Rossel-Martinez and Espitia-Escuer, (2009) used distance between the vineyard and the winery to represent Williamson's (1985) site asset specificity. Uncertainty within the grower-winery relationship may arise due to many factors including climatic conditions such as rain and other risk factors such as virus contamination, the possibility of growers' default to deliver quality grapes at agreed prices and time and inappropriate vineyard practices (Hayward & Lewis, 2008). These may have adverse impact on the quantity and quality of vintages (Zylbersztajn & Miele, 2001). Frequency of the transaction is also considered important within the TCE framework. Frequency refers to the regularity of the transaction (Williamson, 1985). The nature of the wine industry makes it irrelevant to measure the effects of the frequency, as the regularity of transactions is not influenced by the deliberate firm decisions irrespective of the governance choice, but by the yearly cycle of grape production. That is, because "the vineyard is governed by nature, its schedule is also adjusted to the seasons" (Thomas, Greenspan, Thach, & Matz, 2004, p. 34). Thus, the transactions follow the season, and thus occur with similar frequency for all the wineries regardless of the choice of the governance structure.

The above discussion shows that in line with TCE, transaction costs within the grower-winery relationship may increase due to the transaction properties of asset specificity and uncertainty. This research is of the view that these transaction costs can be reduced by incorporating the exchange protection properties of agency and relational theories as well as the efficacy of the legal system. The next three sub-sections discuss how these exchange protection properties help reduce transaction costs within the grower-winery relationship.

2.4.6 The Wine Industry and Agency Theory

In a world of perfect information, wineries would know the capabilities and practices of growers, and this would help design contracts that reward growers according to their capabilities and effort. However, wineries operate with limited information because some of the growers' actions are difficult to observe, and part the growers' performance is influenced by random factors that are beyond the control of growers (Bergen *et al.*, 1992). This may make wineries vulnerable to the growers' opportunism as growers may shirk and shift the blame for poor performance to random events. Because the wineries have no way of verifying whether or not the any random event occurred, the wineries may still have to pay the grower despite the poor performance. Hueth *et al.*, (1999) have suggested four ways that may help

the winery prevent the grower from acting opportunistically. First, the winery may wish to monitor the growers' activities by having periodic visits to the grower. The field visit is not normally only for policing purposes, but also for sharing vital information on the market, other growers, to discuss expected yields and harvest times as well as to maintain a presence on the vineyard in order to ensure that the contract is extended into the next year. Second, the winery may place some controls on which inputs should be used such as the grape variety and choice of irrigation system and any other technologies used. Third, the winery may put in place quality measurements criteria. These include investing in highly sophisticated quality monitoring systems, such as procedures for sampling and testing grower(s)' produce, and putting in place bonuses and penalties that influence the grower's behaviour. Fourth, the winery may pay the grower on the basis of the down-stream price (e.g. by a supermarket) to the winery, thus making growers residual claimants for their actions.

2.4.7 The Wine Industry and Relational Exchange Theory

Relational exchange theory is concerned with strategic alliances of firms in which knowledge transfer between members of the network is encouraged for the benefit of all members (Gwynne, 2008; Visser & Langen, 2006). It emphasises achieving good working relationship through trust and commitment. Within the wine industry, the move towards this cooperative governance/strategic alliances has largely been due to international competitive pressures (Sutton-Brady, 2008; Tipples, 2010), where firms have to start and maintain overseas relationships as a way of securing international markets. It is against this background that Batt and Wilson (2000) observed that due to international and domestic market pressures, Australian wineries are developing and maintaining close and cooperative relationships with their grape growers. This is expected to help them become more efficient and cost effective. This view is supported by Somogyi *et al.*, (2010) who studied the long-term grower/winery relationships in the Australian wine industry and concluded that relationally engaging grape growers not only creates benefits for growers and wineries, but also the industry as whole. This suggests that exchange performance between growers and wineries can be improved through relational exchange governance of transactions.

2.4.8 The Wine Industry and the Efficacy of the Legal System

The legal system facilitates transaction performance between trading partners through the enforcement of contracts (Kahkonen & Meagher, 1997). It has been observed that one of the governance mechanisms used by wineries to source grapes is through contracts (Scales *et al.*, 1995; Somogyi *et al.*, 2010). Since contracts represent legal commitments that grape growers

and wineries agree to honour (Mellewigt *et al.*, 2007), it is expected that the legal system would help ensure contract enforcement between grape growers and wineries. This would help ensure that growers do not act opportunistically. However, in line with the argument raised during the review of the legal system, the stronger New Zealand legal system would be expected to offer better protection to grape-grower relationships than the weaker South African legal system.

2.4.9 Empirical Studies on Grape Coordination Strategies

Empirical literature focusing on the “grower-winery” part of the wine industry value chain is very thin. This is particularly so for South Africa and New Zealand, hence this empirical review is not necessarily specific to these two countries. What is apparent from the review, however, is that there are transaction costs within the wine industry and different exchange protection frameworks are occasionally used to reduce these costs or to protect exchange relationships against opportunism. For example, Meissenheimer, Karaan and Vink (2001) studied the sources of transaction costs within the South African wine industry. They noted that some grape growers belonging to cooperatives deliberately produced low quality grapes by engaging in mass grape production because all members of the cooperative were paid the same price regardless of the quality of the grapes. This confirmed the existence of opportunistic behaviour within the wine industry.

Fernandez-Olmos, *et al.*, (2009) studied the determinants of governance choice within the wine industry in the Rioja region of Spain. The determinants of governance choice that they focused on were the TCE variables of physical and dedicated asset specificity as well as behavioural and environmental uncertainty. They found that both physical and dedicated asset specificity led to vertical integration as a way of protecting assets from opportunism. They also found that the efficacy of market governance decreases as behavioural uncertainty increases. Lastly, they found that environmental uncertainty has a positive effect on vertical integration when specificity is involved. They concluded that their results provide strong support for the argument that transaction cost considerations influence integration decisions. However, this study only captured the TCE exchange protection mechanism and did not consider other exchange frameworks such norms and incentives’ as well as the efficacy of the legal system in reducing transaction costs or controlling opportunism.

Other studies (Sutton-Brady, 2008; Zylbersztajn & Miele, 2001) have either avoided or helped address the limitations of the previous study by considering the value of relational

exchange theory in controlling opportunism. Zylbersztajn & Miele (2001) studied the stability of contracts in Brazil. They used the average number of transactions between the grower and the winery as the dependent variable. Independent variables were measures of asset specificity including age of the vineyard which was meant to capture product quality and the distance between the grower and the winery, which was used to capture site specificity. The other independent variable was whether or not the winery and grape grower were members of a cooperative (captured as a dummy variable), which represents a relational norm based relationship. The results showed that short distances were more likely to result in stable contracts than long distances, which confirms the TCE propositions. The relational aspects, captured through the dummy variable were also positive and significant, suggesting that transacting parties that belonged to a cooperative were more likely to have stable contractual relationships. Further, Sutton-Brandy (2008) interviewed 15 Australian wineries with the key objective of studying the stability and change in business networks in Australia (40% of which had been trading with each other for 5 years or more). None of the wineries had a written contract with their suppliers, yet they have managed the relationship for a long period. The wineries emphasised that the reason for the longevity of their relationship was the importance of maintaining good relationship with their suppliers. That is, they were all deriving benefits, which is in line with the relational exchange theory.

While these studies considered both the relational and TCE antecedents in the exchange protection framework, other studies (Fernandez - Olmos, Martinez - Rossell, & Espitia - Escuer, 2008; Fraser, 2005; Goodhue *et al.*, 2003) considered the importance of agency theory monitoring and incentive mechanisms in the design and maintenance of governance relationships. Goodhue *et al.*, (2003) analysed the relationship between product quality and contracting choices using data from the California wine growers. They found that written contracts for high quality grapes were more likely to include provisions aimed at monitoring the production process, while written contracts for low quality grapes were more likely to include explicit financial incentives for sugar content and other attributes. A related study by Fraser (2005) examined the grape supply contracts in Australia. It found that among others, wineries in regions that produce low quality grapes place greater reliance on grape quality assessment to determine bonus and penalty payments compared to wineries in higher quality regions. They also found that contracts used by wineries in higher quality regions put greater emphasis on winery involvement in vineyard management. These studies' findings therefore suggested that financial incentives were more likely to be used as a mechanism for controlling

opportunism by low quality wineries while the use of monitoring is associated with high quality wineries.

What emerges from the empirical review of the grower-winery relationship is that wineries generally use more than one exchange protection framework to manage exchange relationships. In particular, agency and relational considerations were found to be used to manage transactions. However, none of the studies employed more than two paradigms at any one time in the analysis of the relationships. Second, none of the studies considered the efficacy of the legal system in protecting exchange relationships. This reinforces the current research's resolve for developing a multi-paradigm exchange protection framework that better protects transactions than any paradigm in isolation. The lack of studies that have considered the contract enforcement mechanism of the legal system further encouraged this research to incorporate the legal system as well.

In summary, wineries may source their grapes through own production, contractual arrangements with other wineries and through the spot market (Somogyi *et al.*, 2010). However, in line with TCE, due to asset specificity and uncertainty, this involves transaction costs. Preliminary indications are that wineries reduce transaction costs by using different and overlapping exchange protection frameworks such as monitoring and providing incentives to growers and building long term relationships between growers and wineries. This suggests that a multi-paradigm approach to protecting grower-winery exchange relationships is needed.

2.5 Chapter Summary

This chapter has reviewed the literature on three theoretical frameworks concerned with the protection of exchange relationships. It has further reviewed the literature on the role of the legal system in protecting transactions. The review was undertaken on the backdrop of a realisation that the theories and the legal system have a common goal protecting exchange relationships, albeit through different means. Key to the review was to identify how the different theories and the legal system protect exchange relationships, identify the limitations of the theories in protecting exchange relationships and decipher any complementarities between the theories and develop a theoretical framework that takes into account these complementarities in the next chapter.

The review revealed that TCE protects transactions through incomplete contracting. However, the theory was found to have limitations that may expose transactions to opportunism. First,

given that agents are assumed to be opportunistic and contracts are incomplete, the theory fails to offer meaningful contractual protection to transactions. Transactions are forever exposed to hold-up. Second, since the theory fails to provide adequate contractual protection and also argues that vertical control is the preferred governance mode when contracts expose transactions to hazards, it fails to explain the observed continued use of contracts despite their potential hazards. This research suggests that other complementary exchange frameworks help ensure that opportunistic agents do not always take advantage of their vulnerable trading partners. The review has also revealed that agency theory protects exchange relationships through designing a contract in such a way that the agents' interests or goals are aligned with those of the principals. The contract has in-built monitoring and incentive mechanisms that help align the agents' goals with the principals. This reduces the incentive for the agents to act opportunistically and thus helps draw the TCE contract towards completion. That is, the TCE incomplete contract is complemented by agency theory monitoring and incentive contract.

On the relational exchange theory, the review has shown that it shuns formal contracting as a means of protecting exchange relationships. Instead, the theory advocates for norm based protection measures. Norms provide added safeguard measure to transactions, and this complements the exchange mechanisms proposed by both TCE and agency theory. Therefore, as with agency theory, this draws the TCE contract further towards completion. The review has also shown that the legal system offers protection to transactions by threatening to punish for opportunistic behaviour, and hence reduces threats posed by contract incompleteness and opportunism. It therefore also compliments the TCE framework in protecting exchange relationships and, like agency theory and relational exchange theory, further helps drive the TCE contract towards completion.

Hence, the exchange protection mechanisms provided by agency theory (monitoring and incentives), relational exchange theory (norms), and the legal system seem to all push the TCE incomplete contract towards completion. This research therefore argues that the continued use of contracts despite their vulnerability to hold-up is because contracts are complimented by support mechanisms from the agency and relational frameworks as well as the legal system. This line of thought informs the development of the theoretical framework for this research in the next chapter. Further, the review of the wine industry has shown that wineries generally use more than one exchange protection framework to manage exchange relationships, an indication that the exchange mechanisms may be complementing each other in protecting exchange relationships within the wine industry. However, to date, no study has

incorporated the legal system in its exchange protection framework, and this encouraged the current research to incorporate the legal system in its analysis.

Chapter 3

Theoretical Research Framework and Hypothesis Development

3.1 Introduction

The preceding chapter has reviewed the literature on TCE, agency and relational exchange contracting frameworks, as well as the contract enforcement mechanism of the legal system. These frameworks have a common goal of protecting exchange relationships against opportunism. This chapter draws from the findings of the literature review and develops a theoretical framework for this research.

3.2 Development of the Theoretical Framework

The literature review showed that even though TCE incomplete contracting framework exposes transactions to opportunism, contracts are still widely used (D'Silva *et al.*, 2009; Dawes *et al.*, 2009). Vertical integration is not always a natural response to the exchange hazards posed by bounded rationality and opportunism (Carter & Hodgson, 2006). This chapter develops a multi-paradigm exchange protection framework that is expected to reduce exchange hazards that arise due to TCE incomplete contracting framework. The framework is also expected to help explain the continued use of contracts despite their vulnerability to hold up. This framework will attempt to capture the interplay and complementarities of the exchange protection properties of TCE, agency theory, relational exchange theory and the legal system.

The integrated exchange framework concurs with TCE that transactions are carried out within the market when specific assets are not involved and that contracts are used once specificity increases. However, unlike TCE that argues that increased asset specificity would drive transactions into the firm, this framework argues that this is not necessarily the case. Contract use is still prevalent (Fraser, 2005) despite the limitations associated with contract incompleteness. The theoretical framework developed for this research therefore argues that contracts are more complete than TCE envisages. As such, firms are confident that contracts provide better exchange protection than TCE would have us believe because the TCE incomplete contract is driven towards completion by the exchange protection complementarities provided by monitoring and incentives, relational norms and the threat of

legal intervention in the case of contractual violations. The framework further makes a distinction between a strong and a weak legal system. In line with the World Bank (2010), it argues that a strong legal system should better protect exchange relationships than a weak one (World Bank, 2010). The interplay of all these theoretical underpinnings, together with the legal system not only provides an improved contractual framework but also a better understanding of why firms use incomplete contracts despite their apparent vulnerability. Below is the development of the multi-paradigm exchange framework. The development process starts with the TCE as the base case scenario and then integrates the other two theories as well as the legal system. The process will culminate in an improved contract than the TCE incomplete contract.

3.2.1 The Base Case Scenario

TCEs prediction of governing transaction through the spot market in the absence of specific assets and resorting to the contractual governance mode once specific assets are involved is the starting point. Since TCE assumes bounded rationality and opportunism, contractual hazards are inevitable. Contracts are incomplete. Hence the base case scenario exposes exchange relationships to opportunism. This research argues that the security of transactions can be improved by adding other exchange safeguards to the base case scenario, hence the integration of agency theory, relational exchange theory and the legal system's contract enforcement mechanism to the base case or TCE incomplete contracting framework. The base case contract therefore takes the form:

“Contract = Specified duties and obligations (TCE incomplete contract)”.

3.2.2 Integration of Agency Theory

Integrating monitoring and incentive mechanisms into the base case scenario is expected to result in an improved contracting framework since incentives and monitoring help reduce principal-agent goal misalignment (Tan & Mahoney, 2006) and therefore reduce exposure of transactions to opportunism. This is so because goal alignment helps reduce the need for *ex post* re-negotiations, and thus reduces exchange hazards associated with incomplete contracts. The resultant contract has both the coordination properties of the TCE incomplete contract and the Agency theory exchange protection mechanisms of monitoring and incentives. It therefore offers better protection to transactions than the original base case or TCE incomplete contract. The resulting contract takes the form:

“Contract = Specified duties and obligations (TCE incomplete contract) complemented by monitoring and incentives (agency theory contract)”.

However, the integration of the agency contract comes with the monitoring and incentive costs, which are exacerbated by environmental uncertainty as under high levels of environmental uncertainty, the client has to pay substantial amounts to entice the contractor to accept the environmental risk. If left unresolved, these costs would reverse the gains of monitoring and incentives, and restore the TCE incomplete contract, which would require organisation within the firm, *i.e.* vertical control. However, this research does not expect these costs to lead to vertical integration because, as argued below, the integration of the relational exchange theory helps mitigate them, and therefore further increase the stability of contracts.

3.2.3 Integration of Relational Exchange Theory

The relational exchange theory aligns the interests of the agent with those of the principal by governing exchange relationships through adherence to relational norms. With this governance mode, normative behaviours such as good will, sharing of information and the expectations for future mutual benefits are all expected to help ensure that the risk of opportunism is minimised. This helps reduce the need for monitoring, and thus reduce monitoring costs that arise due to environmental risk. Further, the expectation for future mutual benefits and cooperation may help keep the bonus payments down as high bonus payments may compromise the continuation of the relationship between the actors. Thus, relational exchange theory not only complements the TCE duties and obligations based contract, but also helps address agency theory weaknesses by minimising monitoring and bonus payment costs. The result is a further improved exchange protection framework that is supported by TCE duties and obligations, agency theory monitoring and incentives and relational exchange theory norms. The contract takes the form:

“Contract = Specified duties and obligations (TCE incomplete contract) complemented by monitoring and incentives (agency theory contract) as well as relational norms (relational exchange contract)”.

This contracting framework is further improved by integrating the role of the courts or legal system in protecting exchange relationships.

3.2.4 Integration of the Legal System

The legal system protects exchange relationships by ensuring that contracts are enforced (Kahkonen & Meagher, 1997). This may discourage opportunism because dishonest actors

may fear facing the consequences of their actions. This complements incomplete contracting because court enforcement provides guarantees that the state may enforce the agreement in the event of one party reneging on the agreement (Bridgeman, 2009). However, the strength of the legal system varies between countries, with many developing and transitional economies having weaker legal systems than developed countries (World Bank, 2008). Even when the legal system is weak, firms still sign contracts (Beave & Saussier, 2010) but then supplement contractual exchange protection with alternative or non-state forms of enforcing business agreements (Vinogradova, 2006). For example, Li, Xie and Peng (2010) studied the formal and social control mechanisms in domestic and international buyer-supplier relations in China and found that social and formal control mechanisms are complements in international relationships. Norms that firms may use include restricting access to the trading network to only those members who have continuously shown commitment to quality through previous transactions (Podolny, 1994). Also collective (peer) sanctions can occur where a group of traders may impose group sanctions on a member or members who violate group norms and values (Borgatti *et al.*, 1997). This shows that norms may play an important role in providing added exchange protection in situations where the legal system is weak. Thus integrating the legal system not only helps improve contractual safeguards, but it is also complemented by norms in cases where the legal system is weak or inefficient. The result is a further improved contracting framework that takes the form:

“Contract = Specified duties and obligations (TCE incomplete contract) complemented by monitoring and incentives (agency theory contract), relational norms (relational exchange theory contract) as well as court enforcement mechanisms.

The above contract framework is therefore the one that is developed and adopted for this research. It appreciates the exchange protection qualities of TCE incomplete contract, agency theory monitoring and incentives, relational exchange theory’s norms and commitments as well as the threat of enforcement provided by the legal system. The support offered to the TCE contract by all these exchange frameworks help ensure the stability of contracts and thus reduces the need to internalise transactions even when transactions are exposed to hazards associated with incomplete contracting.

It is important to point out that removing any of the additional mechanisms proposed in this multi-paradigm exchange protection framework would result in the weakening of the framework and removing all would collapse it back to the base case scenario or the TCE

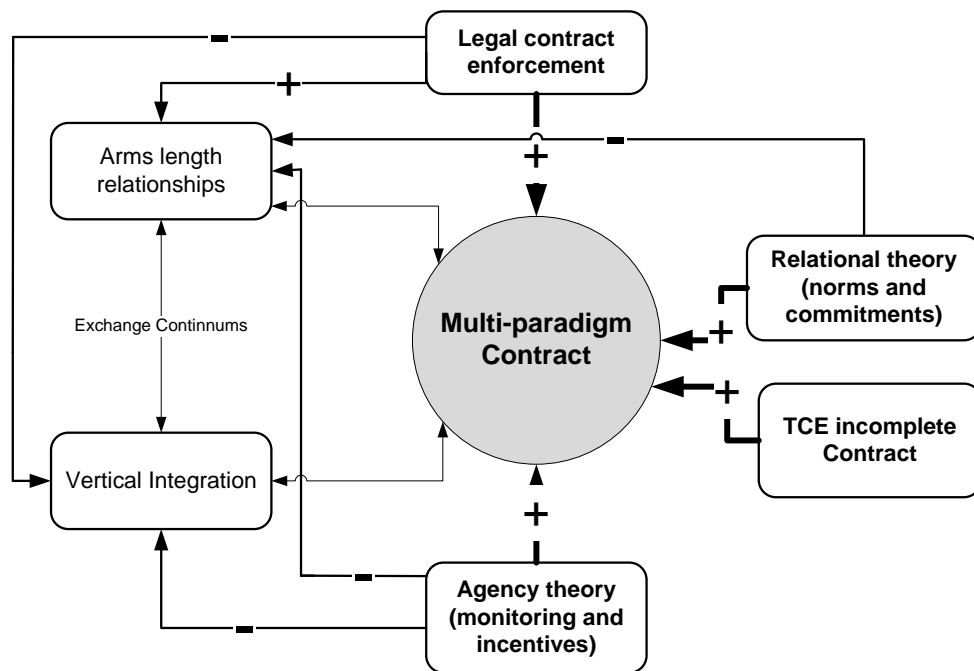
incomplete contract. The integrated exchange framework discussed above is presented in the table below.

Table 3-1: The multi-paradigm theoretical framework

	Transaction Cost Theory	Agency Theory	Relational exchange theory	Legal System	Multi-paradigm Theoretical Framework
Objective:	Reduce actors' opportunism.	Reduce agent's opportunism.	Reduce actor's opportunism	Enforce agreements	Offers a multi-variable protection of exchange relationships
Modalities of achieving the objective	Complex contracting to try to capture as many contingencies as possible.	Goal alignment (incentives and monitoring) to ensure similar goals	Building of norm based relationships to reduce the incentive for cheating.	Enforcing contract violation remedies, even if it means force (fiat).	Integrated approach encompassing, complex contracting, goal alignment, trust and court contract enforcement to provide a holistic approach to exchange protection.
Behavioural assumptions	Actors are self centred and are always ready to cheat and deceive in their quest to meet their self interest.	Principals and agents are self interested and thus have conflicting goals. Agents are risk averse and principals are risk neutral.	Trading partners are cooperative and have common goals. E.g. both want to engage in future transactions.	Actors are self interested, hence the need for a third party mediation to control their opportunistic tendencies.	Trading partners may be both self-centred and common goal oriented. Thus, no single approach is enough to address opportunism, hence the need for an integrated approach.
Theoretical focus	The transaction	The contract	The relationship	Contract enforcement	Exchange environment. That is, the transaction, contract and relationship.
Nature of relationships	Arms length for non asset specific transactions. Otherwise adversarial relationships requiring strategic interventions such as complex contracting and vertical control.	Adversarial relationships requiring an optimal contract that aligns principal and agent's goals.	Cordial relationships based both on past interactions and expected future interaction and mutual benefit.	Adversarial relationships, hence the need for third party enforcement.	Relationships can either be cordial, adversarial or have elements of both, requiring an integrated approach (strategic, goal alignment, mutual norms based and third party enforcement) to address opportunism.
Time Dimension	Short term for non asset specific transactions and long term for asset specific transactions.	<i>Ex ante</i> – with all incentives and monitoring tools agreed before signing the contract. No <i>ex post</i> re-negotiations.	Long term – with relationships built over time and expectations for continuation of the relationship.	Instantaneous. I.e. when the principal calls for contract enforcement. This assumes an efficient legal system	Short and long term. The integrated approach ensures that appropriate tools are used as and when the need arises. That is, it moderates both <i>ex ant</i> and <i>ex post</i> time dimensions.

The model for the above theoretical framework is represented below.

Figure 3-1: A conceptual model of the multi-paradigm framework



The above model suggests that in real life, transactions that are free from specificity are carried out through the arms-length governance structure (Lambert *et al.*, 1996; Williamson, 1991). Once transactions involve specific assets, companies use the multi-paradigm contract to protect exchange relationships. This contract is more resilient than the TCE incomplete contract. That is, companies safeguard exchange relationships through a combination of the TCE contract which specifies duties and obligations, agency theory monitoring and incentives mechanism, relational theory norms and commitments as well as the efficacy of the legal system. Thus, the day to day contract used by firms is a multi-paradigm contract but not a typical TCE incomplete contract. As stated above, this contract is more resilient than the TCE contract and this may explain why firms use contracts even though in purely TCE context they expose exchange relationships to opportunism. Firms also have an option to internalise transactions (vertical integration). This governance mode is used when companies believe that potential contractors cannot meet the required standards. They do not necessarily integrate to control opportunism; they integrate to ensure certain standards are achieved. Thus, vertical integration is more a response to concerns about contractors' capabilities rather than deliberate intentions to mislead or take advantage of the contracting partner(s). Hence firms have the options of using the spot market/arms-length governance mode, multi-paradigm contract (which includes the exchange protection qualities of the TCE incomplete contract, agency theory, relational exchange theory and the legal system) and vertical integration.

This notwithstanding, the framework developed for the current research cannot be said to be faultless or complete. While it is expected to provide better exchange protection than the TCE contracting framework, it is not free from problems associated with bounded rationality and hence this assumption is still valid even with the new framework. That is, it does not cover all possible future contingencies. However, the new framework helps reduce the problems that arise due to bounded rationality or contract incompleteness by complementing the TCE contract with other exchange protection mechanisms.

3.3 Hypothesis Development

Based on the above theoretical framework, the following hypotheses were developed. This was done by way of summarising the above discussion, gradually showing how the complementarities between the four exchange protection frameworks work out into testable hypotheses.

The TCE contracting schema argues that opportunism is more likely to arise when specific investments are involved. In the absence of specific assets, the spot market is the ideal governance choice as governance is accomplished through competitive market prices, and any disputes can be handled by court awarded damages (Williamson, 2002). This means that courts have a role in facilitating spot market transactions. A bit of clarification is warranted here because in truly discrete exchanges, parties would be strangers that just happened to meet by chance and would hope never to meet again (Macneil, 1978), which would mean no role for any future court enforcement. Macneil (1978) argues that this is only possible under barter of goods as the exchange of money between partners represents some form of social structure. He further argues that bargaining about quantities and other aspects of the transaction can erode its discreteness, which requires that the construct be modified for it to reflect a reasonably accurate picture of actual economic life. Finally, he observed that when modified, the construct will retain substantial discreteness but no longer have characteristics of an entirely discrete transaction. This suggests that discreteness is effectively impractical in real life but is useful for theoretical analysis (Webster, 1992), a suggestion that a real life or practical market transaction is better represented by a move away from the discrete transaction. This would imply possibilities of transacting parties meeting again but without any relationship, better captured as arms length relationships in Lambert *et al.*, 's (1996) continuum. This means that the applicable legal recourse is general law (Macneil, 1978), which applies to TCE when specific investments are not involved. The point being made here is that the legal system has a role to play in enforcing specificity free market transactions, and

that these are not as discrete as portrayed by neo-classical theory's perfect market, but that there is a possibility of repeated transactions.

In many cases however, actors have to invest in specific assets, which may expose transactions to holdup. To protect transactions against hold up, TCE prescribes contracting, but given the fact that contracts are incomplete and should the contractual safeguards break down due to this contract incompleteness, transactions may then be taken from the market into the firm (Williamson, 2002). Since actors are assumed to be self-interested, any opportunity for deceit will be taken when perceived payoffs are attractive. Such opportunities always exist because contracts are incomplete. In the face of incomplete contracts, the expectation is almost no contracting, yet contracting is still prevalent (Goodhue *et al.*, 2003). This research proposes that this is because other theoretical underpinnings safeguard transactions over and above the TCE incomplete contract. For example, incentive alignment as proposed by agency theory provides added transaction safeguards. Incentives and the monitoring processes align trading partners' goals, which reduce opportunism because if the two trading partners have similar goals, there seems to be no need for the other party to want to expropriate rents from the other party's investments on assets. Thus, incorporating the agency theory's incentive and monitoring framework with TCE incomplete contract pushes transactions to the market and away from the internal structures of the firm. This partially explains the less than expected vertical integration despite the risk of opportunism. However, one of the problems with incentive and monitoring is that environmental uncertainty leads to increased monitoring and bonus payment costs, which encourages internal organisation and hence less contracting. Relational governance counters this, as for example, in a trust based relationship, monitoring costs are kept low because trust reduces the need to check every time whether the other party is really doing what they promised to do. This view is supported by Lyon (2000, p. 664) who observes that "trust plays a major role in reducing transaction costs, especially in situations of long distance trade, through reducing the need for monitoring and information". Relationally induced reduction of monitoring costs therefore encourages contracting. Thus, the complementary relationship between formal and relational contracts better ensures exchange performance. This helps address Granovetter's (1985) criticism of agency theory that it is under-socialised as it does not account for prior meeting of trading partners, which may reduce and even eliminate goal congruence between the principal and the agent.

Lastly, this research has argued that the legal system offers protection to exchange relationships against opportunism, and this view is supported by the literature (Arrighetti *et al.*, 1997; Lerner & Schoar, 2005; Vinogradova, 2006). The research therefore argues that despite the threat of opportunism emanating from incomplete contracts, such contracts are still in use partly because of the added protection provided by the legal system. The legal system has an inbuilt enforcement mechanism in case of contractual violation. However, strong legal systems are expected to protect exchange relationships better than weak legal systems. From the above discussion the following hypotheses are drawn:

H₁: Monitoring, incentives, trust, and the legal system encourage contracting.

H_{2a}: The legal systems encourage spot market transactions.

H_{2b}: A strong legal system protects exchange relationships better than a weak legal system.

H₃: Monitoring, incentives and trust discourage spot market transactions.

In the case of vertically integrated companies, the issue of trust does not arise or is not applicable because relational exchange theory is concerned with transactions between two independent actors. Under relational governance, firms create close ties with their trading partner(s) and transactions are projected into the future on a repetitive basis (Macneil, 1978). This does not apply to vertically integrated companies as they have internalised transactions. Thus;

H₄: Monitoring, incentives, and the legal system discourage vertical integration.

Since incentives and monitoring, trust and the legal system complement each other in helping protect contractual relationships; it is interesting to assess how these variables interact to protect specific assets.

Interactions between agency, relational exchange theory and the legal system

Incentives and monitoring encourage contracting in that the principal's and the agent's interests are aligned, therefore making it less appealing for the agent to behave opportunistically. However, it has been noted that this is costly as it involves the monitoring and incentive costs which arise due to environmental uncertainty. This research has subsequently argued that the monitoring costs can be partially addressed by trust, in that trust reduces the need to check if the other party is really doing what they promised to do. The legal system also plays an important role as it also complements monitoring. Furthermore

incentives are likely to align the interests of the principal with those of the agent, and hence complement monitoring in ensuring goal alignment between agents and principals and thus reduce the associated monitoring costs. That is, trust, incentives and the legal system complement monitoring and thus reduce monitoring costs. It is therefore hypothesised that:

H₅: Trust, the legal system and incentives complement monitoring.

Under high levels of environmental uncertainty, agents would require higher bonus payments to make up for the risk. This becomes expensive for the principal. However, since trust based relationships emphasise the creation of close ties with trading partner(s) and the relationship between the two parties is sustained by the value of future transactions and interactions, it is fair to argue that trust based relationships are more likely to lead to a reduction in bonus payments (incentives) than adversarial relationships. This is because high bonus payments may compromise the relationship, something that neither the principal nor the agents wants. The agents are expected to assume higher risk in a trusting relationship and thus keep the bonus payments lower than a one-off non-trust based relationship. That is, trust complements incentives, and thus reduces incentive costs. The legal system is not expected to have any significant role in the incentives mechanism because what influences incentives is not the behaviour of any of the trading partners but the environmental factors, i.e. circumstances that are beyond either the principal or the agent such as market conditions and competitor behaviour. It is therefore hypothesised that:

H₆: Trust complements incentives.

Control Variables

The decision to contract, use the spot market or organise transactions internally may be influenced by other factors that need to be controlled for. While there are many such factors, we limit our control variables to the size and maturity of the principal firm, as well as the importance of the procured item to the buying firm (a variable referred to as item criticality in this research). The rationale for including the firm size and input criticality is based on the literature (Antia & Frazier, 2001; Fernandez - Olmos *et al.*, 2008; Scherer & Ross, 1990). Scherer and Ross (1990) suggest that firm size may play an important role in governance decisions. Larger firms are likely to do everything themselves as a way of reducing per unit cost of production. This view is supported by Williamson (1974) who argues that diseconomies of scale limit integration, suggesting that for example, that small firms are less

likely to integrate than larger firms. Item criticality refers to the importance attached by the principal or the contracting firm to certain items or inputs (Antia & Frazier, 2001). It is against this background that Fernandez-Olmos (2008) observe that one of the factors that may affect the choice of governance mechanism is whether the differentiation of the sourced item is important for the quality of the delivered product. For example, grapes are an input for wineries and poor quality grapes would affect the quality of wine produced and thus affect the winery's selling opportunities, especially those wineries that target the premium or super-premium market. Therefore, wineries producing wine for the premium market are more likely to control the grape production process as a mechanism of ensuring that the grapes they use are of high quality. Everaert, Sarens and Rommel (2010) and Gilley, McGee and Rasheed (2004) included maturity of the firm as a control variable in their study on the determinants of outsourcing decisions because less mature firms are short of resources to internalise their functions. They used firm age to capture maturity of the companies. Hence:

H₇: Vertical integration is positively correlated with larger firms.

H₈: Vertical integration is positively correlated with item criticality.

H₉: Vertical integration is positively correlated with age of firms.

3.4 Chapter Summary

This chapter has synthesised the literature and developed a theoretical framework for this research. The theoretical framework consolidates the complementarities between a complex contract with the exchange protection measures offered by monitoring and incentives, trust and the legal system. Based on this framework, the hypotheses were developed. These hypotheses are designed to achieve the research objectives and research questions presented at the beginning of the chapter. The hypotheses together with the respective research questions and objectives they seek to address are summarised in the table below. It is however, important to note that some research questions were answered through hypotheses testing and other means such as the analysis of coordination measures.

Table 3-2: Research questions and corresponding hypotheses

No	Research Questions	Corresponding Hypotheses
1	What governance strategies do firms in South Africa and New Zealand wine industries use to source their grapes?	Governance structures identified through analysis of coordination measures, which were then investigated through H ₁ , H _{2a} , H ₃ and H ₄ .
2	Are there any differences or similarities between the South African and New Zealand grape sourcing strategies?	Not tested through hypotheses but through independent samples t-tests.
3	Can the continued use of incomplete contracts be explained through the theoretical underpinnings of TCE, agency theory, relational exchange theory and the efficacy of the legal system?	All Hypotheses

These hypotheses will be tested through empirical data that was collected in South Africa and New Zealand, and the results are presented in Chapter five. The details of how the hypothesis tests were performed are contained in the next chapter.

Chapter 4

Method

4.1 Introduction

The previous chapter developed the hypotheses and theoretical framework for this research. This chapter presents the methods used in conducting this research. It provides details about the questionnaire development, data collection procedures and how the collected data was analysed.

4.2 Questionnaire Development

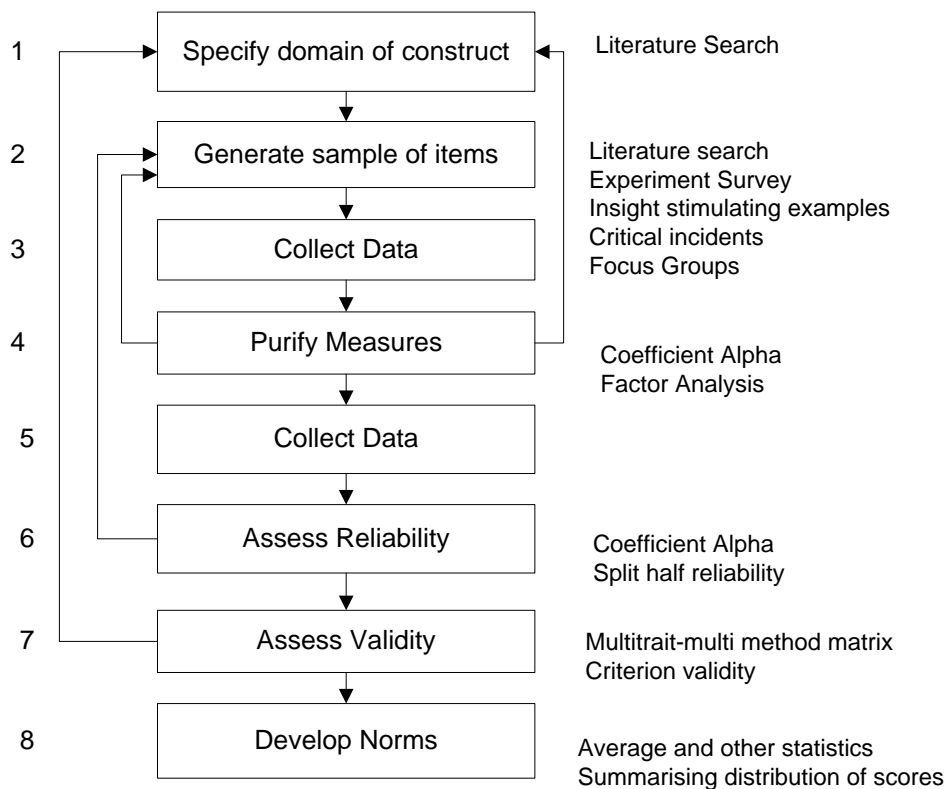
The constructs used to develop the questionnaire for this research were largely adopted from previous studies. Where necessary, modifications were made to suit the current research context. Industry experts, both academics and managers within the wine industry were also consulted to help improve the constructs. The key variables were the three prevalent winery governance choices (Scales *et al.*, 1995) of contracting, spot market transacting and vertical integration as well as agency theory monitoring and incentives (Fraser, 2005), relational exchange theory trust (Kumar, Scheer, & Steenkamp, 1995), the legal system (World Bank, 2003), firm size (Scherer & Ross, 1990), item criticality (Fraser, 2005) and firm age (Everaert *et al.*, 2010).

4.2.1 Construct Development

Psychometric scales or constructs such as some of the ones used in this research tend to be unobservable and hence attempts to capture them can only achieve partial representation of the constructs (Peter & Churchill, 1986). This means that the constructs need to be developed through a rigorous process that will ensure close representation of the intended construct. Churchill's (1979) paradigm for developing better measures is widely accepted as appropriate for developing constructs (Peter & Churchill, 1986). This paradigm identifies the key steps that may help in the development of better constructs. These are, specifying the domain of the construct, generating the sample of items, purifying the measures, assessing the reliability and validity of the data and developing norms.

This research generally followed Churchill's (1979) suggested model for developing better measures. This model is presented below.

Figure 4-1: Churchill's (1979) paradigm for developing better measures



Guided by the above paradigm, the stages used to develop constructs for this research are the review of the literature to identify the research gap. As indicated in the literature review chapter, TCE does not provide adequate exchange protection due to its assumptions of bounded rationality and opportunism and hence incomplete contracts. It was further revealed that agency and relational exchange theories as well as the contract enforcement of the legal system provided some measures of exchange protection and thus help address hazards associated with incomplete contracts. Hence the review resulted in the identification of four main construct domains: TCE incomplete contracting, agency theory monitoring and incentives, relational exchange theory norms and the legal system's contract enforcement mechanism. These exchange governance frameworks therefore provided the domain of the research's constructs. Further, survey items were generated, mainly through adaptation from previous studies and this culminated in the development of a draft questionnaire. The draft questionnaire was then pilot tested and the resultant data (comments) were used to purify the measures and also help ensure their face validity. This led to the development of the final questionnaire that was used to collect data for the study. The constructs were tested for

validity and reliability and this led to further modification of the sample of items. Finally, the data was analysed including the generation of descriptive statistics and hypothesis testing.

4.2.2 Constructs Measurements

4.2.2.1 The Governance Choices

Governance choices are strategies employed by wineries to procure grapes. They include contracting with independent growers for the supply of grapes, buying grapes from the spot market and the in-house production of grapes or vertical control (Scales *et al.*, 1995). These were captured by asking respondents to indicate the proportion of their grape requirements in the last full year sourced through each of the three governance options.

4.2.2.2 Norms

There seems to have emerged a general consensus in the literature that trust adequately captures relational or social norms (Ring & Ven, 1992; Zaheer & Venkatraman, 1995). This literature uses the term “relational governance” to refer to inter-firm exchanges that are protected through organisational trust. Further, Lambe, Whitman & Spekman (2001) argue that trust is considered to be the most important of the “key” variables used within the relational exchange literature. This research therefore follows this literature and uses trust to capture relational norms. The construct used to capture trust was adopted from Kumar, *et al.*, (1995). They used data from the automobile dealer sector to demonstrate that with increasing interdependence asymmetry, the dealers’ trust and commitment in and commitment to the supplier decline while inter-firm conflict increases. Guided by their conceptualisation of trust, this research asked wineries to indicate the extent to which they agreed or disagreed with a list of statements (items) that are believed to capture confidence in their trading partner(s)’ credentials. A five point likert-scale was used to capture the extent to which wineries agreed or disagreed with some statements about the integrity of their trading partners.

It has to be noted however, that the trust variable has been used in the exchange literature in various functional forms. For example, Morgan and Hunt (1994) argued that it is a mediating variable and Kumar, *et al.*, (1995) used it as a dependent variable whereas this research will use it as an independent variable. This research’s approach has been used by Kassim, Bahari, Kassim and Rashid (2009) who investigated and found a positive and significant relationship between relationship marketing and customers’ satisfaction, customer’s trust, employees’ commitment and customer loyalty in Malaysia.

4.2.2.3 Incentives

Incentives are the bonuses and penalties that are used to align the agent's interests with those of the principal (Bergen *et al.*, 1992). In the case of this research, they align grape growers' interests with those of the wineries. The incentive variable for this research was adapted from Fraser (2005) who examined the wine grape supply contracts used in the main grape growing regions of Australia. He found that among others, lower quality grape growing regions place greater reliance on grape quality assessment to determine bonus/penalty payments compared to higher quality growing regions. He captured the bonus/penalty payments or incentives through a binary response question (where "1" = if contract has a bonus/penalty payment provision for a given attribute and "0" otherwise). The quality attributes included, among others, grape colour, Ph levels, disease damage and physical damage. This research has made a minor modification to his approach. Instead of a binary response, it used a 5 point scale where "1" = never and "5" = always. Wineries were asked to indicate the extent to which, on average their contracts specify bonus/penalty payments for a number of quality attributes such as colour, Ph and physical damage. This modification was due to the fact that this research finds a binary response approach limiting in that wineries may have different contracts with different growers and a given bonus/penalty may be specified in one contract but not in the other. Because of this, average penalty/bonus approach seemed more appropriate and was therefore used for this research.

4.2.2.4 Monitoring

The monitoring variable was also adapted from Fraser (2005), who found that contracts in higher quality regions placed greater emphasis on explicit winery involvement in vineyard management. Fraser (2005) captured input monitoring through a binary response question with options of "1" = if winery representatives are involved in vineyard activities and "0" otherwise. Monitoring activities included pruning, water and irrigation, weed control and disease control among others. However, as with incentives the variable above, this research captures monitoring on a five point likert scale. Wineries were asked to indicate ("1" = Never and "5" = Always) the extent to which their representatives are involved in the different activities and decisions of the grower(s).

4.2.2.5 Legal System

This construct measures the extent to which the legal environment (court system) is expected to protect exchange relationships against trading partners' opportunistic tendencies (World Bank, 2003). The World Bank (2003) conducted research on investment climate around the world and asked respondents to rate how problematic court characteristics (of fairness and impartiality, honesty, speed of enforcement, affordability, consistency and decrees of

enforcement) were for the growth and operation of their firms. It found that generally the most negative characteristic of courts was the speed at which they operate, followed by their consistency, honesty, fairness and impartiality, affordability and their enforcement of judgements. Following the World Bank (2003) wineries were asked to indicate, (on a five point likert-scale where “1” = Strongly Agree and “5” = Strongly Disagree) the degree to which they agreed or disagreed with statements that captured the performance of the court system. As with the World Bank (2003) this research focused on the characteristics of fairness and impartiality, honesty, speed of operation, affordability, consistency and decrees of enforcement.

4.2.2.6 Firm Size (control variable)

The size of wineries was captured by litres of wine produced for New Zealand and tonnes of grapes crushed for South Africa. This followed the statistical reporting systems in both countries. In South Africa, size is captured through tons of grapes crushed in a given year by the South African Wine Information and Systems (SAWIS, 2009) and in New Zealand size is captured through annual sales of wine in litres by the New Zealand Winegrowers (NZWINE, 2009).

4.2.2.7 Item Criticality (control variable)

Item criticality refers to the extent to which grape quality is considered important to the quality of the wine produced (Antia & Frazier, 2001). Item criticality was adapted from Fraser (2005) who identified a number of quality variables used within the wine industry in Australia. In order to measure item criticality for this research, wineries were asked to express (on a five point likert-scale where “1” = not important and “5” = very important) their opinions about the importance of Fraser’s (2005) grape quality variables to the quality of their wines.

4.2.2.8 Firm Maturity (control variable)

Firm maturity refers to the length of time the firm has been in business. Following, Everaert *et al.*, (2010), maturity was captured through age of the firm. It represents the number of years the winery has been in operation.

4.2.3 Questionnaire Refinement and Pre-testing

After the questionnaire was developed, ten PhD students and three University Faculty of Commerce staff with expertise in this area were asked to review and comment on the questionnaire. Their comments were incorporated as a way of refining the questionnaire. This

helped with the initial face validity of the questionnaire. The questionnaire was then emailed to fifteen wineries as a pre-testing exercise. This was in line with Cooper and Schindler (2006) who observe that a pilot test helps detect weaknesses in the design of the research instrument because it allows for refinements based on the responses of the pilot test. The wineries were asked to identify any ambiguities in the questionnaire and highlight them to the researcher. Nine of the wineries responded. Lastly, five managers of wineries within the Christchurch area were personally interviewed by the researcher. Useful feedback was obtained and incorporated into the questionnaire. For example, one of the managers suggested that tannins be included as one of the grape quality measures because they are very important especially to red wine as they provide colour, flavour and structure to a wine.

4.3 Data Collection and Preparation

4.3.1 Sampling

The population for this research was wineries in South Africa and New Zealand. As earlier noted, wineries either have contracts with grape producers, produce grapes for their own use or buy grapes on the spot market. They are therefore key decision makers in the governance form, and hence were the study's unit of analysis.

According to SAWIS (2009), there were 585 wineries in South Africa as at the end of 2008. SAWIS is an organisation that collects, processes and disseminates South African Wine Industry information (see <http://www.sawis.co.za/>). SAWIS provided the contact details of the wineries and as per their industry policy, offered to help coordinate the research. Questionnaires were sent to all the wineries in South Africa. A total of 111 responses were usable, representing an 18.9% response rate. There were 683 wineries in New Zealand in 2009 (NZWINE, 2009). However, NZWINE (2009) could provide contacts of only 580 wineries (85%). Hence 580 questionnaires were sent out in New Zealand. A total of 116 responses were usable, representing a 20.0 percent response rate. Further details of the responses are discussed in Chapter five.

4.3.2 Data Collection Procedures

A number of methods for collecting the data for this study were considered. These methods included self administered questionnaires, personal and telephone interviews, field studies, internet based surveys as well as an assortment of library based approaches (Zikmund, 2003). All these methods have weaknesses and strengths. The choice of each therefore depends on a number of considerations regarding their strengths and weaknesses. For this research, major

consideration was given to the costs of collecting data from South Africa and New Zealand. Each country has a number of regions that had to be covered and this added to the costs. Thus, the mail survey was seen as the most appropriate data collection method for this research because it allowed for the coverage of both countries at reasonable costs. It also allowed for respondent flexibility since respondents could fill the questionnaire as and when they had time (Zikmund, 2003). Further, it allowed respondents enough time to think and reflect on their responses.

The design and implementation of the mail survey followed Dillman's (2007) mail survey method. This method puts emphasis on improving the response rate and improving data quality. This is achieved through among others, the cover letter, a detailed yet short and to the point questionnaire, pre-paid reply envelope and a post card reminder two weeks after the initial mailing. All these steps were followed, except that instead of a post card, a reminder letter was sent with a new questionnaire and a free post envelope three weeks after the initial mailing. In addition, respondents were given the choice of whether or not to be sent the summary of the results once the research is completed.

4.3.3 Non-Response Bias

Despite following best practice with the intention of increasing response rates, some wineries did not return the questionnaire. Such potential respondents may have deliberately declined the questionnaires due to, among others, proprietary nature of the data or they simply did not have time to answer the questionnaire. This could potentially result in non-response bias, a statistical difference between a survey that includes only those who responded and an ideal survey that would also include those who failed to respond (Zikmund, 2003). This difference may be due to the fact that subjects that do not return the questionnaire or answer certain questions may have opinions that are substantially different from those who returned the questionnaire or answered all questions.

Results drawn from data with non-response bias do not allow the researcher to say with confidence how the entire sample would have responded (Armstrong & Overton, 1977). Li (2005) states that a standard way to test for non-response bias is to compare the responses of those who return the questionnaires after the first mailings with those who return it after the second and subsequent mailings. The assumption is that those who do not return the questionnaires after the first mailing have almost similar opinions with those who do not respond at all. For this research, non-response bias was tested through the independent

samples t-tests to compare means from first mailing responses with means of the after reminder responses (Pallant, 2007). Results are presented in Chapter five and they show no significant evidence of non-response bias.

4.3.4 Data Coding, Entry and Cleaning

The questionnaire was pre-coded through the likert scale format. Each question had a coding range that guided data entry or transfer into the electronic format. All data were handled through Statistical Package for Social Sciences (SPSS) for windows (version 17). Data cleaning was then undertaken to ensure that there are no data entry errors. This included checking for scores that are out of range. This included checking the minimum and maximum scores as well as the mean to ensure that they fall within the coding framework (Pallant, 2007). It also included the inspection of the box plots to ensure that there are no outliers. Any values out of line with expectation were corrected by going back to the questionnaire to re-enter the correct values. This phase also took care of missing data. Descriptive data was generated and checked for the proportion of missing data. Only a few data points were missing. When only a few data is missing, Pallant (2007), recommends excluding the missing cases through SPSS's pairwise exclusion of missing data option. Consideration was given to replacing the data with the mean through SPSS "replace with mean option". This option was not taken because Pallant (2007) cautions researchers against it. She argues that it should "never" be used as it can severely distort the results of the data analysis. This resulted in excluding three and five data points for South Africa and New Zealand, which yielded the final sizes of 111 and 116 for the two countries respectively.

4.4 Data Analysis

The data analysis phase used a total of four statistical techniques to analyse the data. Exploratory factor analysis and reliability analysis were used to refine the constructs, multiple regression analysis was used to test the hypotheses (except H_{2b}) and the independent sample t-test was used to test the hypothesis that the New Zealand legal system is more effective in protecting exchange relationships than the South African legal system (H_{2b}). The independent sample t-test was also used to compare the coordination strategies between New Zealand and South Africa, as well as compare the level of trust, monitoring and incentive practices as well as compare the importance of grape quality to the quality of wine produced between the two countries.

4.4.1 Instrument Validity

Validity of the scale refers to the extent to which the scale or construct measures what it is intended to measure (Leech, Barrett, & Morgan, 2008). That is, do the items making the construct collectively measure the right thing or they measure something else? Instrument validity can be assessed through three main approaches: content validity/face validity, criterion related validity and construct validity (Cao, 2001). All the three measures were used to capture instrument validity for this research.

4.4.1.1 Content/Face validity

Content validity refers to the extent to which a measure represents a given construct or whether the items adequately capture the essence of the construct domain (Churchill, 1979). It requires the identification of a group of items which are thought to measure the construct (Cao, 2001). However, it is a subjective measure as it generally depends on the opinions based on the literature review and questionnaire pre-tests (Hensley, 1999). For this research, content validity of the scale was achieved through peer review with other researchers and academics within the Lincoln University Faculty of Commerce. The instrument was also reviewed by researchers within the Department of Agricultural Economics at the University of Stellenbosch, South Africa. The scale was also piloted with 21 wineries in New Zealand. The researchers and the wineries were confident that the constructs measure what they intended to measure.

4.4.1.2 Criterion related validity

This is the measure of the relationship between the scale and surrogate measures of the construct (Hensley, 1999). This approach is used to demonstrate the performance of a construct by comparing it with another measure that has been shown to be valid. It requires checking the performance of the construct against some criterion that is known to perform well. Hence, instead of developing new scales, this research opted to adopt scales that have been successfully used in previous studies and modify them where necessary. This approach has been used before. In a review of studies using scale development techniques, Hensley (1999) reports that many of the studies borrowed methods and scales from more developed fields. Further, other empirical studies such as Antia & Frazier (2001) and Tremblay, *et al.*, (2003) have used measurement scales from previous research, sometimes with minor modifications to meet their research setting. In particular, this research converted the scales from binary response questions to five point likert scales.

4.4.1.3 Construct Validity

Construct validity attempts to identify or establish the underlying construct being measured and to determine the degree to which the test represents the construct measured (Cooper & Schindler, 2006). This measure is mainly captured through the unidimensionality test (Cao, 2001; Kao, 2007). Unidimensionality refers to the existence of a single construct underlying a set of measures (Gerbing & Anderson, 1988). Unidimensionality is commonly captured through factor analysis, a process of deriving a small number of variables that “hang together” from a fairly large set of items (Leech *et al.*, 2008). The subsets of items that are correlated with one another but largely independent of other subsets of items are combined into factors (George & Mallery, 2009). A factor reflects underlying processes that have created the correlations among variables or items. It therefore represents a good measure of construct validity, which aims at identifying the underlying construct being measured.

There are two common factor analysis methods used for assessing unidimensionality. These are exploratory and confirmatory factor analysis (Hair, Black, Babin, & Anderson, 2010). The former is a technique that helps researchers explore the underlying structure of a collection of items and the latter seeks to test the hypothesis that due to some theoretical support or prior research, certain variables should be grouped together on a factor. With exploratory factor analysis, the researcher takes what the data gives or suggests, while with the confirmatory technique the researcher has pre-conceived view about the actual structure of the data based on what theory or past research suggests. With the confirmatory technique, the analyst assesses the degree to which the data meets the expected structure. As indicated in the preceding subsection, this research adopted, albeit with modifications, constructs from previous studies. However, except for trust which was adopted from Kumar *et al.*, (1995), these studies did not indicate that they performed validity or reliability tests on the scales, which meant that most scales remained largely exploratory in nature. For example, incentives, monitoring, and item criticality were adopted from Fraser (2005) who captured the variables as binary response questions where incentives was captured as (where “1” = if contract has a bonus/penalty payment provision for a given attribute and “0” otherwise), monitoring as (“1” = if winery representatives are involved and “0” otherwise) and item criticality as whether the contracts captured grape quality measurements or not. As mentioned above, Fraser (2005) did not perform validity or reliability tests on these variables.

Items making up the legal framework variable were adopted from the World Bank (2003) but there were no reported validity and reliability results. The results were simply reported in

frequency terms, which suggest that it was unlikely for the study to perform validity and reliability tests which, unlike a simple frequency analysis approach, require determining the relationships between the items making the construct.

Due to the fact that both the World Bank (2003) and Fraser (2005) did not report any validity and reliability results and due to the modifications made to the scales adopted from Fraser (2005), this research felt that the scales were largely exploratory in nature. There were no pre-conceived structure of these variables and hence confirmatory factor analysis was seen as inappropriate for examining the latent structure of the variables used in this research. Instead, the research performed exploratory factor analysis as the objective was to uncover the underlying structure. This approach is in line with Gerbing and Anderson (1988) who suggest that exploratory factor analysis is appropriate in cases where the underlying dimensions of a data set are unknown. Although the trust variable was a prime candidate for confirmatory factor analysis to help assess the degree to which the data meets the expected structure of this variable, the variable has been widely used in empirical research (Friman, Gärling, Millett, Mattsson, & Johnston, 2002; Holdford & White, 1997) and this reassured the current research that the variable is one-dimensional. The variable performed well when subjected to the reliability tests and this further reassured this study that trust measured what it intended to measure.

However, whether to perform or not to perform factor analysis on the data depends on the data being appropriate for the technique. Hair *et al.*, (2010), Stewart (1981) and Coakes, Steed and Price (2008) identify pre-conditions for performing factor analysis on the data as, a sample size of 100 or more, strong and significant correlations (greater than 0.30), linearity, no extreme outliers and a Kaiser-Meyer-Olkin (KMO) Measure of Sample Adequacy of 0.60 or more. The rationale for strong and significant correlation between the items is influenced by the fact that construct validity assumes that factors consist of subsets of items that are correlated with one another but largely independent of other subsets of items. It aims at discovering which set of variables form coherent subsets that are relatively independent of one another (Tabachnick & Fidell, 1990). Factor analysis is essentially concerned with the homogeneity of items (Stewart 1981). Since factor analysis is based on correlations, the importance of linearity cannot be overstated as lack of linearity may degrade the factor solution. Further, factor analysis is sensitive to outliers (Coakes *et al.*, 2008), so outliers have to be identified and then removed from the data set or aligned with the average distribution of the data set.

Once the researcher is satisfied that the data is adequate for factor analysis, the unidimensionality test may be performed. According to Cao (2001) and Pallant (2007) a successful unidimensionality test through exploratory factor analysis must meet the following criteria:

1. First factor loading should explain more than 40 percent of the variance in the construct.
2. All or most of the items should have higher loadings on the first factor than on subsequent factors.
3. Three or more items must load on each factor.

This research took account of these pre-conditions. An item correlation matrix was computed and examined to ensure that the correlations were high. The results showed high correlation between the items for all the constructs. The Bartlett's Test for Sphericity was used to test for the significance of the correlation matrix and all constructs had items with significant correlations. The research also tested for linearity and the absence of outliers and was satisfied that these conditions were met. These are also the pre-conditions for multiple regression analysis (section 4.4.5 of this chapter) and how they were met is discussed under the multiple regression subsection. Lastly, the KMO measure was used to test the hypothesis that the items do not belong together, and in all cases, the KMO was more than 0.60, which meant that the hypothesis that the items do not belong together was rejected. The research was therefore satisfied that the data for both countries was appropriate for factor analysis. The results are presented in Chapter five.

4.4.2 Reliability Analysis

After identifying the variables' underlying construct through validity tests, the natural process was to determine the degree to which the scale items go together, or the degree to which a given scale is free from random error (Pallant, 2007). That is, to measure the scale reliability of variables. There are two important aspects of reliability, repeatability and internal consistency (Zikmund, 2003).

Repeatability refers to the fact that the scale should most likely produce the same result each time it is administered to the same person in the same setting (George & Mallery, 2009). Repeatability is normally measured through the test-retest method. This involves administering the scale on the same sample on two different occasions and then calculating

the correlation between the two scores obtained. A high test-retest correlation shows that the scale has a high level of reliability.

Internal consistency refers to the homogeneity of items constituting the measure (Pallant, 2007). It is concerned with the degree to which items that make up the scale or construct are all measuring the same underlying attribute. It can be measured in different ways, but Cronbach's alpha (α) is the most commonly used measure of internal consistency (Kao, 2007). The (α) measures the average correlation among items making up the scale. Values range from 0 – 1 and higher values indicate greater reliability. While higher (α) levels are ideal, the literature generally considers a minimum of 0.70 as acceptable (Cao, 2001; George & Mallery, 2009; Kao, 2007; Paulin *et al.*, 1997). In fact, Nunnally (1978) states that even levels of 0.60 are acceptable. However, Pallant (2007) cautions that (α) values are dependent on the number of items in the scale. She points out that when there are fewer than 10 items in a scale, the (α) values can be too small. In this situation, she recommends that it may be better to calculate and report the item-to-total correlations whose values ranges from 0.2-0.4. The item-to-total correlation measures show how closely the items within a construct relate to a construct as a whole. As a rule of thumb, an item-to-total correlation value of above 0.3 is considered adequate for good internal consistency (Cao, 2001).

This research did not apply all the above discussed reliability tests. Notably, the test-retest reliability test was not used for this research. The test was not used on account of time and financial resources. It requires administering the scale on the same sample on two different occasions, which is not only expensive but also time consuming. Instead, the research tested construct reliability by deriving Cronbach's alpha for all the constructs used in this research. The research also took heed of Pallant's (2007) caution that when there are fewer than 10 items in a scale it may be better to measure reliability through the item-to-total correlations because the (α) values could be too small. In all the constructs for this study, only trust had more than ten items. The (α) measure was therefore supplemented by item-to-total correlation scores. Reported in pairs of South Africa (SA): New Zealand (NZ), the following cronbach alphas were attained. Trust (SA=0.956: NZ=0.917), Monitoring (SA=0.951: NZ=0.913), Incentives (SA=0.868: NZ=0.966), legal system (SA=0.870: NZ=0.754) and Item criticality (SA=0.830: NZ=0.838). The item-to-total correlations are also above the acceptable 0.30 rule of thumb level for this test (Cao, 2001).

4.4.3 The Multiple Regression Analysis

This research employed multiple regression analysis to test all the hypotheses developed in Chapter three except H_{2b}. The Multiple regression analysis allows for the testing of the relationship between a single dependent variable and two or more independent variables (Hair *et al.*, 2010) The standard regression equation takes the form:

$$Y_i = \alpha + \beta X_i + \varepsilon_i, i = 1 \dots n$$

Equation 4-1: The standard regression equation

Where Y_i is the set of dependent variables, X_i is the set of independent variables, α is the constant and β_i is the set of regression coefficients of X_i s that the regression seeks to estimate. β represents the amount of change in the dependent variable Y corresponding to a unit change in the independent variable X . The ε is the error term or residual and it represents total error in predicting Y from X (Stewart, 2005). The ε is essentially the difference between the actual value of the independent variable (X) and the value of X predicted by the regression equation. It (ε) captures the variation in Y or variation about the mean of Y (\bar{Y}) not captured by the predicted value of X .

4.4.3.1 The Estimation Technique

The least squares estimation technique was used to estimate the relationship between the dependent variable (Y) and the independent variable (X). That is, to estimate α and β . This technique is a simple mathematical formulation that attempts to make the least amount of total error in predicting Y from X (Stewart, 2005). The method generates a straight line which minimises the sum of squared deviations of the actual values from the estimated regression line (Zikmund, 2003). With the symbol ε representing errors in the prediction of Y from X , the least squares equation criterion takes the form:

$$\sum_{i=1}^n \varepsilon^2 \text{ is minimum; where}$$

Equation 4-2: Least squares formula

$$\varepsilon_i = Y_i - \hat{Y} \text{ (residual)}$$

Y_i = actual value of the dependent variable

\hat{Y} = estimated value of the dependent variable

n = number of observations

i = number of particular observation

The objective of the least squares technique is therefore to minimise the variation in Y not explained by the predicted value of X. This helps in generating a sample β coefficient that is as close as possible to the population coefficient and this improves the prediction capability of the regression model.

4.4.3.2 Decomposition of Variation in the Dependent Variable (Y)

Since the objective of the least squares technique is to minimise the variations in Y not explained by the predicted value of X, it implies that total variation in Y has two components. These are the systematic component associated with the independent variable (X) and the unsystematic variation associated with the error term (ϵ). This can be represented as:

$$Y_i - \bar{Y} = (\hat{Y}_i - \bar{Y}) + (Y_i - \hat{Y}_i) \text{ Or TV} = (\text{EV}) + (\text{UV})$$

Equation 4-3: Decomposition of the variation in the dependent variable

Where: \bar{Y} = mean value of the dependent variable.

\hat{Y} = value predicted with the regression equation.

Y_i = actual value of the dependent variable.

TV = Total variation

EV = Explained variation

UV = Unexplained variation

The coefficient of determination (r^2) reflects the proportion of variation explained by the regression model. Thus, rearranging the equation $\text{TV} = (\text{EV}) + (\text{UV})$ and converting (EV) into a proportion of total variation gives:

$$r^2 = 1 - \frac{\text{UV}}{\text{TV}}$$

Equation 4-4. Formula for the coefficient of variation

The r^2 ranges between 0 and 1, and the closer to 1 the value of the r^2 is, the better the fit of the regression line to the data (Kao, 2007). However, it is important not to infer from a low r^2 that the explanatory variable (s) is or are not important in determining the independent variable. Stewart (2005) stresses the point that what matters most is the significance level of the regression coefficient (β) of the independent variable (X) because it is common to have situations where the independent variable explains a small variation in the dependent variable

yet it is a significant determinant of the latter. The issue of statistical significance is discussed in the hypothesis testing section discussed below.

4.4.4 Hypothesis Testing

Regression analysis allows the researcher to generate some point estimates of α and β about the population. The least squares method helps in generating estimates that are as close as possible to the population values. The researcher is also faced with the task of ascertaining themselves that indeed the estimated coefficients are as close as possible to the population values. They need a way of establishing with confidence the degree to which the sample estimates represents the population dynamics. Hypothesis testing helps in this regard. It helps determine the precision of the estimates and give confidence to the researcher on whether the estimates are a reflection of the population or not. In order to test the research hypotheses formulated for this research, Stewart's (2005) guidelines to hypotheses testing were adopted. These are: (a) identifying the test statistic, (b) stating the significant level (p-value), and (c) calculating the test statistic and the associated p-value and then making the appropriate decision on whether to accept or reject the stated hypothesis.

4.4.4.1 Identification of the Test Statistic

A test statistic helps in verifying whether a given hypothesis is supported or rejected by chance variation or whether it is real that it should be rejected or supported. A desirable property of a test statistic is that it has a tractable distribution, preferably with tabulated probabilities (Zikmund, 2003). Probability tables are available for the normal, χ^2 , t and the F distributions. The χ^2 and F distributions are not normally distributed but are rather skewed to the right (Stock & Watson, 2003) and therefore not suitable for hypothesis testing for this research. This research targeted the populations of wineries in South Africa and New Zealand. Thus, each member of the population had an equal chance of responding and thus be included in the sample, which resulted in normally distributed data sets. This is confirmed through the normality tests conducted in Chapter 5. Both the normal and the t-distributions are normally distributed or bell shaped and hence suitable for testing normally distributed data. The main difference between these two distributions is that the normal distribution assumes that the population standard deviation is known and the t-distribution assumes unknown standard deviation (Stock & Watson, 2003). As in nearly all empirical statistical research, the population standard deviation for the data for this research was unknown, which influenced the choice of the t-statistic as the appropriate test statistic for this research. Stewart (2005),

advice that as a rule of thumb, for sample sizes larger than 20, t statistics greater than 2 (in absolute value) suggest significant effects.

4.4.4.2 Choosing the Significance Level (p-value) and Hypothesis Tests

The main objective of performing a significance test is to determine if a relationship observed in a sample is the result of chance variation (Sweet & Grace - Martin, 2008). That is, the significance tests determine the likelihood that this same relationship also exists in the population. A statistically significant relationship means that an observed pattern in one sample would most likely be observed from different samples of the same size drawn from the same population. Thus, the same pattern would be observed if it was possible to study the entire population. Significance tests rely on significance level, the probability that chance explains the variation. This probability is normally represented through a p-value (Pallant, 2007). A high significance value (p-value) suggests that the observed pattern occurred by chance. A low p-value suggests that the observed pattern is unlikely to have occurred by chance. Usually, the thresholds for the probabilities (p-values) are set at 0.01, 0.05 and 0.10. These assert that there is only a 1 in a 100 (0.01); 5 in 100 (0.05) and 10 in 100 (0.10) probability that the observed pattern would have occurred by chance (Pallant, 2007; Zikmund, 2003). This research followed convention and used these significance levels (0.01, 0.05, and 0.10)

4.4.5 Assumptions of Regression Analysis and Factor Analysis

In order to use the regression technique as an estimation tool, the data set must meet certain assumptions and requirements. Maddala (2001) identifies the regression assumptions as;

- (a) Absence of outliers
- (b) Lack of multicollinearity
- (c) Linearity of the regression function
- (d) Normality
- (e) Uncorrelated or independent Error Terms
- (f) Equal or constant Error Variance

Of the above assumptions, assumptions (a) and (c) also apply to factor analysis (Section 4.4.1.3).

4.4.5.1 Absence of Outliers

An outlier is an observation within a data set that is so far removed from the cluster of other observations that it is considered an extreme value (Sweet & Grace - Martin, 2008). They can be due to data entry errors or may just be genuine outliers. What is apparent, however, is that

they can undermine conventional statistical methods and the researcher has to make a decision on how to deal with them (Pallant, 2007). There are different ways of dealing with outliers including deleting them (Coakes *et al.*, 2008) and adjusting the extreme value in line with the average trend (Pallant, 2007). This research checked for outliers through two SPSS procedures, looking at the histogram to inspect whether there are data points sitting on their own on the tails of the distribution and inspecting the data's box plot for any scores considered outliers. The box plot procedure puts outliers as little circles with an identity number attached to them to help the researcher spot them. After identifying the outliers, this study ascertained whether they were data entry errors or genuine outliers by cross checking the values with those provided in the questionnaires. Very few outliers were identified and appropriate corrections were made to the data in cases where the outliers occurred due to data entry errors. Where outliers were genuine but uncomfortably out of line with the general trend of the data, the extreme values were adjusted to align them with the average scores.

4.4.5.2 Multicollinearity

Multicollinearity occurs when the independent variables are closely collinearly related or move together in a systematic way (Hill, Griffiths, & Lim, 2008). It is important to note that the presence of multicollinearity on its own is not a problem. The problem is the degree of collinearity, and it does become problematic once the correlations exceed 0.80 (Kao, 2007). Consequences of collinearity of the independent variables include large variances and standard errors which makes it more difficult to estimate the true population parameters, wider confidence intervals due to large standard errors, which further reduces the accuracy of the model's ability to estimate population parameters, insignificant t-ratios which make it easy to jump to the conclusion of chance variation when in fact there is no chance variation and high r^2 which may overestimate the variations of the dependent variables explained by the model (Gujarati, 2006). It is clear that multicollinearity has far reaching implications for the success of the population parameter estimation process. It must therefore be detected and corrected before the formal estimation process gets underway.

Multicollinearity can be detected through a number of ways. High r^2 but few significant t-ratios as well as high pair-wise correlations (in excess of 0.80) among explanatory variables may signal the presence of multicollinearity (Zikmund, 2003). Gujarati (2006) recommends the use of the variance inflation factor (VIF), which measures the strength of the relationship between a single independent variable and other independent variables in the regression. The VIF is computed by regressing each of the independent variables against other independent

variables and the coefficient of determination for each regression (r^2) observed. For example, for a given explanatory variable X_j , the coefficient of determination (r_j^2) will be obtained and this will be done for all explanatory variables (X_{j_s}). The VIF for the variable X_j is:

$$VIF_j = \frac{1}{1 - r_j^2}$$

Equation 4-5: Variance Inflation Factor

When there is no relationship the $r_j^2 = 0.0$ and $VIF = 1$, hence the absence of multicollinearity. The VIF therefore increases as r_j^2 increases or as more and more variation in one of the independent variables (tested as a dependent variable) increases, suggesting increasing collinearity. A VIF value of above 10 indicates the potential presence of multicollinearity (Pallant, 2007). This research used SPSS to test for multicollinearity. The SPSS collinearity diagnostics were examined for any possible correlations above 0.80. Further, the output was assessed for exceedingly high coefficient of determination (r^2) as well as check for few significant t ratios. In addition, the VIF values were examined to ascertain that the values were less than 10. In all regression models, no multicollinearity was detected. Chapter five reports on the VIF statistics for all the models and there is no indication of the presence of multicollinearity as all the VIF values are less than 1.5.

4.4.5.3 Linearity

The relationship between the dependent variable and independent variable(s) should be linear. Such a relationship exists when a difference in the value of one variable is associated with a consistent difference in the value of another variable (Sweet & Grace - Martin, 2008). Linearity can be assessed through the Pearson correlation coefficient. The coefficient can have values from -1 to +1, where a coefficient of 0 shows that there is no linear relationship between the variables and -1 shows perfect negative correlation and +1 shows perfect positive correlation. A correlation of 0.30 is considered good and a correlation of 0.40 is considered strong (Sweet & Grace - Martin, 2008). Statistical significance can be used to determine whether the relationship occurred by chance. Another test for linearity is the relationship between the residuals and the predicted dependent variable scores. If the data exhibits linearity, the residuals should have a straight line relationship with the predicted dependent variable scores (Pallant, 2007). This research inspected the residual scatter plot against the predicted dependent variable scores and was satisfied that there existed significant linear relationships between the research's dependent and independent variables. The Pearson coefficients were not calculated because the residual scatter plots were clearly linear which

made the researcher confident that all the models met the linearity condition (Appendices 2a and 2b).

4.4.5.4 Normality

The residuals should follow a normal distribution with a mean of zero (Sweet & Grace - Martin, 2008). Normality is usually tested through the visual examination of the residual plots histogram and normality probability plots. These tests were undertaken for this research and the study was satisfied that the normality assumption was met (See appendices 3a and 3b).

4.4.5.5 Error Term Independence

Error term independence implies that the residuals should not be correlated and a commonly used statistic for the detection of error independence is the Durbin-Watson statistic (Maddala, 2001). The statistic is used to test the null hypothesis that the residuals from the ordinary least squares are not autocorrelated. The Durbin-Watson statistic ranges from 0 (positive correlation) and 4 (negative correlation). A value close to 2 indicates no or little correlation. The test has established tables from which given the sample size (N) and the number of independent variables (K), critical values produced when testing the model can be cross checked against the lower (DL) and upper (DU) values published in the tables. The null hypothesis is not rejected when the test statistic is above the upper limit. The Durbin-Watson test results for the five models that were used to test the hypotheses are summarised in table 4.1 below.

Table 4-1: The Durbin -Watson test statistics for Error Term Independence

Mode	K#	Dependent Variable	Test Statistic		Critical Value (at 1% level)	
			South Africa	New Zealand	DL	DU
no						
1	7	Contract	1.901	2.028	1.578	1.805
2	7	Spot market	1.930	2.287	1.578	1.805
3	6	Vertical Integration	1.914	1.951	1.598	1.785
4	6	Monitoring	2.415	2.412	1.598	1.785
5	4	Incentives	2.151	2.351	1.635	1.746

K = no of independent variables. N = 111 and 116 for South Africa and New Zealand respectively.

All the models show that the test statistic is above the upper bound of the critical range and are all closer to 2. Hence the research is confident that the assumption of error term independence was satisfied for all the models.

4.4.5.6 Error Term Homoscedasticity

Error term homoscedasticity implies that the error terms are expected to have equal variance across all levels of the independent variable(s) (Hair *et al.*, 2010). Homogeneity of variance is usually tested through the visual plot of standardised residuals or errors against the regression standardised predicted value (Kao, 2007). Homoscedasticity is detected by randomly scattered residual plots with no indications of increasing or decreasing patterns. Scattered residual plots were produced for this research and the residuals appeared to scatter randomly and did not show any pattern, which suggests that the error terms were homoscedastic (Appendices 4a and 4b).

4.5 Chapter Summary

This chapter provided the methods used for undertaking this research. It discussed the development of the questionnaire, which included literature search, drafting, input from industry experts and pilot testing. Variables within the questionnaire were largely drawn from previous studies with some modifications made where necessary. The chapter also addressed sampling issues, indicating that contact details were obtained from country industry bodies and that questionnaires were sent to all wineries whose contacts were provided by the industry bodies. Further, the chapter elaborated upon statistical analysis that were undertaken to ensure instrument validity, reliability and hypothesis testing. It concludes that the data are suitable for the analytical techniques used in this research and meets all a priori assumptions. The next chapter uses the methodology developed in this chapter to conduct hypotheses tests and presents tests results.

Chapter 5

Data Analysis and Hypothesis Testing

5.1 Introduction

The previous chapter developed the methods for undertaking this research including procedures for ensuring instrument validity and reliability, data analysis and hypothesis testing. This chapter employs these procedures to analyse the data, perform hypothesis tests and report the research results. The first section of this chapter reports on the sample response rates, respondent firms' demographics and on construct descriptives. The second section reports on the results of the instrument validation tests, exchange coordination strategies in the two countries and the testing of hypotheses. This is followed by the main results summary and the overall chapter summary.

The data analysis process was undertaken to help address this research's objectives, which are:

- (a) To integrate the TCE, agency theory, relational exchange theory and the contract enforcement mechanism of the legal system and develop a multi-paradigm governance framework that is more effective in protecting exchange relationships than any exchange protection framework in isolation.
- (b) To use the multi- paradigm governance framework developed in (a) above to help explain why firms use incomplete contracts despite their vulnerability to *ex post* opportunism.
- (c) To investigate the structure of, and the differences between the South African and New Zealand wineries' grape sourcing strategies.

The first research objective was achieved through the analysis of the grape sourcing strategies (Section 5.6.1) and the second and third research objectives were achieved through the hypothesis testing phase (Section 5.6.2).

5.2 Sampling and Response rates

A total of 585 questionnaires were distributed to the South African wineries. The figure represents the total population of South African wineries. 111 usable responses were received; representing an 18.9% response rate. In New Zealand, 580 questionnaires were distributed. A total of 116 responses were usable, representing a 20.0 percent response rate. The response

rates are within the expected range of mail surveys (Zikmund, 2003) and are also in line with other wine industry surveys (Fraser, 2005; Goodhue *et al.*, 2003) that had response rates of around 20.0 percent. The response rates are also in line with other marketing surveys such as Cao (2001) who studied the influence of electronic commerce to business performance and reported a 21.0 percent response rate, and John (1984), who investigated the antecedents of opportunism in marketing channels and reported a 15 percent response rate.

With response rates of around 20.0%, non-response bias was a concern because it (non-response bias) does not allow the researcher to say with confidence how the entire sample would have responded if all sample members had responded. This research tested for non-response bias through the independent samples t-tests which enabled the comparison of means from first mailing responses with means of the after reminder responses. With the South African data, there were 73 responses after the first mailing and 38 responses after the reminder had been issued, while for New Zealand, the first mailing and second mailing resulted in 81 and 35 usable responses respectively. The results of the test for equality of means are summarised in Table 5.1 below.

Table 5-1: Independent samples t-test for the equality of means (non-response bias)

Variable	South Africa			New Zealand		
	Mean difference	t-test for the Equality of means (Sig. At 5% level)		Mean difference	t-test for the Equality of means (Sig. At 5% level)	
		t	Sig. (2 tailed)		t	Sig. (2 tailed)
Spot market	0.002	0.047	0.962	0.042	0.728	0.468
Contract	0.432	1.902	0.060*	-0.150	-0.706	0.482
V.Integration	0.088	0.242	0.809	-0.138	-0.602	0.548
Item Criticality	0.007	0.050	0.960	-0.130	-1.107	0.271
Incentives	0.039	0.223	0.824	-0.269	-2.582	0.011*
Monitoring	-0.039	-0.219	0.827	0.057	0.249	0.803
Trust	-0.017	-0.157	0.876	0.170	1.385	0.169
Legal system	-0.067	-0.423	0.673	-0.024	-0.473	0.637
Size	0.005	0.016	0.987	0.304	2.172	0.032*

*(p<0.10)

The results generally show that for both countries, there is insignificant mean difference ($p < 0.05$ with a two tailed t-test) between responses obtained from the first and second mailings. In the case of South Africa, the significance level for all the variables is greater than 0.05, which suggests that there is no significant difference between the means. The contract governance mode is however significant at the ($p < 0.10$ level). Its p value = 0.060 but it is a 2 tailed test. Converting this to a one tailed test requires multiplying the p value by 2 and this yields ($p = 0.12$), which suggests that the hypothesis that there are differences in the mean values for the first and second responses for the contract variable is also rejected.

The New Zealand data shows that there are no significant differences for all the variables except incentives and size. It is however important to note that these are only two variables out of a total of nine variables. These appeared rather random and were expected not to cause any major concern. The responses were therefore generally representative of the sample frame. This research therefore confidently concludes that the responses are sufficiently representative of the sample to allow for the generalisation of the results to the sample frame.

5.3 Respondent Firm Demographics

5.3.1 Size of the Respondent Firms

The size of the firms is reported differently in the two countries. In South Africa, firm size is reported as tons of grapes crushed, while in New Zealand size is reported in annual sales in litres of wine. The South African size classification (SAWIS, 2009) does not provide for the conventional size categories of small, medium and large. Instead, the wineries are classified according to tons crushed in the last year in the following order: (1-100 tons), (>100 – 500 tons), (>500 – 1,000 tons), (>1,000 – 5,000 tons), (>5,000 – 10,000 tons) and (>10,000 tons). Based on these categories, a decision was made to combine some categories in such a way that a small, medium and large classification would be achieved without losing the original incremental order of the categories. The first two categories were combined and classified as small (1-500 tons), the third and fourth categories were combined to capture the medium class (> 500-5000) and the last two categories were combined to capture large wineries (> 5000).

The New Zealand classification is as follows: Small wineries are those with annual sales of < 200,000 litres of wine, medium wineries have annual sales ranging from 200,000 – 4,000,000 litres and large wineries have annual sales exceeding 4,000,000 litres (NZWINE, 2009). Table 5.2 below summarises the size distribution of respondent wineries.

Table 5-2: Size of respondent firms

Tons Crushed last year	South Africa		Litres (000) sold last year	New Zealand	
	No	Percent*		No	Percent*
1- 500	75	67.6 (71.2)	< 200	79	69.0 (84.4)
> 500 - 5000	29	26.1 (19.4)	200 – 4,000	28	24.1 (9.3)
> 5000	7	6.3 (9.4)	> 4,000	8	6.9 (1.0)
Total	111	100	Total	116	100

*Population proportions are in parenthesis.

The results show that the majority (67.6 percent) of the South African respondent firms were small wineries; while 26.1 percent were medium sized and the remaining 6.3 percent were

large wineries. The response pattern almost mirrors the population distribution. For example, according to SAWIS (2009), firm distribution in South Africa is as follows: 71.2 percent are small wineries, 19.4 percent are medium scale wineries and 9.4 percent are large wineries. This is in line with the response rates where 67.6 percent of responses are small firms, 26.1 percent are medium sized firms and 6.3 percent are large firms.

Likewise, the majority of New Zealand respondents (69.0 percent) were small wineries, followed by medium scale wineries (24.1 percent). Large wineries accounted for 6.9 percent of respondents. Although not as close as the South African case, the response distribution in New Zealand is also generally in line with the population distribution where 88.4, 9.3 and 1.0 percent of wineries are small, medium and large wineries respectively. In New Zealand, medium sized firms (24.1 percent) were more represented in the sample than reflected in the population (9.3 percent). This may be due to the fact that some firms reported a different size from what the published data suggested is their size. This meant that what they report as their size puts them in a different category to that which the published data puts them. On follow up, it emerged that size varies from one year to the next depending on harvest quantities and sales volume with marginal firms switching from one category to another as their output increases or decreases, even if the change is minuscule. This also applies to the South African case.

5.3.2 Age of the Respondent Firms

Table 5-3: Age of wineries (years in operation)

Age (yrs)	South Africa		Age (yrs)	New Zealand	
	No	Percent		No	Percent
< 1 yr	0	0	< 1	1	0.9
> 1 – 5	13	11.7	> 1 – 5	21	18.1
> 5 – 10	23	20.7	> 5 – 10	33	28.4
> 10	75	67.6	> 10	61	52.6
Total	111	100		116	100.0

In terms of the age distribution of firms, 67.6 percent of the South African respondent wineries have been operating for over 10 years, while 20.7 percent of the respondents have been operating for between 5 and 10 years. The remaining 11.7 percent have been operating for less than 5 years. The same pattern is observed for the New Zealand wineries, where the majority (52.6 percent) have been operating for more than 10 years. Those that have been operating for 5-10 years accounted for the second largest responses (28.4 percent), and those that have been in operation for 5 years or less accounted for 19.0 percent of all responses.

5.3.3 Ownership Structure of the Respondent Firms

Table 5-4: Ownership structure of wineries

Structure	South Africa		New Zealand		
	No	Percent	Structure	No	Percent
Sole Ownership	15	13.5	Sole Ownership	31	26.7
Partnership	22	19.8	Partnership	20	17.2
Family owned	38	34.2	Family owned	57	49.1
Controlling interest	5	4.5	Controlling interest	4	3.4
Non Controlling interest	31	27.9	Non Controlling interest	4	3.5
Total	111	100	Total	116	100

In terms of the ownership structure, most of the wineries in both countries were family owned, with this category accounting for 34.2 and 49.1 percent for South Africa and New Zealand respectively. The next most popular ownership mode in South Africa was the non-controlling interest (27.9 percent). These are essentially cooperatives that source grapes from shareholder growers. In New Zealand the next popular ownership mode was sole ownership (26.7 percent). Controlling interest was not common in either country, accounting for 4.5 percent and 3.5 percent in South Africa and New Zealand respectively.

5.3.4 Cross Tabulations: Age and Ownership Structure of Respondent Firms

Table 5-5: Cross tabulations between age of the firm and ownership structure (%)

Years (yrs)/Ownership Structure	South Africa					Total
	Sole Ownership	Partnership	Family owned	Controlling Interest	Non Controlling Interest	
>1- 5	2.7	2.7	4.5	0.0	1.8	11.3
> 5 – 10	3.6	3.6	7.2	0.9	5.4	20.7
> 10	7.2	13.5	22.5	3.6	20.7	67.6
Total	13.5	19.8	34.2	4.5	27.9	100.0
Years/Ownership Structure	New Zealand					Total
	Sole Ownership	Partnership	Family owned	Controlling Interest	Non Controlling Interest	
< 1 yr	0.0	0.0	0.9	0.0	0.0	0.9
>1- 5 yrs	5.2	3.4	7.8	1.7	0.0	18.1
> 5 – 10 yrs	9.5	5.2	11.2	0.0	2.6	28.4
> 10 yrs	12.1	8.6	29.3	1.7	0.9	52.6
Total	26.7	17.2	49.1	3.4	3.4	100.0

The cross tabulations between age of firms and ownership structure shows that the majority of the South African firms (22.5 percent) were family owned wineries that have also been operating for more than 10 years. The next popular combination was firms that have been operating for more than 10 years and were held under the non controlling interest ownership mode. Only 0.9 percent of the firms that have been operating for between 5 and 10 years were also held under the controlling interest ownership mode. The New Zealand firm

age/ownership structure cross tabulation results show that like in South Africa, the majority of the wineries (29.3) were family owned firms that have also been operating for more than 10 years.

5.4 Construct Descriptive Statistics

The mean values were calculated to provide a general picture or central tendency of the respondents' opinions on the independent variables. For example, the mean for the trust variable gives a general picture about the degree to which wineries trust growers. These descriptives are only done on the independent variables because the dependent variables are dealt with in the substantive question of what coordination strategies wineries in South Africa and New Zealand employ.

Table 5-6: Construct descriptive statistics and their t-test for equality of means

	Mean NZ#	Mean SA#	t	Sig.	Mean difference	Std. error	t-test for equality of means (95% Confidence Interval of the Difference)	
Trust	3.977	3.923	0.879	0.374	0.054	0.061	-0.066	0.174
Monitoring	4.010	3.901	0.809	0.417	0.109	0.134	-0.155	0.372
Incentives	3.496	2.992	8.685	0.000*	0.503	0.058	0.389	0.617
Item Criticality	4.241	4.254	-0.155	0.877	-0.012	0.079	-0.168	0.143
Legal System	3.168	3.004	2.403	0.017**	0.164	0.078	0.0103	3.181
Size	2.397	3.135	4.588	0.008**	-0.739	0.016	0.421	1.056

*(p<0.001); ** p<0.05; # NZ - New Zealand and SA - South Africa

For South Africa, grape quality as measured by Item criticality together with Monitoring and Trust scored favourably (mean \approx 4). This suggests that the grape quality was generally perceived as very important to the wineries' operations, there were high levels of trust between wineries and grape growers and there were high levels of monitoring of grape growers/vineyards by wineries. The same can be said for the New Zealand wineries as the mean score for these variables is also \approx 4. The Independent t-test for equality of means shows that there are no significant differences on these variables between the two countries. That is, perceptions about the importance of grape quality in South Africa are the same as those in New Zealand so are the perceptions about levels of trust and monitoring in the two countries.

With a mean score of 2.992 and 3.495 for South Africa and New Zealand respectively, incentives were only used sometimes in South Africa and more often in New Zealand. This represents a significant (p <0.001) difference in the use of incentives to encourage grower performance in the two countries. Wineries in New Zealand tend to use incentives more often than their South African counterparts. Further, in line with the research's initial expectation that the effectiveness of the legal system in New Zealand would be perceived more

favourably than that of South Africa in protecting exchange relationships, the mean score for New Zealand is just above that of South Africa, and the difference in the perceptions about the ability of the legal system to protect exchange relationships is significant at the ($p < 0.05$) level. Lastly, the average winery is significantly smaller in New Zealand than in South Africa.

5.5 Instrument Validity and Reliability

Instrument validity for this study was ascertained through content/face validity, criterion related validity and construct validity. Instrument reliability was measured through the cronbach alpha and item-to-total item correlations.

5.5.1 Instrument Validity

Content/face validity: Content validity of the scale was achieved through peer review with other researchers within the Lincoln University Faculty of Commerce. The instrument was also reviewed by researchers within the Department of Agricultural Economics at the University of Stellenbosch, South Africa. In addition, the scale was piloted with 21 wineries in New Zealand. The researchers and the winery managers were of the view that the instrument measured what it intended to measure.

Criterion related validity: In order to achieve criterion related validity, this research relied heavily on scales that have been used in previous studies. For example, monitoring, incentives and item criticality were adapted from Fraser (2005), trust was adopted from Kumar, *et al.*, (1995) and the legal framework from the World Bank (2003).

Construct validity: This measure attempts to identify or establish the underlying construct being measured and is usually captured through the unidimensionality test (Cao, 2001). As stated in Chapter four, exploratory factor analysis was used to assess unidimensionality. For each country, tests were carried out on the data to determine whether items constituting the key variables of trust, monitoring, incentives, the legal system as well as the control variable of item criticality would be grouped into independent factors. However, before performing the exploratory factors analysis on the constructs, the research had to first ensure that the data was suitable for factor analysis. The KMO measure of sampling adequacy and the Bartlett's test for Sphericity were used to achieve this task.

For both countries, the factor solutions showed a KMO measure of sampling adequacy above the acceptable 0.6 level (Pallant, 2007) and a significant ($p < 0.001$) Bartlett's test for Sphericity (see tables below). These statistics confirmed that the data was appropriate for

factor analysis. The cut-off for factor loading was set at 0.550 so as to ensure that the analysis could only capture scales that loaded strongly on their factors. Tables 5.7 and 5.8 present the exploratory factor solutions for South African and New Zealand respectively. The South African and New Zealand factor solutions produced different order of items and are reported as per the solutions.

Table 5-7: Exploratory factor solutions for South Africa

Items	Components (factors)									
	1	2	3	4	5	6	7	8	9	10
Mon1	0.884									
Mon2	0.923									
Mon3	0.885									
Mon4	0.827									
Mon5	0.760									
Mon6	0.844									
Mon7	0.812									
Mon8	0.885									
Mon9	0.844									
T1								0.769		
T2							0.634			
T3							0.714			
T4		0.575								
T5		0.920								
T6		0.784								
T7		0.809								
T8		0.835								
T9		0.925								
T10		0.861								
Inc1			0.634							
Inc2			0.789							
Inc3			0.613							
Inc4			0.851							
Inc5			0.773							
Inc6			0.825							
Inc7			0.692							
Inc8			0.570							
L1				0.852						
L2				0.856						
L3										0.598
L4								0.866		
L5				0.701						
L6				0.839						
IC1*										
IC2					0.794					
IC3					0.713					
IC4					0.686					
IC5					0.645					
IC6					0.933					
IC7						0.760				
IC8						0.624				

% of variance explained = 72.198. * factor loadings are below the 0.55 cut off and are not reported. KMO = 0.711. BTS (p < 0.001)

Note: KMO = KMO measure of sampling adequacy and BTS = Bartlett's test for Sphericity.

The South African data was appropriate for exploratory factor analysis (KMO = 0.711 and BPS is significant (p < 0.01). The factor solution came up with ten factors. Factors one to five

loaded with the acceptable three or more items and factors six to ten loaded with the unacceptable two or less items. The items that loaded on factors six to ten were therefore dropped from further analysis. This resulted in a five factor solution for the South African data. In particular, the monitoring variable wholly loaded on factor 1 and this research felt comfortable that the variable measured what it intended to measure.

The trust variable generally loaded on factor two as seven out of a total of ten trust items loaded on this factor. Item one loaded on factor eight and items 2 and 3 on factor seven. These were dropped from the analysis and factor two was presumed to measure what the trust variable intended to measure. It is not immediately clear why items 1, 2, and 3 did not hang together with the items that loaded on factor two. However, since trust is a multidimensional concept (Ring & Ven, 1992; Sako, 1992), it is most probably that factor one items captured one dimension of trust and the others captured a different dimension. For example, factor one items are more in line with Sako's (1992) good will trust, where parties are expected to make an open ended endeavour to take initiatives that benefit both parties. The other factors are more aligned to Sako's (1992) contractual trust, which emphasises confidence that the partner is predictable and can therefore be relied upon. The research however only used factor one because the other two factors did not constitute the minimum required items of three.

Factor three loaded with all the items that constituted the incentives variable. This satisfied the research that in South Africa, the incentive variable measured what it was intended to measure. Factor four loaded with four of the six items intended to capture the legal system construct. The other two items loaded on factors nine and ten but were dropped from further analysis. The research was therefore satisfied that factor four measured what the legal system construct intended to measure. South Africa was considered to have a weak legal system as compared to New Zealand. This was because, for example, it takes 600 days on average to enforce a contract in South Africa as compared to only 216 days in New Zealand (World Bank, 2010). The perceived weakness of the legal system may have influenced the factor allocation of items, and although not the objective of this research, it may have also helped identify where the weaknesses lie within the system. For example, factor four (the factor considered to measure the legal system's enforcement mechanism) loaded with items that may be classified as strengths of the legal system when it comes to enforcing contracts such as being fair, honest, consistent and credible. However, items that did not load on this factor may be classified as problems with enforcing contracts such as low speed of contract enforcement (as stated above, it takes 600 days to enforce contracts) and high litigation costs.

This implies that the legal system loaded mainly with what was perceived as the positives or strengths of the South African legal system, and the perceived weaknesses loaded elsewhere and were thus dropped from further analysis.

The fifth factor loaded with five of the eight items intended to measure item criticality. Two other items loaded on factor six and one item (item 1) did not load at the 0.555 loading cut off. The two items that loaded on factor six and the item that did not load at the 0.555 cut off were therefore dropped from further analysis. This research was satisfied that factor five captured what item criticality intended to measure. An important observation is that factor five items were generally captured with the chemical and taste quality attributes such as sugar content, acidity, flavour and tannins. Items that did not load on factor five are more aligned to physical quality attributes such as material other than grapes, physical damage and disease damage. Two of these items, physical damage and disease damage loaded on factor five. This suggests that the item criticality items could be split into two constructs, one constituting chemical attributes and the other constituting physical attributes. This research settled for the factor that constituted chemical attributes because it met the minimum requirements of the number of items and the factors that constituted the physical attributes did not, and were therefore dropped from further analysis.

What the South African data factor solutions reveal is that items that were intended to capture the monitoring variable loaded on factor one. Generally, items that were intended to capture trust, incentives, the legal system and item criticality loaded on factors two, three, four and five respectively. The other five factors loaded with one or two items only and were subsequently dropped from the analysis. There were, however, some interesting observations on the dropped factors such as items having different quality attributes to those retained for further analysis which points to directions of further research. These are discussed in the next chapter. Having reported on the results of the South African exploratory factor solutions, the focus is now turned to the New Zealand factor solutions. These are presented on table 5.8 below.

Table 5-8: Exploratory factor solutions for New Zealand

Items	Components (factors)								
	1	2	3	4	5	6	7	8	9
Mon1	0.929								
Mon2	0.913								
Mon3	0.701								
Mon4	0.720								
Mon5	0.697								
Mon6	0.819								
Mon7	0.790								
Mon8	0.830								
Mon9	0.666								
T1*									
T2*									
T3		0.704							
T4		0.691							
T5		0.846							
T6		0.886							
T7		0.826							
T8		0.841							
T9		0.750							
T10		0.824							
Inc1			0.869						
Inc2			0.688						
Inc3			0.927						
Inc4			0.670						
Inc5			0.738						
Inc6			0.902						
Inc7								0.828	
Inc8								0.804	
IC1									0.771
IC2				0.550					0.646
IC3				0.910					
IC4				0.631					
IC5				0.749					
IC6				0.873					
IC7								0.802	
IC8								0.821	
L1						0.815			
L2						0.887			
L3					0.808				
L4					0.830				
L5					0.696				
L6					0.642				

% of variance explained = 71.950. * factor loadings are below the 0.55 cut off and are not reported. KMO = 0.702. BTS ($p < 0.001$).

Note: KMO = KMO measure of sampling adequacy and BTS = Bartlett's test for Sphericity.

With a KMO measure of sampling adequacy of 0.702 and a significant Bartlett's test for Sphericity, the New Zealand data was also found to be appropriate for factor analysis. The factor analysis produced a ten factor solution and the first five factors corresponded with the intended variables of monitoring (factor one), trust (factor two), incentives (factor three), item criticality (factor four) and the legal system (factor five). The other five factors represented either cross loadings or loadings with only two items or less.

In particular, like with the South African case, items intended to measure the monitoring variable loaded on factor one. Eight of the ten items intended to measure the trust variable loaded on factor two. Items one and two did not load at the 0.550 loading cut off point. The research was therefore satisfied that the eight items that loaded on factor two measure what the trust variable intended to measure. Other factors were dropped from the analysis as they were loaded with only one and two items. As with the South African case, factor two items are more in line with Sako's (1992) good will trust and the other factors are more aligned to Sako's (1992) contractual trust. Further empirical work may therefore have to take the different dimensions of trust into account.

Factor three was loaded with six of the eight items that were meant to capture the incentives variable. The other two items loaded on factor eight. This factor was therefore dropped from the analysis and the research was satisfied that factor three measured what the incentives variable intended to measure. The two items that loaded on factor eight were mainly those related to the provision of incentives to ensure grapes' physical qualities of damage and disease control. As with the South Africa case, this may suggest that further research may need to separately consider chemical and physical attributes of grapes.

Four of the eight items meant to capture the item criticality variable loaded on factor four. Item two cross loaded on factors four and nine. Item one loaded on factor nine while items seven and eight loaded on factor seven. Factor four was therefore presumed to measure what the item criticality variable intended to measure. The other factors were not considered for further analysis because they loaded with fewer than the required three items.

A total of four out of the six items that constituted the legal system variable loaded on factor five. This factor was therefore considered to measure what the legal system intended to measure. Items one and two loaded on factor six and this factor was subsequently dropped from further analysis. It is not clear why these two items were misaligned with the other four items. However, the two items are more aligned to the judicial systems' moral standing such as fairness and impartiality and the other items seem to be aligned towards judicial systems' effectiveness such as speed of resolving disputes, cost effectiveness of the legal system and its ability to enforce decisions.

What emerges from the New Zealand exploratory factor analysis is that items that were intended to measure the monitoring variable loaded on factor one. Generally, and those that were intended to measure trust, incentives, item criticality and the legal system loaded on factors two, three, four and five respectively. The other five factors loaded with one or two items only and were therefore dropped from the analysis.

Lastly, what is clear from the South African and New Zealand exploratory factor analysis process is that items that were intended to capture a given variable heavily loaded on one factor. As a result, the research was able to derive five factors in both countries and these factors were identified with the intended variables of monitoring, trust, incentives, the legal system and item criticality. In the two countries, the other five factors loaded with only one or two items and were subsequently dropped from the analysis. There was however some interesting observations on the dropped factors such as items having common attributes among themselves but different attributes to those retained for further analysis. This may suggest possibilities for further refinements of the constructs. This point is discussed in the next chapter. The factors that were considered to capture the intended variables were carried over for further analysis and were subjected to the reliability test.

5.5.1.1 Scale Reliability Assessment

The Cronbach's alpha (α) is the most commonly used method of assessing reliability in empirical research (Kao, 2007). In this research, Cronbach's alpha was derived for all the constructs of interest. It was supplemented by item-to-total correlation scores. Table 5.9 below presents results of the reliability tests. It is important to note that some items that were carried over for further analysis during the validity procedure were dropped after subjecting the constructs to reliability test because this test allows for further refinement of the scales. Table 5.9 below presents the reliability test results.

Table 5-9: Scale reliability measures (α)

South Africa				New Zealand			
Construct and α	Items	α if item deleted	Item to total correlation (r)	Construct and α	Items	α if item deleted	Item to total correlation (r)
Trust $\alpha = 0.956$ (6 items)	T5	0.910	0.868	Trust $\alpha = 0.917$ (6 items)	T5	0.901	0.792
	T6	0.924	0.748		T6	0.887	0.869
	T7	0.927	0.749		T7	0.906	0.788
	T8	0.921	0.768		T8	0.900	0.790
	T9	0.908	0.870		T9	0.916	0.656
	T10	0.915	0.815		T10	0.902	0.777
Monitoring $\alpha = 0.951$ (9 items)	Mon1	0.944	0.848	Monitoring $\alpha = 0.913$ (5 items)	Mon1	0.887	0.872
	Mon2	0.942	0.898		Mon2	0.902	0.845
	Mon3	0.943	0.860		Mon6	0.924	0.668
	Mon4	0.948	0.784		Mon7	0.925	0.657
	Mon5	0.951	0.701		Mon8	0.909	0.646
	Mon6	0.946	0.702				
	Mon7	0.948	0.762				
	Mon8	0.944	0.850				
	Mon9	0.946	0.797				
Incentives $\alpha = 0.868$ (8 items)	Inc1	0.861	0.539	Incentives $\alpha = 0.966$ (3 items)	Inc1	0.909	0.960
	Inc2	0.842	0.709		Inc3	0.951	0.930
	Inc3	0.864	0.524		Inc6	0.920	0.951
	Inc4	0.831	0.787				
	Inc5	0.846	0.678				
	Inc6	0.839	0.732				
	Inc7	0.858	0.572				
	Inc8	0.866	0.483				
Legal $\alpha = 0.870$ (3 items)	L1	0.766	0.823	Legal $\alpha = 0.754$ (4 items)	L3	0.638	0.651
	L2	0.826	0.916		L4	0.692	0.558
	L6	0.851	0.905		L5	0.704	0.536
					L6	0.744	0.460
Item criticality $\alpha = 0.830$ (3 items)	IC1	0.742	0.712	Item criticality $\alpha = 0.838$ (5 items)	IC2	0.841	0.578
	IC2	0.821	0.645		IC3	0.768	0.839
	IC5	0.727	0.762		IC4	0.848	0.544
					IC5	0.842	0.572
					IC6	0.785	0.782

Reported in pairs of South Africa (SA): New Zealand (NZ), the following cronbach alphas were attained, Trust (SA=0.956: NZ=0.917), Monitoring (SA=0.951: NZ=0.913), Incentives (SA=0.868: NZ=0.966), legal system (SA=0.870: NZ=0.754) and Item criticality (SA=0.830: NZ=0.838). All were above the acceptable levels of 0.70 (George & Mallery, 2009). The item-to-total correlations are also very high. They were all above the acceptable 0.30 rule of thumb level for this test (Cao, 2001). This shows that the items building all the variables generally follow the same direction or hang together.

5.6 The Main Research Results

The main results of this research aim at achieving the research objectives. These are:

- (a) To integrate TCE theory, agency theory, relational exchange theory and the contract enforcement mechanism of the legal system and develop a multi-paradigm governance framework that is more effective in protecting exchange relationships than any exchange protection framework in isolation.
- (b) To use the multi- paradigm governance framework developed in (a) above to help explain why firms use incomplete contracts despite their vulnerability to *ex post* opportunism.
- (c) To investigate the structure of, and the differences between the South African and New Zealand wineries' grape sourcing strategies.

The third research objective was achieved through the analysis of the coordination strategies employed by wineries in the two countries and the second research objective was achieved through the hypotheses testing phase. The first research objective was achieved through the development of the multi-paradigm framework in chapter three.

5.6.1 The Coordination Strategies: Options, Differences and Similarities

Three key coordination strategies of hierarchy, contract and the spot market have been found to be common within the wine industry (Scales *et al.*, 1995; Somogyi *et al.*, 2010). The presence or use of these strategies to coordinate grapes sourcing was therefore investigated for this research. Also investigated were the differences and similarities in the coordination strategies employed in the two countries. This helped achieve the third research objective.

5.6.1.1 Coordination Options

The proportion of grapes sourced through a given coordination strategy was coded on a scale of 1 - 5 where (1-19 percent was coded as "1" and 80-100 percent was coded as "5"). The actual proportions were also asked for and were provided in the majority of cases (Appendix 1, question one shows the coding details). The results confirmed that indeed wineries use the coordination options of hierarchy, contract and the spot market to source their grapes. Table 5.10 below shows the contribution of the three strategies to total grapes requirements in the last harvest year.

Table 5-10: Contribution of grape coordination strategies to total grape requirements

Coordination strategy	South Africa			New Zealand		
	Mean	Std Dev.	Contribution to total grapes	Mean	Std. Dev.	Contribution to total grapes
Spot Market	1.189	0.393	15.806	1.181	0.387	14.435
Vertical Integration	3.550	1.777	47.182	4.362	1.058	53.319
Contract	2.784	1.147	37.011	2.638	1.050	32.245
		Total	100.00*	Total		100.00*

*Totals may not add up due to rounding up.

The spot market mean value of 1.189 and 1.181 for South Africa and New Zealand suggests that the spot market was used to source 15.81 and 14.44 percent of total grapes for the two countries respectively. Internal production of grapes contributed the highest share of grape needs for wineries in both countries, accounting for 47.18 and 53.32 percent for South Africa and New Zealand respectively. Grapes sourced through a contract were 37.01 percent of South African total grape requirements and 32.25 percent for New Zealand's grape requirements. These results are in line with Scales *et al.*, 's (1995) findings that wineries typically use a combination of the three grape sourcing strategies of the spot market, contract and own production to meet their grape needs. Further, the small contribution of the spot market relative to that of contracting and own production to the total grape requirements is in line with Drabenstott (1995) who argued that industrialisation of the agricultural sector has brought a shift from spot market transactions to more direct market channels such as production contracts and vertical control. This shift is said to have been a result of emerging market forces (Barkema, Drabenstott, & Welch, 1991; Kirsten & Sartorius, 2002) where the new consumer is a highly demanding one who demands the best quality and the new producer is the one who designs their governance structure in a way that allows them to have control over quality and their marketing strategies. Responses given to this research for the dominance of the internal production of grapes corroborated the above argument as they centred on issues related to quality control. Firms noted that own production of grapes was a strategy of choice because it ensured access to high quality grapes. Further, it was said to be an effective marketing tool as wineries will advertise that they "grow" and "process" their own grapes. This, they argued, would show that they are indeed in control of the quality of their wines. In addition, many wineries under family and/or sole ownership noted that they are boutique wineries, indicating that they have their own piece of land and they produce their own unique wines. The fact that they have their own land allows them to produce grapes that meet the specifics of their unique wines. Lastly, over and above quality, some wineries noted that own production of grapes ensures the security of supply of grapes. That is over and above quality issues; own production of grapes assured them that there will be grapes available for use by the winery.

This notwithstanding, contracts were still seen as an important governance mode. As noted above, they accounted for over 30 percent of grape requirements in both countries. Major reasons for engaging in contractual relationships had to do with costs and quality. Contracting was said to help in ensuring the supply of quality grapes. Perhaps, not of the same quality as those produced in house but still good enough to produce a marketable product. Second, contracts were said to allow different terrior benefits in that the winery can have contracts with growers producing grapes on different regions with different soil and weather and soil conditions and this helps in the diversification of the final product. Different varieties require different soil and weather conditions and the only way wineries can produce different varieties that grow in different terriors is through geographically spreading the sources of grapes. Lastly, and probably most importantly, contracts were said to be a cost effective way of sourcing grapes. They were said to help transfer risk (mainly climatic risk) from the winery to the grower(s) and also help wineries save on capital inputs.

Accounting for only 13 - 14 percent of total grapes requirements in both South Africa and New Zealand, the spot market was unsurprisingly not seen as the governance mode of choice. This is because as observed above, the focus has turned towards customising exchange relationships in such a way that producers have control over the quality of their final product. For example, one winery noted that sourcing grapes from the spot market is not aligned with its “long term’ philosophy. In South Africa, many growers are shareholders of wineries. These growers supply the wineries with grapes and this reduces spot market trade. The spot market nevertheless serves some purpose, that of filling the gaps when there are shortfalls from both own production and contractual arrangements and also for blending purposes. Some wineries noted that the spot market becomes handy when they need grapes for blending purposes, as these grapes may be used to add more complexity to the flavour and texture of the dominant varieties. The next section identifies the similarities and differences in the grape sourcing strategies and thus helps to address the research question that sought to establish similarities and differences between the South African and New Zealand grape sourcing strategies.

5.6.1.2 *Similarities and Differences between Coordination Strategies by South African and New Zealand wineries*

In order to identify the similarities and differences between the South African and New Zealand winery grape sourcing strategies, the Independent samples t-tests were used to test

for the statistical differences between governance strategies employed in the two countries. The results are presented in table 5.11 below.

Table 5-11: The independent samples t-tests for the equality of means of governance structures

	Mean NZ#	Mean SA#	t	Sig.	Mean difference	Std. error	t-test for equality of means (95% Confidence Interval of the Difference)	
Spot Market	1.181	1.189	-0.157	0.875	-0.008	0.052	-0.110	0.094
Contract	2.784	2.638	-0.998	0.318	-0.146	0.146	-0.433	0.142
Vertical Integration	4.362	3.550	4.162	0.000*	0.813	0.195	0.432	1.198

NZ - New Zealand; SA - South Africa, *Significant at the ($p < 0.001$) level.

The governance modes were all measured on a scale of 1-5, where “1” represents the lowest score and “5” represents the highest score of a given mode. The results show that there are no significant differences between the two countries’ spot market and contracting governance strategies. However, some significant difference was found in the vertical integration strategy, with New Zealand wineries relying more on own production of grapes than the South African wineries. This is not very surprising because 49.1 percent of wineries in were family owned as compared to 38.0 percent for South Africa. The New Zealand firms emphasised the fact that they are boutique wineries that produce their own grapes.

5.6.2 Hypothesis Testing: Multiple Regression Analysis and the Independent Samples t-test.

This section tested the hypotheses developed in Chapter three. A total of nine hypotheses were tested using five multiple regression models and one Independent samples t-test. The multiple regression analysis is a statistical technique that can be used to analyse the relation between a single dependent variable and two or more independent variables (Hair *et al.*, 2010). All hypotheses except H_{2b} were tested through the multiple regression technique while H_{2b} was tested through the independent samples t-test. This test is useful when the objective is to compare the mean values of two different groups. It was used to test whether or not the South African legal system is statistically different from the New Zealand legal system. The multiple regression analysis technique was used to objectively assess the relationships between the dependent variables and the independent variables by estimating the predictive powers of the independent variables. It was used in hypotheses that helped explain why firms use incomplete contracts despite their vulnerability to *ex post* opportunism.

5.6.2.1 Results of the Hypotheses Tests

As stated above, five models were used to test the nine hypotheses. The testing process did not follow the numbering order of the hypotheses. Instead, hypotheses with a common dependent variable were grouped and tested through a single model. For example, hypotheses one used contracting as the dependent variable and was tested through the first model (labelled model 5.1). The first part of hypothesis two (H_{2b}) and hypothesis three used spot market as the dependent variable and were both tested through the second model (5.2). Hypotheses four, seven, eight and nine used vertical integration as the dependent variable and were collectively tested through the third model (5.3). The fourth (5.4) and fifth (5.5) models used monitoring and incentives as dependent variables and were used to test hypotheses five and six respectively.

Hypothesis One

This was the research's main hypothesis and it directly helped achieve the research's second objective of explaining why contracts are widely used even though they expose exchange relationships to opportunism. This hypothesis emanated from an observation during the literature review that although incomplete contracts associated with the TCE expose transactions to exchange hazards, they (contracts) are still widely used as a governance mechanism (Fraser, 2005). This has also been confirmed by the current research. It has been found that contractual use is the second most popular governance mode after vertical control in both South Africa and New Zealand. This is surprising, more so that there are other supposedly cheaper and less hazardous governance options such as transacting with trusted partners (relational exchange theory) and monitoring and providing incentives to trading partners to encourage their performance (agency theory). This research suggests that the continued use of incomplete contracts is partly due to the fact that they are in fact complimented by the exchange safeguards associated with relational norms such as trust as well as monitoring and incentives. The research extends the argument by proposing that, in addition, the legal system also gives assurances that recourse to the law provides added safeguards against trading partners' opportunistic behaviour. Contracting is therefore encouraged and complemented by trust, monitoring, incentives and the legal system. Hence,

H₁: Monitoring, incentives, trust and the legal system encourage contracting.

In testing this hypothesis, the contracting governance mode was the dependent variable and the key independent variables were trust, monitoring, incentives, and the legal system. A positive relationship was expected between the dependent variable and the key independent

variables. Item criticality, firm size and age were the control variables. The hypothesis was tested through model 5.1 below:

$$Contracting = \alpha + \beta_1 Trust + \beta_2 Monitoring + \beta_3 Incentives + \beta_4 Legal + \beta_5 Itemcriticality + \beta_6 FirmSize + \beta_7 FirmAge + \varepsilon_i$$

Equation 5-1: Contracting regression model

The regression results of the above model are presented in table 5.12 below.

Table 5-12: Model 5.1 regression results

South Africa					New Zealand				
Variables	β	t	Sig	VIF	Variables	β	t	Sig	VIF
Constant	-3.795	-2.048			Constant	-3.212	-2.360		
Trust	0.748	1.869	0.064***	1.302	Trust	0.280	1.883	0.062***	1.195
Monitoring	0.271	2.368	0.020**	1.247	Monitoring	0.354	4.691	0.000*	1.081
Incentives	0.463	1.740	0.085***	1.141	Incentives	0.411	2.616	0.010**	1.074
Legal	0.294	2.319	0.022**	1.175	Legal	0.631	1.815	0.072***	1.156
Item criticality	-0.313	-1.993	0.049**	1.043	Item criticality	-0.042	-0.299	0.765	1.049
FirmSize	0.179	1.858	0.066***	1.113	FirmSize	0.223	1.735	0.086***	1.094
FirmAge	0.378	2.782	0.006**	1.067	FirmAge	-0.075	-0.729	0.468	1.043
$r^2 = 0.343$. $F = 7.087^*$.					$r^2 = 0.361$. $F = 8.714^*$				

Significant at the *($p < 0.001$); ** ($p < 0.05$) and *** ($p < 0.010$) levels.

Results: The two countries have significant F values ($p < 0.05$). This suggests that at least one of the independent variables explains variations in contracting as a governance mode. This gives affirmation that the regression coefficient of determination (r^2) is not zero. It is therefore not surprising that the r^2 for South Africa is 0.343 and for New Zealand is 0.361. This implies that the model explains 34.3 percent and 36.1 percent of variation in contracting in South Africa and New Zealand respectively. The beta coefficients for the key independent variables of trust, monitoring, incentives and the legal system take the expected positive sign for both countries. The p-values for trust and incentives are significant at ($p < 0.10$) and those of monitoring and the legal system are significant at the ($p < 0.05$) level for South Africa. Hypothesis one was therefore supported by the South African data. The control variables of firm size ($p < 0.10$) and age ($p < 0.05$) had a positive and significant ($p < 0.05$) relationship with contracting, while item criticality had a negative and significant relationship with contracting.

With the New Zealand data, the p-values for monitoring and incentives are significant at the ($p < 0.01$) and ($p < 0.05$) levels respectively. The trust and the legal system variables are significant at the ($p < 0.10$) level. This shows that hypothesis one is also supported by the

New Zealand data. As for the control variables, firm size is positively correlated with contracting and is significant at ($p < 0.10$). Item criticality and firm age have a negative but insignificant relationship with contracting.

Since the hypothesis is supported for both countries, there is strong support for the argument that contracting is encouraged and complemented by trust, incentives, monitoring and the legal system. This provides insights into why contracts are widely used despite their obvious limitations of exposing transactions to opportunism. This research argues that because of the positive correlation between contracting (dependent variable) and the independent variables of trust (relational exchange theory), monitoring and incentives (agency theory) and the contract enforcement mechanism provided by the legal system, the independent variables complement contracting in protecting exchange relationships against opportunism. While no other study was found to have simultaneously tested the relationship between contracting and the above exchange protection frameworks, the results are in line with various studies that have tested the contractual relationships that used the different exchange protection frameworks or used a narrower theoretical perspective.

For example, Logan (2000) used agency theory to try to answer two pertinent questions of what can the transport user do to encourage quality service and fair treatment by the transport provider and, what can the provider do to satisfy the demands of the user without compromising its own goals? She concludes that both the behaviour based (monitoring) and outcome based (incentives) contracts should be used since the former favours the service provider and the latter favours the service user. Poppo & Zenger (2002) found a positive relationship between contracting and relational governance (trust) within the information services exchanges. Managers were found to couple customised contracts with high levels of relational governance. A related study on the strategic relationships between French firms by Beave & Saussier (2010) found that contracts could serve as a framework for guiding the course of cooperation and cooperation helps firms overcome the adaptive limits of contracts. The latter studies not only show the successful use of contracts by firms to protect exchange relationships but also show that different exchange protection mechanisms can be used in a complementary manner, such as formal contracts being used to develop and nurture cooperation and cooperation helping firms resolve any contractual disputes. Further, Mina (2006) investigated the importance of contract enforcement in international lending and found that improvement in contract enforcement seemed to increase the level of the country's

lending ability as this gave the creditors some assurance that the lending contract would most likely be honoured within an improved legal framework.

These studies suggest that aspects of agency and relational exchange theory as well the legal system provide exchange protection, and that these frameworks complement each other in protecting exchange relationships. Incomplete contracts may therefore be widely used without the expected transaction hazards because they are partly protected by trust, monitoring and the legal system.

Hypothesis Two and Three

Hypothesis two and three used the spot market as the dependent variable. They were essentially concerned with factors that influence variations in the spot market governance mode. The second hypothesis was based on the premise that, as suggested by hypothesis one, the legal system protects exchange relationships against opportunism. It gives assurances that spot market players that act opportunistically would be prosecuted. Thus, it encourages spot market transactions as it acts as a guarantor of exchange performance. The spot market here does not envisage discrete transactions where each party is certain never to meet the other party (Macneal, 1978), but rather arms length exchanges without any close relationship or joint commitment (Lambert *et al.*, 1996) but with possibilities for repeated transactions (Webster, 1992). Hence;

H_{2a} : *The legal system encourages spot market transacting.*

This research is of the view that a strong legal system protects exchange relationships better than a weak legal system. For this reason, the stronger New Zealand legal system (World Bank, 2008) is expected to provide better protection to exchange relationships than the weaker South African legal system. Hence,

H_{2b} : *A stronger legal system (New Zealand) better protects exchange relationships than a weaker (South African) legal system.*

Hypothesis three was influenced by the fact that spot market actors generally have arms length relationships in which trust plays little or no role in facilitating exchange between partners (Lambert *et al.*, 1996). On the other hand, monitoring and incentives assume a continuous relationship in which performance is continually evaluated and punishments and rewards applied by participants when the need arises. Since arms length transactions do not

allow for planned incessant interaction between the parties, monitoring and incentives are not expected to have any meaningful exchange protection qualities for spot market/arms length transactions. They are therefore expected to provide exchange protection in contractual arrangements and offer no or little protection to the spot market transactions. This again discourages spot market transacting. Hence,

H_3 : *Trust, monitoring and incentives discourage spot market transacting.*

In testing H_{2a} the spot market governance mode was the dependent variable and the legal system was the independent or explanatory variable. A positive relationship was expected between the two countries' legal systems and the spot market. The spot market was still the dependent variable in the test for H_3 . The independent variables were trust, monitoring and incentives. A negative relationship was expected between the spot market and the independent variables. Model 5.2 below was used to test H_{2a} and H_3 . Item criticality, firm size and age were the control variables.

$$SpotMarket = \alpha + \beta_1 Trust + \beta_2 Monitoring + \beta_3 Incentives + \beta_4 Legal + \beta_5 ItemCriticality + \beta_6 FirmSize + \beta_7 FirmAge + \varepsilon_i$$

Equation 5-2: Spot market resgression model

The results of testing model 5.2 are presented in table 5.13 below.

Table 5-13: Model 5.2 regression results

South Africa					New Zealand				
Variables	β	t	Sig	VIF	Variables	β	t	Sig	VIF
Constant	-0.021	-0.030			Constant	-0.504	-1.002	0.319	
Trust	0.297	1.967	0.052***	1.302	Trust	0.307	5.600	0.000*	1.195
Monitoring	0.014	0.317	0.752	1.247	Monitoring	-0.014	-0.488	0.626	1.081
Incentives	-0.49	-0.491	0.625	1.141	Incentives	-0.151	-2.604	0.011**	1.074
Legal	0.175	3.647	0.000*	1.175	Legal	0.231	1.801	0.074***	1.156
Item criticality	-0.087	-1.464	0.146	1.043	Item criticality	0.011	0.217	0.829	1.049
Size	-0.012	-0.329	0.743	1.113	Size	0.131	2.752	0.007**	1.094
Age-Co	0.001	0.011	0.991	1.067	Age-Co	0.025	0.658	0.512	1.043
$r^2 = 0.202$. $F = 3.733^*$					$r^2 = 0.358$. $F = 8.590^*$				

Significant at the *($p < 0.001$); ** $p < 0.05$ and *** ($p < 0.010$) levels.

Results: The F statistic is significant ($p < 0.01$) for the two countries. Hence the model explains some variation in the spot market transacting decisions. The r^2 for South Africa

suggests that 20.2 percent of the variation in the South African spot market mode is explained by the model. The statistic stands at 0.358 for New Zealand, which suggests that 35.8 percent of the variation in the spot market transacting is explained by the model.

The beta coefficients for the legal system are positive and significant for South Africa ($p < 0.001$) and New Zealand ($p < 0.10$), a suggestion that indeed the legal system encourages spot market transacting in both countries. H_{2a} is therefore supported in both South Africa and New Zealand. H_{2b} purports a strong legal system as a better protector of exchange relationships than a weak legal system. This hypothesis was tested through the Independent-Samples t-test approach. However, before reporting the results of the Independent samples t-test, results of hypothesis three are first reported because this hypothesis was tested through the model that was used to test H_{2a} . That is, the model that used the spot market as its dependent variable.

The results for hypothesis three show that for South Africa, the beta coefficients for trust and monitoring take the unexpected positive signs. However, only trust is significant at the ($p < 0.10$) level but as noted above, it is in the wrong direction. The incentive variable takes the expected negative sign but is insignificant. Hypothesis three is therefore not supported by the South African data. The positive and significant trust variable raises important issues that will be discussed shortly. In New Zealand, the incentives variable takes the expected negative sign and is significant ($p < 0.05$). Monitoring takes the expected negative sign but is insignificant. Similar to the South African data, trust takes the unexpected positive sign and is significant ($p < 0.01$). The hypothesis is therefore partially supported for New Zealand. The trust variable follows the South African case and takes a positive (wrong direction) and significant sign. The significance of the unexpected relationship between trust and the spot market in both countries implies that the results did not occur by chance and thus warrant an explanation. A look at the organisational structures of the wine industries in the two countries may shed light on the behaviour of the spot market-trust relationship in the two countries. In both countries, wineries and growers are members of their respective national winery associations and these associations have some control on the behaviour of members (NZWINE, 2009; SAWIS, 2009). Since the wineries and growers are members of the same organisation, and in line with Lambert et al., (1996), it may be inappropriate to classify non-contracted but externally sourced grapes as strictly “spot market sourced”. This is because these grapes are essentially sourced from growers that are within the inner circle of wineries, and may therefore be known

to the wineries. Under such circumstances, it may not mean that the wineries go to the conventional spot market to source extra grapes, but rather acquire grapes from growers that the wineries' did not have an active supply contract with but still known to the wineries. There is also a high likelihood that they would have purchased from them before.

Further, one of the main objectives of the umbrella wine organisations is to drive and promote quality within the two countries' wine industries. For example, the NZ WINE annual report of (2009) notes that New Zealand wine is marketed as a national brand and states in clear terms that "protecting and promoting that brand is essential for each individual grower and winery and for the industry as whole and for the national organisation" (p. 6). Likewise, according to the South African Wine and Brandy Company (SAWB) (2003), the core of the South African wine industry marketing strategy is to promote the South African wine as a national brand called 'Brand South Africa' and every member is expected to play a part in making this strategy a success. Therefore, mutual membership of the wider organisation seems to suggest informally agreeing to produce a certain level of quality, the level that is acceptable to the national organisation, the same way contracting parties would agree to maintain certain quality levels. Membership of the same organisation by wineries and growers therefore points to a silent but effective unwritten contractual agreement.

Hence, the existence of national organisations in each country seem to suggest that the spot market in both countries is not a typical spot market that is characterised by one off interactions without any expectations of future interactions. It seems it functions like a contractual agreement of some sort where the contract is represented by the collective belonging of the firms to the wider industry organisation. Thus, since spot market transactions may represent some form of a pseudo contractual relationship that is enforced by collective belonging to the organisation, then the unexpected positive relationship between the spot market (pseudo contract) and trust would be in line and supportive of hypothesis one where the results showed a significant positive relationship between contracting and trust. That is, while the relationship between spot market and trust was unexpected, it may well have been supportive of this research's main theoretical stand point that contracts are supported by other exchange frameworks including relational norms. In addition, growers in both countries have no alternative market for their grapes. They are captive to the wineries, especially the big ones that dictate or determine grape prices. Growers are therefore forced to toe the wineries' line and this may be seen by wineries as the existence of trusting relationships between growers and wineries. A discussion with growers may portray a different picture.

This argument is in line with the transaction governance literature. Webster (1992) observes that pure spot market transactions are rare, and that their importance as the beginning of the transaction continuum is for theoretical rather than practical reasons. What is observed in the real world is arms-length transactions (Lambert *et al.*, 1996) or repeated transactions (Webster, 1992), where exchange partners may engage in single or repeated transactions but without any meaningful ongoing relationship between them. Such relationships have rudimentary levels of credibility and may therefore not be treated as purely spot market relationships. This may therefore explain the positive and significant relationship between spot market (arms-length) transactions and trust. Thus, the fact that wineries belong to the same wider organisation may act as a pseudo contractual relationship and hence the positive relationship with trust. This suggests that, as with hypothesis one, trust encourages the contractual relationships, which in this case are pseudo contractual relationships represented by mutual membership of the same national organisation by wineries and growers. This therefore provides further support to hypothesis one that contractual performance is encouraged by other exchange protection frameworks.

Returning to H_{2b}, this hypothesis argues that a strong legal system better protects exchange relationships than a weak legal system. This hypothesis was tested through the Independent-Samples t-test technique. This technique is useful when a researcher wants to compare the mean scores of two different groups. In this case, the research compared the mean score of the legal system variable in South Africa with that of New Zealand. The key objective was to establish whether the mean score of the New Zealand legal system is significantly higher than the mean score of the South African legal system. The results are presented in table 5.14 below.

Table 5-14: Independent t-test for the equality of means – the legal system

Mean #NZ	Mean #SA	t	Sig (2-tailed)	Mean difference	Std Error	t - test for equality of means (95% Confidence Interval of the Difference)	
						Lower	Upper
3.168	3.004	2.148	0.017*	0.164	0.076	0.014	0.315

#NZ - New Zealand; SA - South Africa, Significant at the (p < 0.05) level.

The results show that the mean score for New Zealand (3.168) is 0.164 larger than that of South Africa (3.004), an indication that the New Zealand legal system was perceived to offer better protection to exchange relationships than that of South Africa. This result is statistically significant (p < 0.05), which shows that the difference in opinions about the performance of the legal systems in both countries did not occur by chance. This shows that the New Zealand

legal system better protects exchange relationships than the South African legal system. H_{2b} was therefore supported.

Hypotheses Four, Seven, Eight and Nine

Hypotheses four, seven and eight had vertical control as the dependent variable. They helped the research explore the causes of variations within the vertical integration governance mode. Hypothesis four was based on the premise that since monitoring and incentives are contractual safeguards, they offer firms an alternative governance mode to vertical control. That is, monitoring and incentives would help firms transfer transactions that are not suitable for execution within the firm to the market through monitoring and incentives supported contractual arrangements. Since monitoring and incentives provide firms with an option of contracting out functions that are not suitable for internalisation within the firm, it is fair to expect these variables (monitoring and incentives) to discourage vertical control. A negative relationship was therefore expected between vertical integration and monitoring and incentives. Further, since the legal system mainly plays a role in facilitating transactions between two independent entities, it encourages inter-firm contractual and spot market transactions. That is, the legal system encourages firms to transfer transactions that are better handled by the market to the market and hence discourages firms from internalising such transactions. A negative relationship was therefore expected between vertical control and the legal system, therefore;

H_4 : *Monitoring, incentives and the legal system discourage vertical integration.*

Hypothesis seven was a control hypothesis. The hypothesis main influence was the various perceptions in the literature about other factors that may affect the choice of coordination measures. While there may be many such factors, this research restricted itself to firm size, age and the importance of the sourced input (item criticality). Larger firms are said to be more likely to do everything themselves as a way of reducing per unit costs (Scherer & Ross, 1990). Further, the choice of governance mechanism may be influenced by the differentiation of the sourced item (Fernández-Olmos *et al.*, 2009). As such, wineries producing wine for the premium market are more likely to internalise the grape production process as a mechanism of ensuring that the grapes they use are of high quality. Lastly, mature firms are more likely to

integrate because they have more resources to do everything themselves (Everaert *et al.*, 2010). Hence;

H_7 : Vertical integration is positively correlated with firm size

H_8 : Vertical integration is positively correlated with item criticality.

H_9 : Vertical integration is positively correlated with firm size

Model 5.3 was used to test the above four hypotheses. The model examined the relationship between internalisation of transactions or vertical integration (VI) with six independent variables, monitoring, incentives, the legal system and controlled for item criticality, firm size, and age. Model 5.3 takes the form:

$$\text{Vertical - Integration} = \alpha + \beta_1 \text{Monitoring} + \beta_2 \text{Incentives} + \beta_3 \text{Legal} + \beta_4 \text{ItemCriticality} + \beta_5 \text{FirmSeize} + \beta_6 \text{FirmAge} + \varepsilon_i$$

Equation 5-3: Vertical integration regression model

Table 5.15 below summarises the results obtained from running model 5.4.

Table 5-15: Model 5.3 regression results

South Africa					New Zealand				
Variables	β	t	Sig	VIF	Variables	β	t	Sig	VIF
Constant	5.670	3.080			Constant	7.314	5.173	0.000	
Monitoring	-0.128	-0.752	0.454	1.111	Monitoring	-0.044	-0.559	0.577	1.064
Incentives	-3.330	-0.792	0.430	1.130	Incentives	-0.217	-1.330	0.186	1.033
Legal	-0.580	-2.922	0.004**	1.164	Legal	-1.025	-2.869	0.005**	1.085
Item criticality	0.857	3.507	0.001*	1.025	Item criticality	0.468	3.193	0.002**	1.026
Firm Size	-0.505	-3.390	0.001*	1.078	Firm Size	-0.437	-3.215	0.002**	1.093
Firm Age	-0.485	-2.290	0.024**	1.046	Firm Age	-0.043	-0.395	0.693	1.042
$r^2 = 0.316$. $F = 8.017^*$					$r^2 = 0.287$. $F = 7.318^*$				

Significant at the *($p < 0.001$); ** $p < 0.05$ and *** ($p < 0.010$) levels.

Results: The F statistic for both countries is significant ($p < 0.01$), which supports the model fit. The r^2 for South Africa suggests that 31.6 percent of the variation in vertical integration decisions is explained by the model. The r^2 for New Zealand shows that the model explains 28.7 percent of the variation in vertical integration decisions in New Zealand.

Hypothesis four results show that the legal system has a negative and significant ($p < 0.05$) correlation with vertical control in both South Africa and New Zealand. Hence, the legal system discourages vertical control in both countries. This may primarily be because since the

legal system helps reduce transaction uncertainties (Cungu, Gow, Swinnen, & Vranken, 2008; Mina, 2006), it may help keep transactions within the contractual and spot market arrangements. Again these results may provide support for hypothesis one that argued that the legal system encourages contractual arrangements. That is, holding everything constant, the legal system would help keep transactions within the market through contractual arrangements rather than push them to internal organisation of the firm. Other hypothesised relationships within hypothesis four, namely, monitoring and incentives also assumed the expected negative relationship but were insignificant. The insignificance of these variables may be explained by the fact that theoretically they are not important antecedents of the vertical control governance mode. They are traditionally formal contract enforcement mechanisms (Bergen *et al.*, 1992; Eisenhardt, 1989) and while they may generally be negatively correlated with vertical control, they may not have any significant role to play in a unified firm, and thus of little relevance in the vertical integration discussions.

The test results for hypothesis seven show the unexpected negative and significant ($p < 0.01$) correlation between vertical integration and firm size in South Africa. The same results were obtained for New Zealand, except that the significance level was ($p < 0.05$). The hypothesis was therefore not supported for either country. However, these results are in line with those of Diez-Vial (2009) who found that vertical integration is more noticeable in small firms than in large firms. In particular, they support Fernandez – Olmos *et al.*, 's (2009) findings on the determinants of vertical integration in the wine industry who found that size of the winery is negatively related to vertical integration and argue that this is because it is a disincentive for large wineries to produce their own grapes because managers would have to spend a lot of time visiting their vineyards. The reason why the hypothesis was not supported may simply be that the literature (Scales *et al.*, 1995) which guided the hypothesis may have focused more on the economies of scale as a determinant of vertical control and paid little attention to issues of quality and the orientation of small wineries. Recent literature (Diez - Vial, 2009; Fernández-Olmos *et al.*, 2009) suggests that small wineries seem to be family owned with own vineyards therefore are more likely to produce own grapes than larger wineries as this offers them the advantages of lower grower dependence and better exploitation of existing capabilities.

The eighth hypothesis envisaged a positive relationship between item criticality and vertical integration. The results showed support for this hypothesis in both countries. These results were in line with those of Fernandez – Olmos *et al.*, (2009) who found that wineries that

produce high quality wines are more likely to integrate their grapes production than wineries that produce low quality wines because they seek maximum control of the wine supply chain so as to minimise the chance of losing reputation. The results are also consistent with Goodhue *et al.*, (2003) who found that growers that produce high quality grapes are more likely to use formal written contracts than growers who produce low quality grapes. The ninth and last hypothesis investigated the relationship between vertical integration and firm maturity. The results were significant ($p < 0.05$) but assumed the wrong sign.

Hypothesis Five

The background of this hypothesis was that incentives and monitoring encourage contracting in that the principal's and the agent's interests are aligned, therefore making it less appealing for the agent to behave opportunistically. But this is costly as it involves the monitoring and incentive costs which arise due to environmental uncertainty. These can be partially addressed by trust, in that trust reduces the need to check if the other party is really doing what they promised to do. The legal system also plays an important role as it also complements monitoring. Further, incentives are likely to align the interests of the principal with those of the agent, and hence complement monitoring in ensuring goal alignment between agents and principals and thus reduce the associated monitoring costs. That is, trust, incentives and the legal system complement monitoring and thus reduce monitoring costs. Hence;

H₅: Trust, the legal system and incentives complement monitoring.

Model 5.4 was used to test this hypothesis. The model examined the relationship between monitoring as the dependent variable and trust, the legal system and incentives as the key independent variables. Item criticality and firm size and age were used as control variables. The model takes the form:

$$\text{Monitoring} = \alpha + \beta_1 \text{Trust} + \beta_3 \text{Incentives} + \beta_4 \text{Legal} + \beta_5 \text{ItemCriticality} + \beta_6 \text{FirmSize} + \beta_7 \text{FirmAge} + \varepsilon_i.$$

Equation 5-4: Monitoring regression model

Table 5.16 below summarises the results from testing hypothesis five.

Table 5-16: Model 5.4 regression results

South Africa					New Zealand				
Variables	β	t	Sig	VIF	Variables	β	t	Sig	VIF
Constant	-1.851	-1.173			Constant	2.005	1.167		
Trust	1.154	3.563	0.001*	1.160	Trust	0.243	1.296	0.198	1.177
Incentives	0.240	1.059	0.292	1.129	Incentives	0.230	1.160	0.248	1.061
Legal	0.068	0.624	0.534	1.171	Legal	0.470	1.069	0.288	1.144
Item Criticality	0.181	1.360	0.177	1.025	Item Criticality	-0.164	-0.928	0.355	1.041
Firm Size	0.052	0.633	0.528	1.108	Firm Size	-0.175	-1.079	0.283	1.083
Firm Age	-0.157	-1.357	0.178	1.048	Firm Age	-0.094	-0.716	0.476	1.039
$r^2 = 0.198$. $F = 4.275^*$					$r^2 = 0.075$. $F = 1.464$				

*($p < 0.001$); ** $p < 0.05$ and *** ($p < 0.010$).

Results: With a significant ($p < 0.01$) F value, the model fit suggests that at least one of the independent variables explains the variation in the monitoring variable in South Africa. Further, the r^2 shows that the model explains 19.8 percent of the variation in the monitoring variable. The hypothesis was partially supported for South Africa with the trust variable showing the expected positive and significant ($p < 0.05$) relationship with the monitoring variable. However, both incentives and the legal system assumed the expected positive relationship but were not statistically significant. The results for New Zealand showed the expected positive relationships but were nevertheless all insignificant. The positive and significant relationship between monitoring and trust for South Africa is consistent with this research's argument of complementarity between exchange protection frameworks. The results are therefore consistent with hypothesis one's results where monitoring (agency theory) was found to complement other exchange frameworks including trust (relational exchange theory) in protecting against exchange hazards associated with bounded rationality and opportunism. These results are also consistent with Ryall & Sampson's (2009) findings when they examined contracts for joint technology development in the telecommunications equipment industry with a view to determine how their content is affected by relational considerations. They found that the effects of prior dealing experience (relational considerations) on the probability that the firms' contracts contain three or more monitoring clauses were statistically significant. Further, they found that firms that had prior experience with any partner were 11% more likely to include monitoring provisions in their current deals. They argued that repeated interactions between firms allow them to learn from past interactions and helped them to include some monitoring contractual clauses that were not in the previous contracts. Further, Mayer & Argyres (2004) studied contracts from the personal computer industry and found that sometimes parties involved in an ongoing relationship, but

with the desire to have it continue into the future (relational), tend to incorporate adjustments made in past projects into future contractual arrangements. They argue that the adjustments would be made with the objective of preventing similar disputes from arising in the future.

However, two important questions arise from the analysis of hypothesis five. First, why was the relationship between monitoring and trust significant in South Africa and not in New Zealand? Second, why were the relationships between the monitoring variable and incentives and the legal system not significant in both countries? This research cannot provide conclusive answers to these questions. However, a closer look at the data and the literature offers some useful insights. Raja and Schaefer (2007), Vinogradova (2006) and Woldie (2009) suggest that when the state is perceived as being incapable of fully guaranteeing contract enforcement, firms increasingly rely on alternative relational ways of enforcing business transactions. This then suggests that, while the legal system does provide some protection to exchange relationships in both South Africa and New Zealand, because of the perceived weakness of the South African legal system relative to the New Zealand legal system (H_{2b}), the South African wineries are more likely to complement formal contractual exchange protection arrangements with relational contract enforcement than their New Zealand counterparts. This may explain why the monitoring (an aspect of formal contracting) and trust (relational) relationship was significant in South Africa and not in New Zealand.

Another possible reason for the insignificant results for the relationship between monitoring and incentives in this study for both countries may be that, while the two variables complement each other in protecting exchange relationships, the fact that the wineries and growers belong to the same organisation may be providing another layer of goal alignment between wineries and growers and this may somehow water down the significance of the direct relationship between monitoring and incentives. Further, growers solely rely on wineries as the market of the product which may also align the behaviour of growers with the interests of the wineries and hence play down the importance of monitoring and incentives in the winery-grower relationship.

As for the relationship between monitoring and the legal system, it appears little has been done in the literature to model this relationship. The literature on the relationship between contract complexity (including monitoring) and the state or performance of the legal system (contract enforcement) is very thin. Instead, the literature seems to have concentrated more on whether contractual complexity and trust are substitutes or complements with some

commentators suggesting that they are substitutes (Raja & Schaefer, 2007; Reuer & Arino, 2007; Woldie, 2009) and some suggesting that they are complements (Argyres *et al.*, 2007; Ryall & Sampson, 2009). This research therefore did not find any study that investigated the relationship between monitoring, let alone contractual complexity and contract enforcement or strength of the legal system.

Hypothesis Six

The background of this hypothesis is the argument that in a trusting relationship where the desire to create close ties between trading partners is key, the need for paying substantial incentive costs as a way of ensuring exchange performance would be reduced. Trust complements what incentives seek to achieve and thus reduces incentive costs. The research therefore hypothesises that;

H_6 : *Trust complements incentives.*

Incentives is the dependent variable and trust, together with the control variables of item criticality, firms size and age are the independent variables. The relationship between incentives and trust is expected to be positive because the two are complementary and seek to achieve a common goal of ensuring exchange performance, which is expected to ultimately reduce incentive costs. Model 5.5 was used to test this hypothesis and it takes the following form:

$$Incentives = \alpha + \beta_1 Trust + \beta_2 ItemCriticality + \beta_3 FirmSize + \beta_4 FirmAge + \varepsilon_i$$

Equation 5-5: Incentives regression model

The results are presented in table 5.17 below.

Table 5-17: Model 5.5 regression results

South Africa					New Zealand				
Variables	β	t	Sig	VIF	Variables	β	t	Sig	VIF
Constant	2.062	3.070			Constant	2.390	4.161		
Trust	0.265	1.884	0.062***	1.105	Trust	0.202	2.403	0.018**	1.041
Item Criticality	-0.049	-0.826	0.411	1.017	Item Criticality	0.028	0.327	0.745	1.039
Firm Size	-0.002	-0.053	0.958	1.068	Firm Size	0.033	0.429	0.669	1.045
Firm Age	0.039	0.762	0.448	1.042	Firm Age	0.041	0.663	0.509	1.029
$r^2 = 0.044$. $F = 1.222$					$r^2 = 0.057$. $F = 1.685$				

** p<0.05 and *** (p<0.010).

Results: The beta coefficient of the trust variable is, as expected positive and significant for South Africa ($p < 0.10$) and New Zealand ($p < 0.05$). The hypothesis is therefore supported in both countries. The results are in line with prior research. Tzafirir (2005) investigated the relationship between human resource practices and managers' trust in their employees and found that organisations that exhibited high managerial trust in employees were found to base their compensation systems on performance. Hueth, Ligon & Melkonyan (2008) examined interactions among formal (including a measure of whether a formal contract adjusts payment for quality) and informal or relational contracting practices within the California fruit and vegetable markets and found a positive correlation between the two. They concluded that the findings suggest a complementary relationship between formal and informal contracts. This also supports hypothesis one's findings, where incentives and trust were found to complement each other in protecting exchange relationships through encouraging contractual performance.

5.7 Summary of Hypothesis Tests

This chapter has presented the results of implementing the research plan outlined on chapter four. The results show that all the constructs valid and reliable. The following table (5.18) summarises the results of the hypotheses tests and also provides a summary of comments on the results.

Table 5-18: Summary Results of Hypotheses Tests

Hypotheses	Test Results		Comments
	South Africa	New Zealand	
H1: Monitoring, incentives, trust, and the legal system encourage contracting	Supported	Supported	Test significant for both countries.
H2a: The legal system encourages spot market transactions.	Supported	Supported	Test significant for both countries, and thus help explain why incomplete contracts are used despite their vulnerability to holdup.
H2b: A strong legal system protects exchange relationships better than a weak legal system.	Supported (Not country specific but comparative).		Independent Samples t-test significant.
H3: Trust, monitoring and incentives discourage spot market transactions.	Not supported	Partially supported.	Unexpected signs and insig. for SA. One expected sign for NZ also significant. Raises some theoretical questions.
H4: Monitoring, Incentives, and the legal system discourage vertical integration.	Partially supported	Partially supported	Expected signs but some coefficients insig.
H5: Trust, the legal system and incentives complement monitoring	Partially supported	Not supported	One sig. variable for SA and all insig. variables for NZ.
H6: Trust complements incentives.	Supported	Supported.	Sig. for both countries.
H7: Vertical Integration is positively correlated with larger firms.	Not supported	Not supported	Sig. for both countries.
H8: Vertical integration is positively correlated with item criticality.	Supported	Supported.	Sig. for both countries.
H9: Vertical integration is positively correlated with age of firms.	Not supported	Not supported	Sig. for SA and insig. For NZ.

5.8 Chapter Summary

In broad terms, this chapter covered instrument validation, determination of the wineries' grape coordination strategies and hypothesis testing. The instrument validity and reliability process yielded good constructs that facilitated the data analysis and the hypothesis testing process. What emerged from the exploratory factor analysis phase was that for both countries, items that were intended to capture a given construct heavily loaded on one factor. As a result, the research was able derive five factors for both countries and these factors were identified with the intended variables of monitoring, trust, incentives, the legal system and item criticality. Further, the results show that wineries in the two countries employ the three common coordination strategies (Scales *et al.*, 1995) of the spot market, contracting and vertical control. However, vertical integration was found to be statistically more prevalent in New Zealand than in South Africa, and that there were no statistically significant differences in spot market transacting and contracting between South Africa and New Zealand. In

addition, the hypothesis testing showed a significant and positive relationship between contracting and trust, incentives, monitoring and the legal system in both countries. This supports this research's argument that relational norms, monitoring, incentives and the contract enforcement mechanism provided by the legal system complement contracting in protecting exchange relationships against opportunism. This provides insights into why contracts are widely used despite their obvious limitations of exposing transactions to opportunism. The chapter also showed that the New Zealand legal system's effectiveness was rated higher than the South African legal system. This was in line with this research argument that strong legal systems protect exchange relationships better than weak legal systems. The next chapter will discuss these results and derive theoretical and managerial implications from these research findings.

Chapter 6

Disussion of Results and Theoretical Implications

6.1 Introduction

The literature review revealed that TCEs incomplete contracting framework exposes transactions to opportunism (Williamson, 1979, 1985). This notwithstanding, incomplete contracts were found to be still widely used (Dawes *et al.*, 2009; Goodhue *et al.*, 2003). However, TCE does not provide a theoretical reason why incomplete contracts are still widely used despite their limitations. In view of the failures of TCE in fully protecting exchange relationships and the lack of an explanation for the use of incomplete contracts, this research has developed a multi-paradigm exchange protection framework with the twin objectives of, (a) providing better exchange protection than any theory in isolation, and in particular, TCEs incomplete contracting framework; (b) explaining why companies use incomplete contracts despite their vulnerability to holdup. The new framework was tested and applied on the South African and New Zealand wine industries. The research therefore started with the following research objectives:

- (a) Integrating TCE, agency theory, relational exchange theory and the contract enforcement mechanism of the legal system to develop a multi-paradigm governance framework that is more effective in protecting exchange relationships than any exchange protection framework in isolation.
- (b) Using the multi-paradigm governance framework developed in (a) above to help explain why firms use incomplete contracts despite their vulnerability to *ex post* opportunism.
- (c) Testing the framework by investigating the structure of, and the differences between the South African and New Zealand wineries' grape sourcing strategies.

These objectives were addressed through the following research questions.

- (a) What governance strategies do firms in South Africa and New Zealand wine industries use to source their grapes?
- (b) Are there any differences or similarities between the South African and New Zealand grape sourcing strategies?

- (c) Can the continued use of incomplete contracts be explained through the theoretical underpinnings of TCE, agency theory, relational exchange theory and the efficacy of the legal system?

This chapter provides insights into the degree to which these research objectives have been achieved and the research questions addressed. The discussion is structured as follows. Section 6.2 will discuss the grape sourcing strategies adopted in both countries in terms of their contributions towards total grape requirements, reasons for their use as well as the similarities and differences of the strategies. This helped achieve the third research objective which aimed at investigating and explaining wineries' grape sourcing strategies.

Section 6.3 will briefly touch on the multi-paradigm framework and also discuss the results associated with the explanation of incomplete contracts. These results were obtained by using insights from the TCE, agency theory, relational exchange theory as well as the credibility of legal system to empirically test for the determinants of the three governance choices. The hypotheses results helped achieve the key objective of this research, which is explaining the continued use of incomplete contracts despite their vulnerability to hold up.

It has been noted that the first task of the current research was to use the literature within the exchange domains of TCE (Williamson, 1975, 1985), agency theory (Eisenhardt, 1989; Jensen & Meckling, 1976), relational exchange theory (Macaulay, 1963; Uzzi, 1997) and the legal framework (Arrighetti *et al.*, 1997; Vinogradova, 2006) to develop a multi-paradigmatic framework that provides added safeguards to incomplete contracts, and therefore help explain the continued use of incomplete contracts. The development of the multi-paradigmatic framework helped achieve the first objective of the current research.

6.2 Grape Sourcing Strategies by the South African and New Zealand wineries

This section has two broad foci of interest. First, discuss the grape sourcing strategies in the two countries and therefore address the first two research questions, one of which sought to find out what strategies were used by wineries in South Africa and New Zealand to source their grapes, and the other one which sought to identify the differences and similarities between the strategies in the two countries. The discussion in this section will also help achieve the second research objective, which is to investigate and explain the South African and New Zealand wineries' grape sourcing strategies.

6.2.1 Discussion of Grape Sourcing Strategies

The results showed that wineries in both countries adopted three main governance structures. On average, contributions to total grape requirements in both countries were as follows: Spot market (13-15 percent), contracting (33-38 percent) and own production of grapes (47-53 percent). The results corroborate the channel research literature (Lambert *et al.*, 1996; Peterson *et al.*, 2001) that argues that companies choose exchange coordination strategies from a wide range of options, and that it is possible for the different exchange mechanisms to be employed at the same time. The combination of the three governance modes allowed wineries to harness the advantages offered by each of the three governance modes, perhaps even ensuring that the right balance of the governance strategies was in place. In particular, they employed vertical control so as to harness its utility when it comes to ensuring quality of grapes, security of grape supply, and an added marketing leverage. They used contractual arrangements to help them minimise costs, transfer risk and ensure geographical diversification of sources of grapes, and they used the spot market to meet unforeseen grape shortages as well as a source of wine blending grapes. The governance structures are therefore not substitutes but instead allow wineries to use a mix of the three governance strategies in combinations that allow them to achieve optimal sourcing of grapes.

Further, there were no significant differences in the spot market and contractual arrangements between the two countries but there were significant differences in the vertical control strategy, with the South African industry less vertically controlled than the New Zealand industry. The difference between the two countries' vertical control strategy may be influenced by the average size of firms. Hypothesis seven results showed that smaller firms are more likely to grow their own grapes than larger wineries. The independent samples t-tests showed that the New Zealand firms were significantly smaller than their South African counterparts (Table 5.11), which suggest that they are more likely to integrate than the South African wineries. This observation led to *post hoc* analyses with the objective of understanding the extent of vertical integration by size by country. Vertical integration was captured by asking wineries to indicate the proportion of grapes sourced through own production on a scale ranging from least vertically integrated (1-19 percent) to most vertically integrated (80 – 100 percent). The results of the *post hoc* analysis are presented in table 6.1 below.

Table 6-1: Cross Tabulation of Vertical Control and Firm Size

South Africa				
Extent of Vertical Control (percentage of grapes sourced through own vineyard)	Firm Size			
	Small	Medium	Large	Total contribution to vertically sourced grapes
0 - 19	22.8	62.5	66.7	29.7
20 - 39	3.3	0.0	0.0	2.7
40 - 59	3.3	0.0	0.0	2.7
60 - 79	15.2	0.0	0.0	12.6
80-100	55.4	37.5	33.3	35.3
Total	100.0	100.0	100.0	100.0
New Zealand				
0 - 19	0.0	0.0	0.0	0.0
20 - 39	8.6	8.3	45.5	12.1
40 - 59	3.7	16.7	18.2	7.8
60 - 79	11.1	16.7	9.1	12.1
80-100	76.5	58.3	27.3	68.1
Total	100.0	100.0	100.0	100

The above table shows that small firms are more vertically integrated than medium and large firms in both countries, although more so in New Zealand than South Africa. For example, in New Zealand, 76.5 percent of all small firms are strongly vertically integrated, that is with internal grape production accounting for 80 – 100 percent of grape requirements. This compares favourably with the South African level of small firm integration where 55.4 percent of small firms were strongly vertically integrated. Further, although mediums scale firms were less vertically integrated than small firms, they were strongly integrated (58.3 percent) in New Zealand than in South Africa (37.5) whereas large firms were slightly more vertically integrated in South Africa (33.3 percent) than in New Zealand (27.3 percent). These results are against TCE predictions regarding vertical control and firm size. Williamson (1974) argues that large firms are more likely to integrate than small firms because diseconomies of scale limit integration. This view is supported by Shervani *et al.*, (2007) who observe that as the firm’s volume of business increases, its internal production costs are expected to decrease, hence encouraging the firm to internalise its activities. Thus, the current research’s results on the effect of size on vertical integration have TCE theoretical implications that will be discussed in the section that covers the theoretical implications of this research. In addition to firm size, two other possible reasons for vertical integration that have emerged in this research are quality control and marketing purposes. The independent samples t-tests were used to determine whether there are differences in the importance of quality of grapes in the two countries. The results showed no statistical difference between the quality perceptions between the two countries (Table 5.6). However, having established that small wineries are more likely to integrate, further tests were conducted to determine whether

there are any differences on the importance of quality between the South African and New Zealand small wineries. That is, the focus turned exclusively to small wineries. Unfortunately this yielded an insignificant result ($p = 0.289$), indicating that small wineries have similar perceptions of quality as medium and large scale firms in both countries. Thus, the importance of quality does not explain why small firms are more vertically integrated than large firms. What remained was therefore testing for the effects of marketing strategies on the vertical integration decisions. However, this was not part of the current research, a suggestion that future research may include other parts of the wine value chain in the analysis of the theoretical framework developed for this research. The data collected for this research therefore could not explain why small wineries were more integrated than medium and large wineries. However, the literature provides useful insights as to why small firms are more integrated. Nooteboom (1993) argues that large firms are better placed to deal with the limits imposed by bounded rationality as they have greater capacity to identify, collect and absorb relevant external information because of the ability to employ specialised staff in different functional areas such as legal matters, finance, technology research and development and many others. This suggests that market transactions may be better handled by large firms as they are more likely to better deal with information asymmetry than small firms. Hence, in line with the current research's findings, the need for quality control and problems associated with market governance may actually lead to more internalisation of transactions by small firms than large firms. Further, Diez-Vial (2009) suggests that vertical control offers the advantages of lower provider dependence and better exploitation of existing capabilities. Thus small firms may be more integrated because they have limited capacity to control their trading partners or simply because they have capacities that they wish to exploit.

In summary, the above discussion on the grape sourcing strategies of wineries in South Africa and New Zealand has shown that for both countries, vertical integration is the most dominant governance strategy, contracting is the second most popular strategy and the spot market is least popular strategy. Further, similarities and differences have been discussed. This section has therefore achieved the twin objectives of explaining and discussing the grape sourcing strategies used by wineries in South Africa and New Zealand. This helped achieve the third objective of the current research, which is to investigate and explain the South African and New Zealand wineries' grape sourcing strategies.

6.3 The Multi-Paradigm Framework and the Use of Incomplete Contracts

6.3.1 The Multi-Paradigm Framework

In order to explain the use of incomplete contracts, this research used insights from TCE, agency theory, relational exchange theory and the legal system to develop a multi-paradigm framework that improves exchange safeguard properties of incomplete contracts and therefore help explain their continued use. The development of the framework achieved the first objective of this research, which is to integrate the TCE, agency theory, relational exchange theory and the contract enforcement mechanism of the legal system. Detailed discussion of this multi-paradigm framework is presented in Chapter three and the summary framework is re-produced and further discussed in section 6.4 of this chapter (Theoretical Implications).

6.3.2 Why Firms use Incomplete Contracts despite their Vulnerability to Opportunism

The hypotheses testing phase used the multi-paradigm framework and to provide reasons for the use of incomplete contracts. While nine hypotheses were tested to help provide reasons for use of incomplete contracts, hypothesis one was the most important, and all other hypotheses were meant to help add clarity and meaning to what it intended to test. The premise of this hypothesis was that incomplete contracting is aided by the monitoring of the trading partner(s) behaviour, provision of incentives to the trading partner(s) and the building of norm based relationships between the trading partners as well as the efficacy of the legal system (all with the objective of encouraging trading partner(s) not to behave opportunistically). For the current study, the results showed that in South Africa, contracting for grapes was positively correlated with trust ($p < 0.05$), which is a relational exchange variable, monitoring ($p < 0.1$) and incentives ($p < 0.1$), which are agency theory variables and the legal system ($p < 0.05$). Likewise, for New Zealand, contracting was positively correlated with monitoring ($p < 0.001$), incentives ($p < 0.05$), trust ($p < 0.05$), and the legal system ($p < 0.05$). The hypothesis was therefore supported for both countries, which confirms that contracting is supported by monitoring, incentives, relational norms and the contract enforcement mechanism of the legal system. Incentives and trust were also found to discourage vertical integration and instead keep transactions within the market through contractual arrangement rather than push them into the internal organisation of the firm (H₄ and H₅). This further gave support to the argument that trust and the legal system are among the exchange protection mechanisms that help contractual stability. These results therefore show that wineries protect their contractual relationships with their growers through providing the growers with incentives and

monitoring them when necessary, building trusting relationships with the growers and relying on the court enforcement mechanism of the law to ensure grower compliance. The simultaneous building of trust with growers and monitoring of growers by wineries is against the propositions of the literature (Granovetter, 1985; Dyer & Sign, 1998) that argues that formal and relational governance measures are substitutes. The current research is in line with the literature (Argyres *et al.*, 2007; Ryall & Sampson, 2009) that views formal and relational governance measures as compliments. Thus, the monitoring is not adversarial but rather tailored to benefit both parties, and both parties' trust is perhaps in line with Sako's (1992) goodwill trust which implies that parties will make an open ended endeavour to take initiatives for the benefit of both parties and will not act opportunistically. Formal contracts help guide cooperation (Luo, 2002) and relational norms help improve the results of formal agreements (Beave & Saussier, 2010). Hence, in line with Lambert *et al.*, 's (1996), wineries simultaneously apply exchange protection mechanisms along the continuum to protect exchange relationships.

However, Wilson (1995) suggests that constructs/governance frameworks may be active or latent depending on whether the manager is satisfied with the governance framework or not. For example, he asserts that cooperation and commitment are likely to be active constructs or governance structures when the competitive abilities of partners are being enhanced by being in a relationship. He places this in the latter part of the relationship development process. Wilson (1995) argues that latent governance structures are still important because changes in the environment may activate them. The current research looked at the relationships in cross-section, and as is the case with cross-section studies, this limited the observation of the relationships to the point and time of data collection (Ruester, 2010). This meant that the research could not determine the stages at which the exchange protection qualities of agency, relational and the legal system are most likely to be active and when most likely to be latent, a limitation that may require dynamic analysis in future studies. What is apparent, however, is that the relationships between contracting and the exchange protection frameworks were significant and assumed the expected positive signs, which suggests that the protection frameworks encourages contracting. Further, the independent samples t-tests and H_{2b} have supported the current research's view that the New Zealand legal system is more efficient than the South African legal system, a situation which may result in wineries employing the four exchange protection frameworks in different ways. For example, the South African wineries are expected to rely more on relational norms to protect exchange relationships than the New Zealand wineries (Woldie, 2009). This view was indeed supported by the results. For

South Africa, the trust construct had the highest beta coefficient ($\beta=0.748$), followed by incentives ($\beta=0.463$). The legal system had the second lowest coefficient ($\beta=0.294$), just a bit higher than monitoring ($\beta=0.271$). Following Peterson *et al.*'s (2001) and Webster's (1992) continuums, this would suggest that at the time of data collection, trust or norms were the most important contributor to contractual performance in South Africa with incentives being the second most important and the legal being among the least important. Thus, while all the frameworks provided some form of exchange protection, trust was contributing more to contractual exchange protection in South Africa than all other frameworks. In New Zealand, the legal system had the highest influence in contracting decisions ($\beta=0.631$), followed by incentives ($\beta=0.411$) and trust is the least contributor ($\beta=0.280$). Hence as expected, companies are more likely to rely on the threat of litigation as an exchange protection mechanism in a credible legal system than in a less credible legal system. Firms operating within a credible legal system know that they may not get away with non-compliance. This provides added exchange protection. On the other hand, firms operating within a less credible legal environment know that they may get away with non-compliance and this reduces the legal system's ability to deter non-compliance. This shows that while relational norms, monitoring, incentives and the legal system support contracting in New Zealand, the legal system provides the highest support to contracting. This view is supported by the outcome of a recent case in which Goldridge Estate Vineyards, one of New Zealand's bigger wine producers took Kakara Estate to the High Court in Auckland following the latter's termination of its supply contract with Goldridge owned company, Hillersen Vineyard Contracting (Krause, 2010a). Goldridge sought and was granted interim halt to Kakara terminating the grape supply and vineyard management agreements (Krause, 2010b). This shows that the New Zealand legal system swiftly enforced the contract, which is in line with the research results that suggested wineries in the country view the legal system as the most important contributor to exchange protection.

It has to be pointed out however, that the fact that trust is the most important construct in protecting exchange relationships in South Africa (a country with a relatively weak contract enforcement framework) and the legal system is the most important framework in New Zealand (a country with a strong contract enforcement framework), does not necessarily imply that norms substitute for the legal system and vice versa. Hypothesis one results showed a positive and significant relationship between contracting and the legal system and trust in both countries which suggests that the two simultaneously contribute to contracting decisions, except that trust seems to play a more prominent role when the legal system is

weak and the court enforcement mechanism seem to carry more exchange protection burden when the legal system is strong. This view is in line with Yang, Zhou and Jiang (2010) who state that in the absence of formal controls, trust loses its structural foundation and provokes partner opportunism. They argue that while formal controls secure the proper behaviours of each transaction party, trust facilitates detailed processes with fewer transaction costs. Hence, formal contracts and norms work together.

The analysis of the spot market regression results also points to the complementarity between contracting and other exchange protection frameworks (H_{2a} and H₃). H_{2a} showed that the legal system encourage spot market/arms-length transactions. H₃ results demonstrated that trust encourage spot market transactions. Recall that it has been stated that wineries and growers in South Africa and New Zealand are closely linked by the fact that they belong to a single industry organisation in each country. One of the main objectives of the umbrella wine organisations is to drive and promote quality within the two countries' wine industries, which aligns the interests of the industry players. Further, growers are directly dependent on wineries for a market of their product. They are essentially captive suppliers of wineries due to lack of substitute uses of their grapes (see analysis of H₃ results). This suggests that instead of a traditional spot market, the governance mode with the least bilateral dependence for the wine industry is best represented by Lambert *et al.*, 's (1996) arms-length arrangement, where wineries and growers without close relationships may have engaged in some form of trade in the past and also stand a good chance of transacting again in the future. Webster (1992) sees arms-length arrangements as the start of a relationship based on trust and credibility and argues that such relationships cannot be viewed as free of trust. The existence of trust between industry players, no matter how small, may therefore encourage growers to honour their existing contractual obligations to wineries. Further, on the basis of the fact that wineries belong to the same organisation whose values are shared by growers and wineries, this research has argued that arm-length arrangements within the wine industry represents some form of artificial contractual relationships that is enforced by collective belonging to the organisation. Hence, the positive relationship between spot market/arms-length transactions and the legal system (H_{2a}) and trust (H₃) can safely be interpreted to imply a positive relationship between the artificial contract (arms-length transactions) and the legal system and trust. This therefore supports the overall argument of this research that contracting is supported or complemented by other exchange protection frameworks.

Further, the analysis of the vertical integration regression also gave credence to the above argument. The results showed a negative relationship between vertical integration and the legal system (H4). This shows support for the argument that the legal system encourages contractual arrangements because a negative relationship with vertical integration suggests that the legal system keeps transactions within the market rather than pushes them into the internal organisation within the firm. The market entails both contractual and spot market arrangements. Since it has been argued that the spot market represents artificial contracting due to the closeness of growers and wineries, the market represents a range of contractual relationships with different levels of complexity. This however does not mean that vertical integration does not have a role to play in protecting exchange relationships. The discussion on the grape sourcing strategies has shown that vertical integration is mainly driven by the desire to control the production of good quality grapes. This was confirmed by H8, which was a control hypothesis. This hypothesis envisaged a positive relationship between item criticality as a measure of the importance of the quality of sourced grapes (Fraser, 2005) and vertical integration. Thus, the framework for this research argues that vertical control is chosen when contracting cannot achieve the desired results, such as the high quality standards.

The above discussion therefore shows that contracting, be it arms-length artificial contracts or formal contracts between growers and wineries, is supported and complemented by the key exchange protection mechanisms of monitoring, incentives, norms and the efficacy of the legal system. These other exchange protection mechanisms therefore encourage contractual relationships in both countries. This shows that incomplete contracts are used because they are complemented by the added exchange safeguards associated with other exchange protection mechanisms such as the agency theory (monitoring and incentives), relational exchange theory (norms such as trust) and the efficacy of the legal system. This goes a long way in explaining the continued use of the TCE incomplete contracts despite their vulnerability to *ex post* opportunism and therefore helps achieve the first and second objective of this research, which was to integrate the TCE, agency theory, relational exchange theory and the legal system and explain why firms use incomplete contracts. The discussion further confirms that the stronger New Zealand legal system protects exchange relationships better than the weaker South African legal system. This is so because countries with good contract enforcement offer better protection to specific investments than countries with weak legal systems (Nunn, 2007). On the other hand, firms internalise activities that are too strategic to be contracted out. That is, vertical integration is more a matter of capabilities of the contracted

firm than the behaviour of the contracted firm. Behavioural issues such as opportunism may be addressed through a multi-paradigm contract but this contract cannot control for genuine lack of capabilities of the contracted firm. As such, when firms believe they are the best at undertaking a given task, they internalise that task.

6.4 Implications

6.4.1 Theoretical Implications

The current research has made three theoretical contributions to the exchange literature, all largely concerned with protecting exchange relationships from trading partner(s)' opportunism. These are: (a) the development of a multi-paradigm framework that this research believes offers better protection to exchange relationships than any theory in isolation (chapter three), (b) the explanation of the continued use of incomplete contracts despite their vulnerability to hold up and (c) the size - vertical control relationship and TCE and (d) incorporating the importance of the legal system into the mainstream exchange theoretical framework.

6.4.1.1 The Development of a Multi-Paradigm Exchange Framework

TCE asserts that due to bounded rationality, contracts are incomplete and this exposes exchange relationships to hold up by opportunistic agents (Williamson, 1985). Because of this contractual exchange threat, TCE predicted that transactions would be protected through vertical control. However, as earlier indicated, contracts are still widely used (Fraser, 2005). This research has also investigated the governance strategies of wineries in South Africa and New Zealand and confirmed the use of contracts in the two countries. It is against this background that the current study set out with the key objective of explaining why contract use is prevalent despite its vulnerability to holdup. The search for an explanation started with an intensive review and interrogation of other exchange theories, agency theory and the relational exchange theory. In addition, the role of the legal system in protecting exchange relationships was investigated through the review of the literature and its transaction protection qualities were identified which led to its integration into the development of the multi-paradigm framework.

The extensive review of these other theories together with the legal system revealed that these exchange protection frameworks have important exchange protection qualities. While TCE emphasised contractual complexity as a way of protecting transactions, agency theory emphasised monitoring of and the provision of incentives to agents to achieve goal alignment between the agent and the principal, and relational exchange theory emphasised the

development of trusting relationships between exchange partners. The legal system was found to protect exchange relationships through legal enforcement in case agents renege on their contractual obligations. This suggested that all these frameworks had a common goal, which is protecting exchange relationships. Based on this realisation, the current research integrated the TCE incomplete contracting schema with the agency theory monitoring and incentive provision, relational exchange theory norms such as trust as well as the court contract enforcement mechanism and developed a multi-paradigm exchange framework that has elements of all the four exchange protection frameworks. The main strength of the new framework is that it exploits the exchange protection mechanisms of all these frameworks. That is, it makes use of contract complexity, monitoring, incentives and the threat of judicial litigation. The framework reproduced below.

Table 6-2: The multi-paradigm exchange protection framework (reproduced)

	Transaction Cost Theory	Agency Theory	Relational exchange theory	Legal System	Multi-Paradigm Exchange Framework
Objective:	Reduce actors' opportunism.	Reduce agent's opportunism.	Reduce actor's opportunism	Enforce agreements	Offers a multi-variable protection of exchange relationships
Modalities of achieving the objective:	Complex contracting to try to capture as many contingencies as possible.	Goal alignment (incentives and monitoring) to ensure similar goals	Building of norm based relationships to reduce the incentive for cheating.	Punishing for contract violation, even if it means force (fiat).	Integrated approach encompassing, complex contracting, goal alignment, trust and court contract enforcement to provide a holistic approach to exchange protection.
Behavioural assumptions:	Actors are self centred and are always ready to cheat and deceive in their quest to meet their self interest.	Principals and agents are self centred and thus have conflicting goals. Agents risk averse and principals are risk neutral.	Trading partners are cooperative and have common goals. E.g. both want to engage in future transactions.	Actors are self centred; hence the need for a third party to control their opportunistic tendencies.	Trading partners may be both self-centred and common goal oriented. Thus, no single approach is enough to address opportunism, hence the need for an integrated approach.
Theoretical Focus	The Transaction	The contract	Mutual exchange relationship	The contract	Exchange environment. That is, the transaction, contract and relationship.
Nature of relationships	Arms length for non asset specific transactions. Otherwise adversarial relationships requiring strategic interventions such as complex contracting and vertical control.	Adversarial relationships requiring an optimal contract that aligns principal and agent's goals.	Cordial relationships based both on past interactions and expected future interaction and mutual benefit.	Adversarial relationships, hence the need for third party enforcement.	Relationships can either be cordial, adversarial or have elements of both, requiring an integrated approach (strategic, goal alignment, mutual norms based and third party enforcement) to address opportunism.
Time Dimension:	Short term for non asset specific transactions and long term for asset specific transactions.	<i>Ex ante</i> – with all incentives and monitoring tools agreed before signing the contract. No <i>ex post</i> re-negotiations.	Long term – with relationships built over time and expectations for continuation of the relationship.	Instantaneous. I.e. when the principal calls for contract enforcement. This assumes an efficient legal system	Short and long term. The integrated approach ensures that appropriate tools are used as and when the need arises. That is, it moderates both <i>ex ant</i> and <i>ex post</i> time dimensions.

The framework adopts Larbert *et al.*'s (1996) arms-length governance mode when transactions are free of specific assets. Once transactions involve specific assets or exchange hazards, companies use the multi-paradigm contract to protect exchange relationships. This contract is more resilient than TCE incomplete contract. That is, companies safeguard exchange relationships through the TCE incomplete contract which specifies duties and obligations, agency theory monitoring and incentives mechanism, relational theory norms and commitments as well as the efficacy of the legal system. Thus, because of the added safeguards provided by other frameworks, companies can effectively control exchange partner(s)' opportunistic behaviour through contracts. Vertical control is used when companies believe that potential contractors cannot meet the required product quality standards, in this case good quality grapes. That is, they integrate when they believe that they are better off exploiting their existing capacities rather than use the market (Diez - Vial, 2009). They do not necessarily integrate to control opportunism; they integrate to ensure certain standards are achieved and also exploit their superior internal capacities. Thus, vertical integration is more of a response to concerns about contractors' capabilities rather than controlling for trading partner(s)' deliberate intentions to mislead or take advantage of the contracting partner(s).

While the generalisation of the results of the current study may be questionable due to the study's narrow focus on the wine industry, it is believed that the above multi-paradigmatic framework is applicable to many industries such as information technology and automotive industry. A review of the literature (Harmancioglu, 2009; Kingsley & Fethullah, 2010) suggests that the findings of the exchange protection studies from these industries could be improved by evaluating their phenomena of interest through the theoretical lens of the multi-paradigm framework.

For example, Harmancioglu (2009) examined control mechanisms used to manage the risks associated with outsourcing within the information technology sector. The premise of Harmancioglu's (2009) study was that buyers within the technology industry face market uncertainties associated with rapidly changing technological environment and hence environmental hostility (TCE environmental uncertainty) and lack of technological experience on the part of the buyers relative to suppliers (agency theory information asymmetry). The study concluded that buying firms could reduce market uncertainties within the information technology industry by putting in place coordination and monitoring measures to prevent

supplier opportunistic behaviour (such as the expropriation of buyer's technological and commercial secrets). However, this study neglected the role of relational norms and the legal system in protecting information technology relationships, and thus failed to benefit from the exchange protection qualities of these two exchange protection mechanisms. Thus, if it were to be applied to Harmancioglu's (2009) study, the multi-paradigm framework developed for the current research would not only protect information technology relationships through appropriate TCE and agency control mechanisms but also through building socio-economic relationships between technology buyers and suppliers as well as relying on the threat of court enforcement in case of transactional opportunism. This suggests that the new framework can also be applied to the information technology industry.

Another study by Kingsley and Fethullah (2010) used TCE and resource view of the firm theories to investigate how suppliers within the automotive industry determine which distribution and logistics services to provide internally and which to outsource. The results lent support to the applicability of the resource-based and TCE constructs to the distribution and logistics services within the automotive industry. A better understanding of the distribution and logistics outsourcing decisions within automotive industry would be achieved by extending the theoretical lens of the study to include the role of relational norms and the enforceability of the outsourcing agreements by the courts. This would be achieved by investigating the decisions through the multi-paradigm exchange protection framework developed for the current research.

The current research has therefore not only made a theoretical contribution through the development of a multi-paradigm exchange protection framework that is believed to offer better exchange protection than any theory in isolation. It has also developed a framework that may be applied to different industries. As shown in the above discussion, the use of the theoretical lens of the multi-paradigm framework may have improved the understanding of their phenomena of interest of various studies focusing on different industries.

6.4.1.2 Explanation of the Continued Use of Incomplete Contracts Despite their Vulnerability to Hold Up

To the best of the researcher's knowledge, no study has attempted to offer a theoretical explanation of why contracts are still widely used despite their vulnerability to opportunism. This research has attempted to fill this gap. The research proposed that contracts are used because they are not as vulnerable as TCE envisages. The argument is that exchange

vulnerabilities associated with incomplete contracts are reduced by the transaction safeguards offered by agency theory monitoring and incentives mechanism, relational exchange norms (trust) and the contract enforcement mechanism of the legal system. That is, contracts are not just a series of duties and obligations, but also include exchange protective qualities of the other exchange mechanisms. Thus, the added exchange protection qualities of other mechanisms help companies to substantially reduce exchange hazards associated with incomplete contracts. This then allows companies to use the exchange incomplete contracts with substantially reduced fear of opportunism. Hence, the real contract that companies use take the following form: *Specified duties and obligations complemented by incentives and monitoring, norms such as trust (norms are relied upon more heavily when the legal system is weak) and the contract enforcement mechanism of the legal system.*

6.4.1.3 Size - Vertical Control Relationship and TCE

TCE envisages that large firms are more likely to do everything themselves as a way of reducing per unit cost of production (Williamson, 1975). Thus, diseconomies of scale limit integration (Williamson, 1974). However, the current research's findings show that, on the contrary small wineries are more integrated than large firms (H7). For example, 76.5 percent and 55.4 percent of all New Zealand and South African small wineries were found to be strongly vertically integrated respectively. Hence the current research's results on the effect of size on vertical integration have implications for TCE. The current research has identified quality control as one of the main reasons for vertical control in the two countries. It has also been shown that the literature identifies circumstances under which small firms may become more integrated than large firms. These include, when vertical control offers the advantages of better exploitation of existing capabilities (Diez - Vial, 2009) and when, due to resource constraints, small firms may not be as effective in controlling exchange partner opportunism as large firms (Nooteboom, 1993). TCE should therefore reconcile the size determinants of vertical integration of small and large firms.

6.4.1.4 Incorporating the Legal System into the Mainstream Organisational Economics and Exchange Theoretical Framework

The legal system has been recognised as important for protecting exchange relationships (Arrighetti *et al.*, 1997; Woldie, 2009). However, studies investigating the role of the legal system can be divided into two main streams. Those concerned with alternative protection mechanisms of companies operating within a weak legal framework (Reuer & Arino, 2007; Vinogradova, 2006) and those concerned with how strong legal frameworks encourage investments in specific assets relative to weaker legal systems (Nunn, 2007). These studies motivated the inclusion of the legal system in this research. However, these studies did not

attempt to provide a theoretical basis to the exchange protection qualities of the legal system, and the researcher is not aware of any study that has attempted to integrate the legal system into a theoretical exchange framework. It is against this background that this research incorporated the legal system into its multi-theoretical framework. Within this framework, the legal system is not treated as a stand-alone exchange protection mechanism but rather as part of a broad theoretical structure. In other words, the removal of the legal framework from the multi-theoretical framework would weaken its ability to protect exchange relationship, and the legal framework would not be as effective in protecting exchange when isolated as it does when part of the multi-theoretical exchange protection framework. This was confirmed through *post hoc* analysis where hypothesis one was re-run without the legal system variable. The results showed that the model explanatory power fell from 36.1 to 34.1 percent and 34.3 to 30.8 percent for New Zealand and South African respectively, which suggested that in both countries, the removal of the legal system affected the ability of the model to explain contracting. The reduction is however small in both countries, suggesting that the legal system is a part of a range of exchange protection mechanisms that companies use to protect their exchange relationships.

6.4.2 Managerial Implications

This research has made three main managerial contributions to the exchange literature. These are: (a) the importance of a balanced multi-faceted governance strategy, (b) the importance of a multi-theoretical approach to contracting and (c) The importance of considering the effectiveness of contract enforcement mechanisms in the partner(s) country if trading partners are based in different countries.

6.4.2.1 The Importance of a Balanced Multi-faceted Strategy

One of the key findings of this research is that each of the three governance strategies of spot market, vertical control and contracting has a unique role to play in the coordination of transactions. Each may be used under different situations, either to mitigate some risk or enhance balanced exchange management. That is, managing a portfolio of relationships.

For example, vertical control was found to mainly help wineries mitigate the risk of low grape quality and grape availability, all of which may negatively affect the wineries' marketing strategies. Sourcing grapes through contracts helped wineries minimise capital costs and mitigate climatic risk by transferring the risk to the growers. It also ensured supply of grapes from different climatic and soil types and this helped them produce different varieties. The spot market played an important part of meeting unforeseen grape shortages as well as wine

blending. This combination of governance strategies has implication for managers. It highlights the importance of being open to implementing all the three governance strategies as a deliberate management practice that leverages on the benefits associated with all the three governance strategies and knowing when to implement them and for what purpose.

6.4.2.2 *The Importance of a Multi-Theoretical Approach to Contracting*

Of the three main governance strategies, this research has mainly focused on contracting. A multi-theoretical framework that, this research argues provides better exchange protection than any theory in isolation was developed. The framework highlights the importance of having an all encompassing theoretical approach to protecting exchange contractual relationships from opportunism. That is, managers should complete their contractual relationships with their agents by building socio-economic based relationships with their trading partners and clients, especially in countries with poor legal systems. This may help because contractual relationships that used to require continuous monitoring may not need the same level of intensive, costly effort and incentives if more reliance is placed on the efficacy of the legal system and trust to enforce. This means that managers can rely on a form of mutual obligation monitoring to ensure performance. There may also be a need to provide incentives to trading partners to ensure they act in the best interest to the contractors. However, managers need to be conscious of the cost implications of all these strategies. They should also be conscious of the fact that these control mechanisms may not be applied uniformly across different business case scenarios. Managers should therefore employ combinations of mechanisms that are appropriate to each unique situation. Thus, due to environmental uncertainty, each governance situation is distinctive, and this perhaps has lead to more confusion in the area of exchange governance research and practice than any other single factor.

6.4.2.3 *Consideration of the Effectiveness of the Contract Enforcement Mechanism in the Partner(s)' Domicile Country*

The South African (SAWIS, 2009) and New Zealand (NZWINE, 2009) data does not show grape imports. This suggests that grape demands in the two countries are satisfied by domestic grape supply. However, as circumstances change, there may be a need to import grapes, although this seems unlikely in New Zealand in the short and medium term due to concerns about possible over supply within the wine industry (Deloitte & NZWINE, 2010). But should the need for importing grapes arise, managers should consider importing from countries with strong contract enforcement mechanisms. This will help them ensure improved cross border exchange protection because strong legal systems provide better exchange protection than weak legal systems (H_{2b}). Following Webster's (1992) governance continuum,

stronger legal systems will result in speedy development of mutual dependence and even strategic relationships between inter-country partners, and hence improve the security of cross border transactions. Strong legal systems will speed up the benefits of a multi-paradigm contract because it would substantially increase the trust and confidence of both parties with regard to the continuity of the relationship, increase the long term orientation of the relationship and hence safeguard transactions against opportunistic behaviour (Yang *et al.*, 2010).

6.4.3 Governmental Policy

In addition to the managerial implications, results of this research have implications for government policy. Governments should be encouraged to establish credible legal systems that provide effective exchange protection. This would improve the efficiency of domestic trade because companies would confidently trade amongst themselves without the fear of opportunism. Developed legal systems would also offer countries competitive edge over their competitors because, knowing that strong legal systems offer better exchange protection, foreign investors would more keen to invest in countries with strong legal systems than countries with weak legal systems (Lerner & Schoar, 2005).

6.5 Limitations

Like all research projects, this thesis has some limitations that future research should concentrate on. Three main limitations have been identified. These are: (a) issues related to methods, (b) limited focus on the winery-grower dyad and (c) limited generalisation of the results.

6.5.1 Issues related to construct Measurements

This research adopted constructs from earlier studies and adopted or modified them for the current research where possible. The rationale for adopting previously used measures or constructs was that they have been successfully used before, indicated to this research that they may be suitable for use. As expected, the scales performed well in terms of their reliability and validity tests, with the lowest, which was also the only one below 0.8 recording 0.754 and many in the upper 0.8 and 0.9 categories. This however did not imply a flawless instrument validity testing process.

The validity tests resulted in the monitoring variable loading on one factor for both South Africa and New Zealand and went on to perform better than other constructs on the reliability test. The fact that this variable performed well in both countries suggests that items making it

did not create major ambiguities within the two countries' wine industry. The Incentives construct also loaded on one factor for South Africa. However, this was not the case with other constructs. While items that were intended to measure a given construct loaded on one factor and thus satisfy the research that the construct has been adequately captured, at most two items from each of these constructs loaded on other factors, and were subsequently dropped from further analysis.

This represented a limitation in the measurement of constructs because it indicated that the original set of items that was meant to measure a specific construct may have actually represented more than one dimension of that construct. For example, the original item criticality construct was captured through eight items. Exploratory factor analysis resulted in the first six items loading on one factor and items seven and eight loading on a separate factor. The first six items were mainly related to chemical and flavour/taste qualities such as acidity and sugar content. Items seven and eight mainly captured the physical quality of grapes such as physical damage and disease damage. While this research dropped the physical quality measure from further analysis, it does not mean that this attribute is not important for the analysis. Dropping the physical quality measure was therefore a limitation in that it denied the research the ability to assess the role of different aspects of grape quality on governance decisions. This calls for further refinement with a view of breaking them down into more specific sub constructs.

6.5.2 Limited Focus on the Winery – Grower dyad

This research confined itself to understanding the exchange relationships between grape growers (input suppliers) and wineries (input users) and did not incorporate other role players within the wine value chain such as distributors and final consumers. The literature (Dyer & Singh, 1998; Ritter, Wilkinson, & Johnston, 2004) suggests that while relationships with suppliers of strategic inputs can be an important and durable source of competitive advantage, other relationships within the value chain such as with distributors are equally important.

This research has mainly focused on the relationship between input suppliers and input users. It did not explore the dynamics of exchange protection along the entire value chain such as between manufacturers and distributors. This is particularly important in that this research found that wineries in South Africa and New Zealand belong to national bodies, which suggests possibilities for other inter-firm dynamics that this research did not capture. Further, growers are generally locked in their relationships with wineries due to lack of alternative buyers, which further reduces the dynamics that may be observed in other industries.

Another limitation related to the focus on the grower-winery is that information was sourced from wineries only without growers' input. The analysis may have therefore been biased towards the wineries and the incorporation of growers' views could possibly alter the findings of the current research.

6.5.3 Lack of detailed Triangulation

This research relied primarily on the responses to a survey data derived from key informants, as is typical for a quantitative study of this type. The data were further triangulated through deriving constructs and comparing results with the literature and also industry association reports and media. Hence, triangulation was constrained to a degree as there were no secondary interviews, a fact that may lead to key informant bias. Key informants should be selected on two main criteria; first, they must occupy roles that make them knowledgeable about the phenomenon under study, and secondly, be willing to communicate with the researcher. Key informants are considered most reliable when dealing with smaller organisations as it is expected that senior managers in small organisations/firms tend to make most of the important decisions and be familiar with all the major aspects of the business. We note that in the two samples, the smaller wineries dominate, and hence we expect to receive reasonably reliable data even though a single key informant was used. Yet, further research may have to undertake secondary interviews in addition to the key informant and also consult individual company documents to gain a richer picture.

6.5.4 Limited Generalisation of the Results

Generalisation of the findings is a desirable quality for any research. Hence it is almost a given inevitability that all research findings will raise questions concerning the degree to which such findings could be generalised. This research has developed multi-theoretical exchange protection framework that is believed to be generalisable to all industries. It went on to develop instruments and used them to empirically test the framework on the South African and New Zealand wine industries. However, the results of the current study cannot be generalised because the study focused on only one sector within only one industry.

6.6 Directions for Further Research

This research provides useful avenues for further research. These avenues arise from the findings of the research as well as its limitations. These can be grouped into two main categories of (a) methodological issues (b) replication of multi-theoretical framework in different countries and industries.

6.6.1 Methodological Issues

Further methodological research opportunities may be divided into instrument refinement and the adoption of a case study approach.

6.6.1.1 Instrument Refinement

As observed in Chapter five and in the limitations section above, apart from the monitoring constructs that loaded on one factor for both countries, and the incentive construct for South Africa, other constructs loaded on two or three factors. Loadings on more than one factor meant that the items making the constructs could potentially be broken into two sub constructs. The factors loaded with less than three items were subsequently dropped from the research because they did not meet the minimum required number of items.

This did not mean that the underlying construct making these factors did not have relevance to this research. It simply meant that the study had to settle for the construct with more correlated items. Further research may therefore make a contribution to the exchange literature in general and to the wine industry in particular by identifying items related to those within the dropped factors and improve and extend this research. One example from this research may help clarify the research opportunity provided by instrument refinement. A total of four out of six items that constituted the legal system loaded on one factor for New Zealand. Items one and two that loaded on another factor seemed more aligned to the judicial systems' moral standing such as fairness and impartiality, whereas and the other items seem to be aligned towards judicial systems' effectiveness such as speed of resolving disputes, cost effectiveness and ability to enforce decisions. Further research may therefore benefit from identifying more items that are related to the moral standing of the judicial system, develop a separate construct using these items and then incorporate it into the analysis of governance structures alongside the judicial systems' effectiveness construct that used for this research.

6.6.1.2 Application of the Case Study Approach

This research used a mail survey (cross-section approach) to collect data and econometric analysis to arrive at the results. Wislon (1995) argues that cross section studies do not provide insights that emerge from looking at the process relationship development. The mail survey has therefore not afforded this research the opportunity to study and observe the dynamics of firm relationships. As such, other important insights into how firms use the different governance forms studied in this research may have been overlooked. Further research may benefit from complementing econometric analysis with case studies as this may provide a richer perspective of the firms' governance strategies (Ruester, 2010).

6.6.2 Replication of the Multi-Theoretical Framework in Different Situations

This research developed and tested the multi-theoretical exchange framework on the wine industry in South Africa and New Zealand. There were two main reasons why the two countries were chosen. Firstly, they are both producers of wine which allowed for a direct comparative study. Secondly, South Africa had a weaker legal environment than New Zealand and this allowed testing for the implications of a weaker and stronger legal environment on exchange performance. However, there is room for applying the theoretical framework to different situations. For example, research may include both the input suppliers (e.g. growers) and input users (e.g. wineries) instead of focusing on the wineries only as this research has done. Research may also study the whole value chain from growers to customers and address questions such as within which part of the chain does the multi-theoretical framework better protect exchange relationships? Is it between input suppliers and input users as tested for this study, or between suppliers and distributors, or between distributors and retailers? There is also an opportunity to test the multi-theoretical framework on different sectors with a view to assess its applicability to different industries and between industries. Further, the two countries studied for this research have many winery regions. This presents an opportunity to apply the multi-theoretical framework at each country's regional level with the key objective of understanding the regional differences in governance choices and their respective determinants between regions.

6.7 Summary and Conclusions

The exchange literature is rich with theories that have been used to guide the governance of transactions. These include TCE (Williamson, 1985), agency theory (Bergen *et al.*, 1992; Eisenhardt, 1989) and relational exchange theory (Macaulay, 1963). This research is therefore just a small contribution to a large and well developed field. However, it is hoped that the realisation that these theories complement each other in protecting exchange relationships and the addition of the legal system to exchange protection theorising will add further value to this body of literature.

This research started with a review of literature that revealed that TCE contracting framework exposes transactions to opportunism (Williamson, 1985). Despite this, incomplete contracts were found to be still widely used (Dawes *et al.*, 2009; Fraser, 2005). This research therefore set off with key objective of developing an improved exchange framework that protects exchange relationships better than TCE incomplete contracts. The framework was to be used to explain the use of incomplete contracts despite the limitations. However, before that, the

research had to first establish whether or not contracts are used within the South African and New Zealand wine industries. The findings showed that wineries employed the three coordination measures of the spot market/arms-length, contracts and vertical control to source their grapes. Such an integrated strategic focus allowed the wineries to exploit advantages of sourcing grapes from the spot market such as meeting the unexpected shortages and also allowed them to benefit from, among others risk mitigation through contracting and ensured access to quality grapes through vertical control. This helped achieve the third objective of this research, which was to investigate and explain the grape coordination measures in the two countries.

The research also made some theoretical contributions by developing a multi-paradigm exchange protection framework that integrates the exchange protection qualities of incomplete contracting (TCE), monitoring and incentives (agency theory), relational norms (relational exchange theory) as well as the legal system. The new framework is believed to offer better exchange protection than any exchange protection mechanism does in isolation. The development of the multi-paradigm framework was on its own an achievement of the first objective of this research, which was to develop a multi-paradigm governance framework through the integration of TCE, agency theory, relational exchange theory and the contract enforcement mechanism of the legal system. The framework was used to offer an explanation for the continued use of incomplete contracts despite their vulnerability to *ex post* opportunism, hence addressing the second objective of this research. The explanation given is that companies complement incomplete contracts with exchange protection qualities of other mechanisms such as monitoring, incentives, norms and through the legal system. Thus, other exchange mechanisms provide added safeguards to incomplete contracting and hence explain the use of incomplete contracts despite their limitations. The new framework is also believed to be generalisable to other industries such as information technology and the automotive industry. To demonstrate the applicability of the new framework on other industries, previous exchange protection studies were reviewed and opportunities for improving the understanding of the target studies' phenomenon of interest were identified.

Further theoretical contribution was made to the TCE view on the size determinants of vertical control. Whereas TCE envisages that large firms are more likely integrate as a means of exploiting scale economies (Williamson, 1975), the current research results suggest that small firms are more integrated than large firms (H7), and the major reason for such integration is probably to ensure better exploitation of existing capabilities (Diez - Vial, 2009) and save on transaction costs that may be better absorbed by large firms than small firms.

TCE should therefore reconcile the size determinants of vertical integration of small and large firms.

Another important theoretical contribution was achieved by incorporating the legal system into mainstream exchange theorising. Not only has the current research shown that the legal system protects exchange relationships (H₁ and H_{2a}), it has also shown that a more credible legal system better protects exchange relationships than a less credible legal system (H_{2b}). On these bases, the current research incorporated the legal system into the multi-paradigm exchange protection framework.

Further, the research has made important managerial contributions. Managers have been advised to be open to using the three governance strategies of spot market, vertical control and contracting as each of these strategies has a unique role to play in the coordination of transactions. A related managerial contribution that the current research made is specific to contracting. Managers have been advised to complete their contractual relationships by building socio-economic based relationships with their trading partners and clients, especially in countries with poor legal systems. This approach is believed to reduce the need for intensive and costly monitoring effort and incentives because more reliance would also be placed on the efficacy of the legal system and trust to enforce contracts.

Appendices:

Appendix A

Study Questionnaire

This questionnaire consists of is composed of 7 short sections. The sections address different aspects of the key parameters that are considered important in the grape coordination process. It will take **AT MOST 15 MINUTES** to complete the questionnaire.

RESPONDENT ANONYMITY

All questionnaire responses will be treated anonymously and no reference will be made to specific information provided by individual respondents.

RESEARCH FEED BACK

Summary results will be sent to interested respondents. If interested, please indicate by ticking (✓) yes in the statement below.

I would like to be sent summary results of the study	Yes	No
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Section 1: Grapes Supply Chain

The purpose of this section is to gather information about the winery's ways of making grapes available.

- Given the grape sourcing strategies through the spot market, contract, and growing of own grapes or a combination of the three in different proportions; which strategy or combination of strategies best describes how you source grapes for your winery and in what proportions? Please tick (✓) the appropriate proportions/ percentages accounted for by the respective sourcing methods for the last immediate season;

Sourcing Strategy	Percentage of grapes sourced through different methods					Should add up to 100%
	0 - 19	20 - 39	40 - 59	60 - 79	80 - 100	
Spot market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Grow own grapes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

- Please provide main reasons for the dominant strategy above.
 - _____
 - _____
 - _____
- Please tick (✓) what you consider to be the approximate distance of your main sources of grapes from the winery. This applies to even when grapes are sourced internally.

Source	Distance (Km)				
	0 - 4	5 - 10	11 - 50	51 - 100	> 100
Spot market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grow own grapes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 2: Contract Information (applicable to contract growers only).

This section seeks to gather information on the nature of the contract(s) between the winery and grape grower(s).

- How many contract growers do you have? _____
- Please tick (✓) what you consider to be the best description of the type(s) of contract(s) with your grower(s);

Formal detailed Contract	Less detailed memorandum of understanding	Unwritten mutual understanding
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Please tick (✓) the best description of the average duration of all your contracts;

Less than 1 year	1-2 years	2- 3 years	More than 3 years (Please specify)	n/a
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _____	<input type="checkbox"/>

Section 3: Quality Issues

This section seeks your opinion on grape quality related issues.

7. Please tick (✓) the column that best expresses the importance of the following grape quality variables to the quality of your wine;

Item Code	Grape Quality Measure	Not important at all	Not so important	Neutral	Fairly Important	Very Important
IC1	Baume/Brix (Sugar content)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC2	<i>Titrateable Acidity or Total Acidity (TA) as % of volume.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC3	Colour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC4	Flavour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC5	Tannins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC6	MOG (Material other than grapes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC7	Physical Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC8	Disease Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IC9	Other (Please specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Tick (✓) the column that best describes the extent to which your contract(s) with grower(s) specify the penalties/bonuses for the achievement of the following grape quality variables;

Item Code	Grape Quality Variable	Never	Rarely	Sometimes	Often	Always
Inc1	Baume/Brix (Sugar content)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc2	<i>Titrateable Acidity or Total Acidity (TA) as % of volume.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc3	Colour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc4	Flavour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc5	Tannins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc6	MOG (Material other than grapes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc7	Physical Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc8	Disease Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inc9	Other (Please specify) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 4: Winery's relationship with Grower(s) or Own vineyard.

The following statements have been designed to obtain information about your relationship(s) with your grape grower (s) or with own vineyard.

9. Please tick (✓) the column that best expresses your opinion about the extent to which representatives of your winery are involved in each of the following activities in the contracted grower or your own vineyard(s) or both;

Item Code	Activity (Items)	Never	Rarely	Sometimes	Often	Always
Mon1	Pruning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon2	Canopy Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon3	Trellis System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon4	Vine Density	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon5	Water and Irrigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon6	Fertiliser Programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon7	Ground Cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon8	Weed Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mon9	Pest/Disease Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. For each statement please indicate the extent to which you agree or disagree by ticking (✓) the appropriate column.

Items	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
T1	Even when the grower/vineyard gives us an unlikely explanation, we are confident that they are telling the truth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T2	The grower/vineyard has often provided us information that has later proven to be inaccurate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T3	The grower/vineyard usually keeps the promises that they make to our firm.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T4	Whenever the grower/vineyard gives us advice on our business operations, we know that they are sharing their best judgment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T5	Our organization can count on the grower/vineyard to be sincere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T6	Though the circumstances change, we believe that the grower/vineyard will be ready and willing to offer us assistance and support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T7	When making important decisions, the grower/vineyard is concerned about our welfare.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T8	When we share our concerns with the grower, we know that the grower/vineyard will respond with understanding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T9	In the future, we can count on the grower/vineyard to consider how their decisions and actions will affect us.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T10	When it comes to things that are important to us, we can depend on the grower's/vineyard's support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5 - Legal System

This section seeks your opinion about the performance of the New Zealand court system in resolving business disputes. Your opinion is sought even if you have never had a business dispute.

11. For each statement about the court system in New Zealand, please indicate the extent to which you agree or disagree;

Item Code	Statements (Items)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
L1	The courts are fair and impartial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L2	The courts are honest/uncorrupt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L3	The courts are quick at resolving business disputes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L4	The courts are affordable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L5	The courts are consistent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L6	The courts enforce their decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 6: You and the Winery

This section seeks to gather information on the respondent and the winery.

12. Please tick (✓) the boxes applicable to you;

Your gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female			
Your age group	<input type="checkbox"/> Under 25	<input type="checkbox"/> 25 - 35	<input type="checkbox"/> 36 - 45	<input type="checkbox"/> 46 - 55	<input type="checkbox"/> Over 55
Your highest Viticulture qualification	<input type="checkbox"/> None	<input type="checkbox"/> Diploma	<input type="checkbox"/> Bachelors Degree	<input type="checkbox"/> Masters Degree	Other (specify) _____
Number of years with the Industry	<input type="checkbox"/> < 1 yr	<input type="checkbox"/> 1 to 5 yrs	<input type="checkbox"/> 5 yrs < to 10 yrs		<input type="checkbox"/> > 10 yrs
Your Job Title	_____				

13. Please tick (✓) the boxes applicable to this winery and fill the blank spaces appropriately;

No of years in operation	< 1 yr <input type="checkbox"/>	1 to 5 yrs <input type="checkbox"/>	5 yrs < to 10 yrs <input type="checkbox"/>	> 10 yrs <input type="checkbox"/>	
Main wine Varietals	Sauvignon Blanc <input type="checkbox"/>	Chardonnay <input type="checkbox"/>	Pinot Noir <input type="checkbox"/>	Merlot <input type="checkbox"/>	Other (please specify) _____
Geographical Region	<input type="checkbox"/> Northland <input type="checkbox"/> Auckland <input type="checkbox"/> Waikato/Bay of Plenty <input type="checkbox"/> Gisborne <input type="checkbox"/> Hawkes Bay <input type="checkbox"/> Wellington <input type="checkbox"/> Nelson <input type="checkbox"/> Marlborough <input type="checkbox"/> Canterbury <input type="checkbox"/> Central Otago				
Ownership structure	Sole ownership <input type="checkbox"/>	Partnership <input type="checkbox"/>	Family owned <input type="checkbox"/>	Controlling interest <input type="checkbox"/>	Non controlling interest <input type="checkbox"/>
Turnover of last full year; _____ (NZ \$M) Please specify year _____			Volume of wine produced in the last full year; _____ (million Litres). Please specify year _____		
Source of Grapes (% of total grape requirement)	Spot market. (%) _____	Contract. (%) _____	Grapes produced by winery for own use. % _____	Should add up to 100%	

Section 7: Any Additional Comments

If you have any comments or would like to share information not addressed in the questionnaire, please feel free to provide written details below or contact Mokaedi M. Monnane on: **0212069506; or monnane.monnane@lincolnuni.ac.nz**

Thank you for taking the time to complete this questionnaire

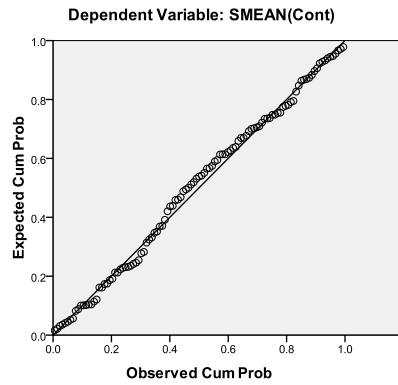
Appendix B

Linearity Tests

B.1 Linearity Tests (South Africa)

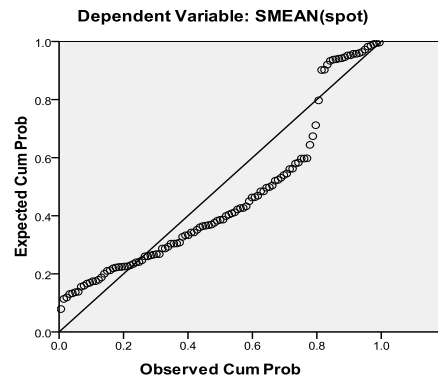
Model 1

Normal P-P Plot of Regression Standardized Residual



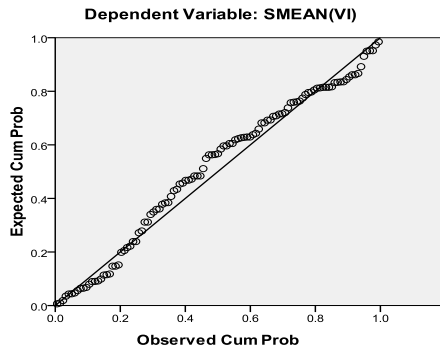
Model 2

Normal P-P Plot of Regression Standardized Residual



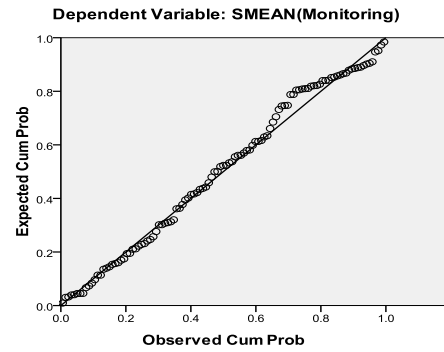
Model 3

Normal P-P Plot of Regression Standardized Residual



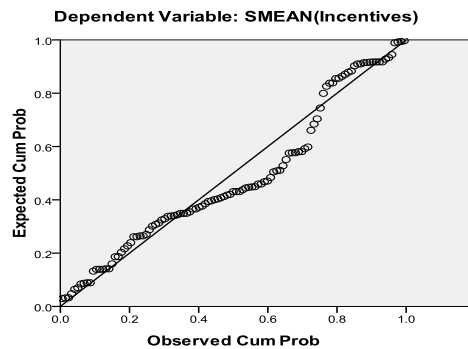
Model 4

Normal P-P Plot of Regression Standardized Residual



Model 5

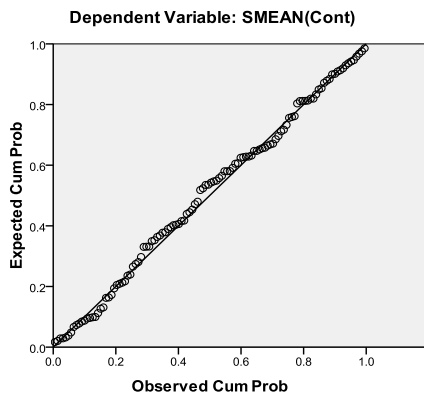
Normal P-P Plot of Regression Standardized Residual



B.2 Linearity Tests (New Zealand)

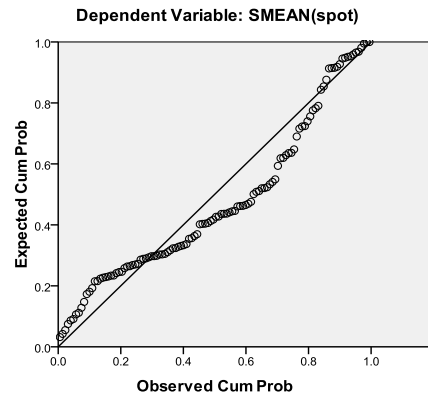
Model 1

Normal P-P Plot of Regression Standardized Residual



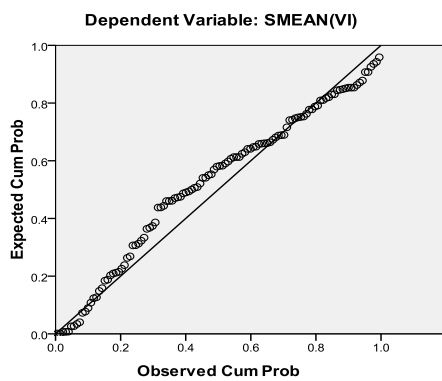
Model 2

Normal P-P Plot of Regression Standardized Residual



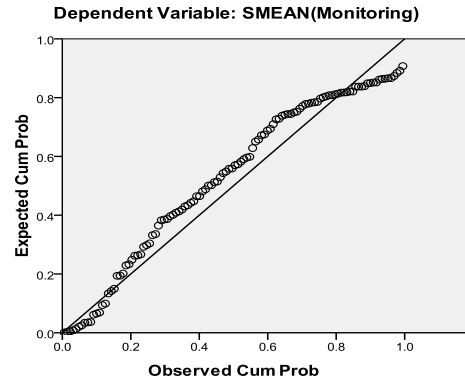
Model 3

Normal P-P Plot of Regression Standardized Residual



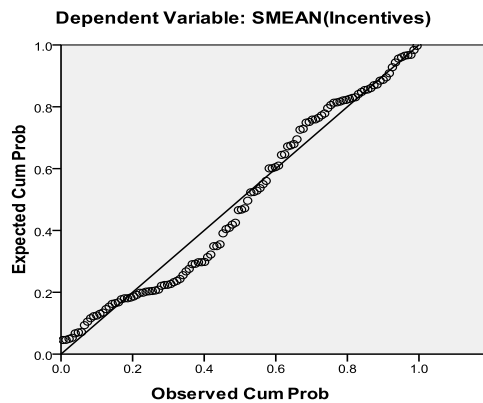
Model 4

Normal P-P Plot of Regression Standardized Residual



Model 5

Normal P-P Plot of Regression Standardized Residual



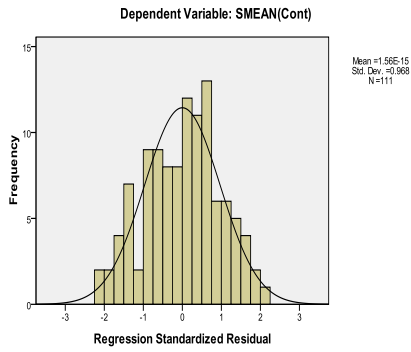
Appendix C

Normality Tests

C.1 South Africa

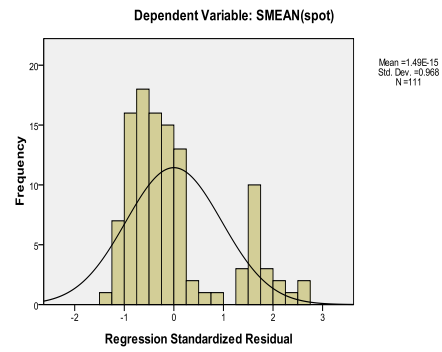
Model 1

Histogram



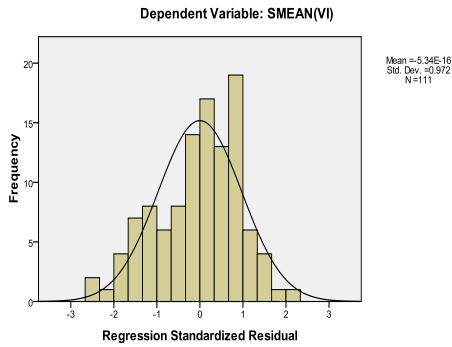
Model 2

Histogram



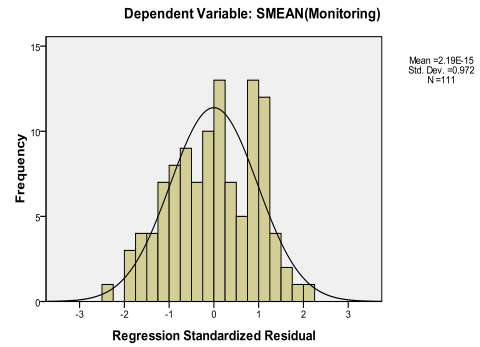
Model 3

Histogram



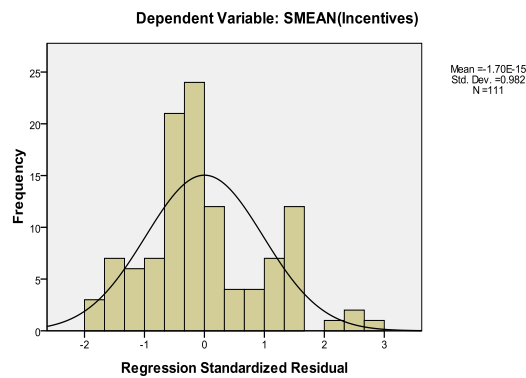
Model 4

Histogram



Model 5

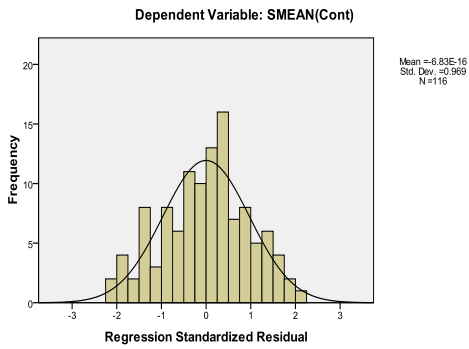
Histogram



C.2 New Zealand

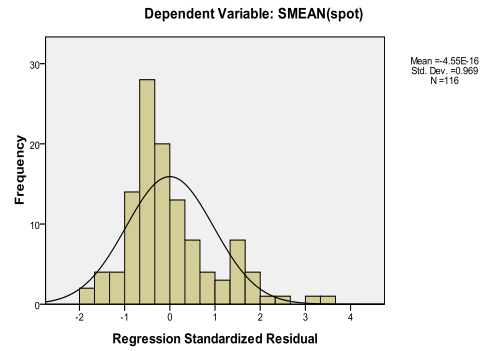
Model 1

Histogram



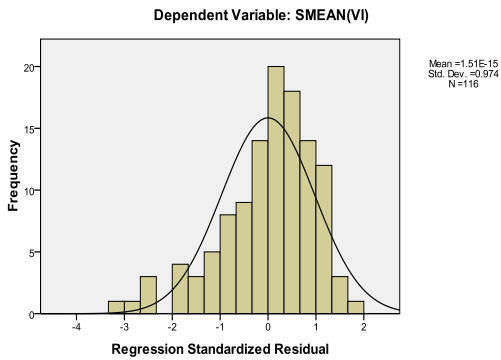
Model 2

Histogram



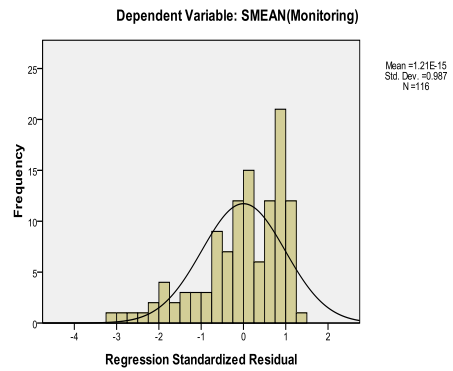
Model 3

Histogram



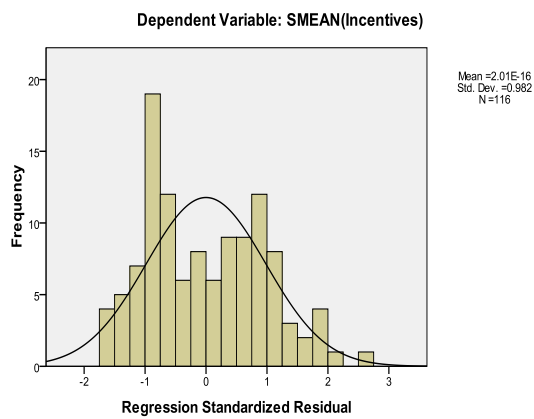
Model 4

Histogram



Model 5

Histogram



Appendix D

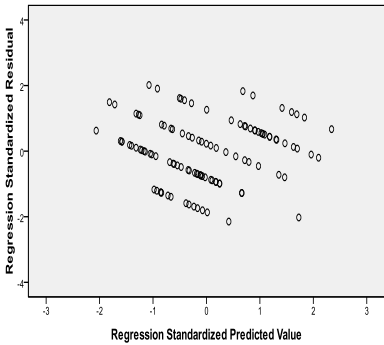
Error Term Homoscedasticity Tests

D.1 South Africa

Model 1

Scatterplot

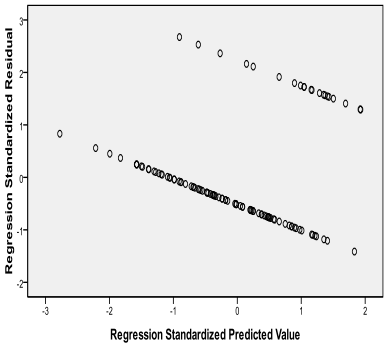
Dependent Variable: SMEAN(Cont)



Model 2

Scatterplot

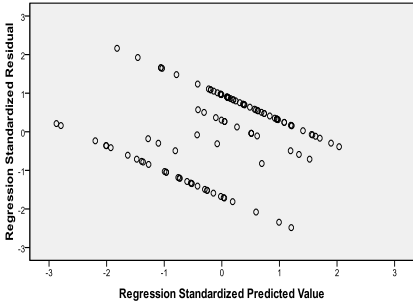
Dependent Variable: SMEAN(spot)



Model 3

Scatterplot

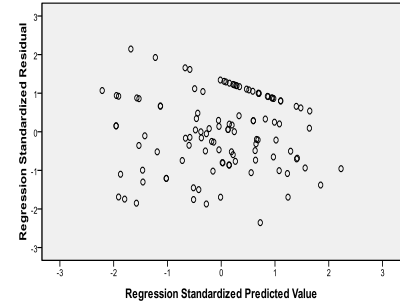
Dependent Variable: SMEAN(VI)



Model 4

Scatterplot

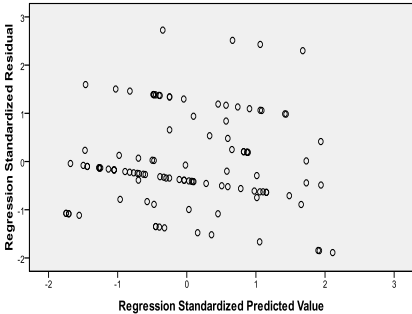
Dependent Variable: SMEAN(Monitoring)



Model 5

Scatterplot

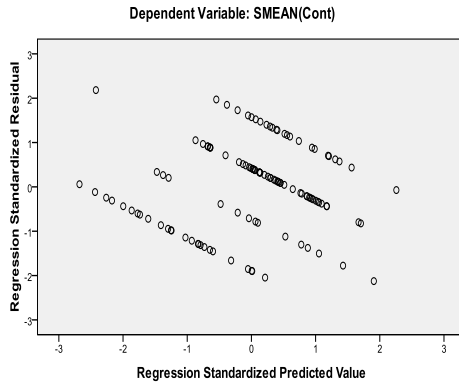
Dependent Variable: SMEAN(Incentives)



D.2 New Zealand

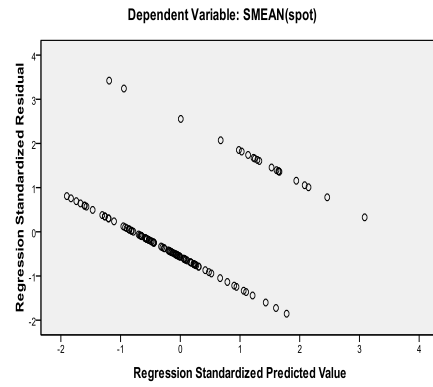
Model 1

Scatterplot



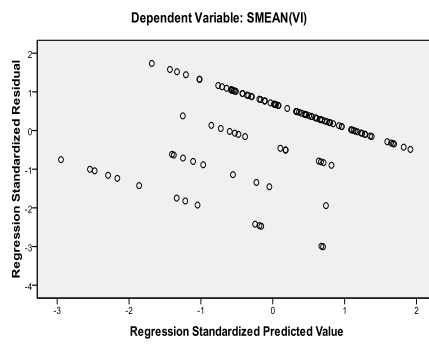
Model 2

Scatterplot



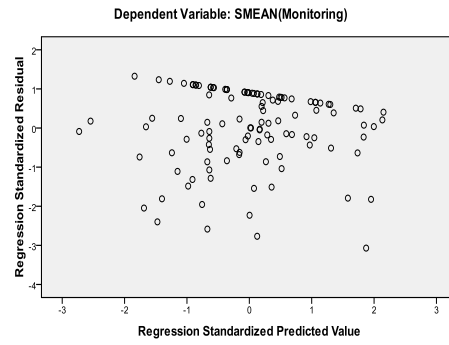
Model 3

Scatterplot



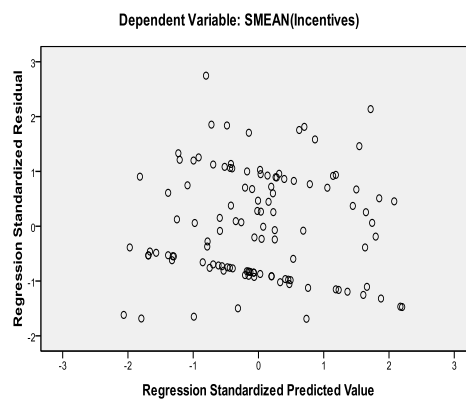
Model 4

Scatterplot



Model 5

Scatterplot



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