Relational Norms and Relationship Classes: From Independent Actors to Dyadic Interdependence

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Abstract

This thesis pursues an understanding of relational coordination in business markets by contrasting firm and dyadic levels of analysis. This is achieved by comparing the roles of self and collective interest as interaction builds to high levels of interdependence in business relationships.

The Industrial Marketing and Purchasing Group has advanced relationship and network theories using the concept of actor bonds, defined as a structural element of business relationships, to partially explain interaction between firms. In this thesis, the concept of actor bonds is extended beyond trust and commitment, by introducing Macneil's (1980) Theory of Relational Norms. Thus, a model of relational coordination based on collaborative interest is introduced to explain relationship performance. This model was tested on firms in the business software industry.

Next, a model of an interaction possibility space is presented. This model elaborates the nature of interaction between dyad parties according to their preferred coordination modes (ie market, hierarchy, relational). This account of interaction relies on the inherent similarities and differences that exist between firms where two networks link. For situations of relational coordination, this model suggests actor bond structure may be represented as the combination of two firms' individual collaborative interest models.

Consequently, a model of actor bond structures, conceptualised as the combined magnitude and asymmetry of relational norms and motivational constructs in the dyad, is developed. This dyadic model of actor bonds was tested using paired firms of principals and distributors in the computer software industry. Results indicate that interaction effects as well as magnitude and asymmetry of structure play a part in explaining relationship performance, dissonance and relationship classes.

These are important results: they indicate that differences between the parties should be considered in dyadic studies. There are two important research implications to these findings. First, dyadic theory that accounts for differences between the parties must be extended beyond the beginning made in this thesis. Second, quantitative methods of analysis that allow for the identification and measurement of similarity and differences in a dyad must be developed.

The thesis concludes by suggesting future research directions.

Declaration

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University library, being available for loan and photocopying.

Chris Medlin

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Chapter One - Introduction

1. Research Field

Business markets are often acknowledged as considerably more complex than consumer ones. This complexity arises from the need to continually coordinate the outputs of many firms in value chains formed, or planned, to provide final consumers with required products.

Coordination is achieved in many ways, however conceptually, all methods are a combination of three high order mechanisms: market forces, hierarchical control and relational coordination (Bonoma 1976; Perrow 1981; Powell 1987; Bradach and Eccles 1989; Powell 1990; Weitz and Jap 1995). The last mechanism of relational coordination remains poorly understood and is the focus of this thesis. Bradach (1989) suggests that trust, based on the social norms of obligation and cooperation, in conjunction with personal relationships, forms the basis for relational coordination.

The search for a theory of cooperation has been underway for some time (cf Kropotkin 1915; Axelrod 1984; Argyle 1991). Within Marketing the search for a theory of relational coordination is underway within the Relationship Marketing paradigm (cf Gummesson 1987; Grönroos 1994; Achrol 1997; Brodie, Coviello et al. 1997) and the work of the Industrial Marketing and Purchasing Group (IMP) in Europe (cf Håkansson 1982; Ford 1990; Håkansson and Snehota 1995) and in Australia (Young and Wilkinson 1997). However, research in these areas remains an amorphous combination of theories with constructs drawn from economics, social psychology and sociology. (See Wilson's (1995) comments on this problem). This research area remains complex for a number of reasons that are outlined in the next section.

2. Research Issues in Business Markets

This section examines a number of matters for which only partial answers are available in the literature. These issues are included at this point as they provide a context for further examination of relational coordination.

An important issue involves the way in which social and economic relations interact. Economic relations are necessarily embedded within social relations, since economic actors must work through social actors (presented as both individuals and organisations such as firms). Thus, although economic factors are the dominant outcome of business markets, the role of social relations between and within firms remains absolutely essential in understanding these markets.

A major issue, apparent in the above, involves the level of aggregation of organisation in business markets. Thus, firms are at once collective actors of individuals in hierarchical power structures as well as individual actors in their own right (Lane and Maxfield 1996). However, even this definition of firms is incomplete, for interaction between individuals within a firm creates emergent social structures within and across the partial boundaries of the firm. These social structures of cooperating actors necessarily compete and coalesce with the hierarchical structures within firms, and contractual hierarchies between firms, to form complex social structures.

This partial view of complexity is further enhanced when considering organisations at higher levels of aggregation. For example, dyadic research views firms as individual actors and considers the relationship between the firms as another level of emergent organisation or aggregation (Håkansson 1982). In addition, relationships may exist between business units of different firms or between a firm and a business unit of another firm (Alajoutsijärvi, Möller et al. 1999), so that further complexity emerges. However, complexity does not stop there, for combining relationships leads to network organisations (Håkansson and Snehota 1995) that intercede with the wider environment. In addition, it is likely that different relationship types lead to network organisations of different types so that further dimensions of complexity are added. Finally, when the interactions between firms, relationships, networks and the social and economic environment are considered, complexity extends throughout commercial society.

Given the level of complexity in business research, it is necessary to be explicit about the theoretical framework and the level of organisational aggregation. A conceptual framework must be found that allows for different levels of aggregation if knowledge of business markets is to be expanded. Furthermore, care must also be taken that

constructs are defined in a manner congruent with a specific aggregation level (cf Rousseau 1985).

Defining constructs at the correct level of complexity, where the nature of the construct matches its context, is essential in business markets. For instance, constructs that explain 'personal' and 'group' behaviour are not directly transferable to the level of 'firms' and economic 'relationships'. Thus, when personal level constructs are defined at the firm level, or at the inter-firm level, they are partially removed from their psychological context and their antecedents, processes and outcomes must vary accordingly.

For example, when a firm makes a commitment at the inter-firm level of aggregation, defined as "an implicit or explicit pledge of relational continuity between exchange partners" (Dwyer, Schurr and Oh 1987), the application of resources within the relationship is achieved by a re-organisation of the firms, not by a psychological process within a mind.

This example makes two points clear with regard to issues of construct level. First, more complex construct levels would seem to subsume lower levels of complexity in varying ways. Second, personal and social aspects are not fully removed from the more complexly defined constructs. Thus, constructs at the inter-firm level remain embedded within social relations and re-organisation of the firms can only go so far, after which some aspects of commitment are accommodated within the minds and social group of the firms' decision makers. This complex association between construct levels means that actors synchronously develop their understanding of personal, firm and relationship constructs and how they are related (following Giddens 1979).

Although subsuming personal and firm commitment within relationship commitment creates potential for confusion, separating these levels of commitment allows clarification of the reciprocal association between constructs at different levels of organisation. That constructs are not defined explicitly to reflect levels of complexity remains a prime reason for problems of multiple definitions of similar constructs in organisational studies alluded to by Wilson (1995). The correct separation of construct levels should throw some light on the complex matter of inter-firm relationships.

The problem of construct level definition has another equally important aspect, for measurement of constructs at higher aggregation levels is difficult. This is a result of the limited ability of humans to perceive reality in its full complexity (Luhmann 1979). Even when key informants are carefully screened and sensitised to the level of aggregation (Campbell 1955; Phillips 1981; Kumar, Stern et al. 1993) they are likely to report differently on supra-individual and supra-firm organisation. Thus, measurement of higher order organisation constructs in past literature has remained primarily qualitative in nature.

Given these difficulties, a research framework is now explicitly elaborated to act as a guide and to identify the underlying assumptions of this study (Layder 1993).

3. Research Framework

The choice of a research framework for relational coordination is based on the growing acceptance of Relationship and Network theory (Ford 1990; Morgan and Hunt 1994; Håkansson and Snehota 1995; Achrol 1997). Specifically, the interaction and network approach of the IMP Group offers a framework for understanding the complexity of business markets (Håkansson 1982; Håkansson and Snehota 1995). The IMP framework proposes three forms of interaction between three levels of aggregation. The three levels of aggregation, from lowest to highest complexity, are: (1) the firms, (2) the inter-firm relationship as a unit of analysis, and (3) the wider network. The three forms of interaction exist: (1) within the relationship, (2) between the relationship and the firms, and finally (3) between the relationship and the wider network. These interactions combine in a complex manner to explain business behaviour (cf Håkansson and Snehota 1995).

A number of different approaches have been used to disentangle the complexity of a relationship and network view of business markets. Within the IMP tradition, an early approach was to look at the interaction effects between different levels of aggregation. For example, relationships were considered as the outcome of two firms interacting, with relationship "atmosphere" feeding back to condition the nature of interaction between the firms (cf Håkansson 1982). Later, this analytical technique was extended to the levels of relationships and networks interacting (cf Anderson, Håkansson et al. 1994).

A more recent IMP approach by Håkansson and Snehota (1995) conceptualises the interaction at the inter-firm relationship level to be composed of three layers, namely; actor bonds, activity links and resource ties. These layers change nature when the focus of interaction is between the firms and the relationship (ie actors, activities, resources) or between the relationship and the wider network (ie actor web, activity pattern, resource constellation) (Håkansson and Snehota 1995). The addition of layers, at each level of aggregation, has allowed fine-grained analysis within each level as well as across levels. This analysis is achieved by using any two layers to examine the impact on a third (Håkansson and Snehota 1995). For example, the nature of activity links and resource ties at the relationship level has an influence on the structure of actor bonds.

Whilst this approach has been successful in elaborating relationship and network theory, it continues to rely on qualitative methodology. Thus, the ability to generalise this research beyond the firms or networks involved in these studies has been limited.

An alternate to the above method, consistent with a theory of social coordination, is to argue that actors and actor bonds are the pre-eminent factors that drive interaction between the layers at their level of aggregation (ie respectively firm and relationship) and that actor bonds condition the nature of the interaction across levels of aggregation. That is, actors within firms drive interaction between activities and resources at the firm level, while actor bonds drive activity links and resource ties at the relationship level. Next, actor bonds condition interaction between firms and relationships and between relationships and networks. In a sense, actor bonds are the mechanism that condition actor interaction. This approach leads to normative and quantitative research that can allow statements to be made about cause and effect. Thus, this approach may provide insight into using networks strategically.

The next section outlines the reasons why actors and actor bonds may be considered as more important than activity links and resource ties in shaping relationships and conditioning interactions with the firms and network.

3.1. Pre-eminence of Actors and Actor Bonds in Relationships

Actor bonds result from an interpretation of events by actors. Since any interpretation necessarily relies upon socially accepted expectations, language and symbols (cf Elias 1991), actor bonds are linked closely to socially constructed modes of behaviour and to

social structures, such as industry and society cultures, which act as spaces and boundaries for these behaviours.

To the extent that actor bonds are socially generated constructs, within the symbolic arena, they can be seen as partly independent of resource ties and activity links over the long term. The independence of actors and actor bonds from economic activity is evident in situations where economic change forecloses business relationships. In these cases, actor bonds remain when their economic purpose is no more and may even become active again as new opportunities arise (cf Wilkinson and Havila 1998). Thus, over the long-term, actors and actor bonds are partly independent and may remain present and operational even when there are no resource ties or activity links.

This argument does not remove the importance of activity links and resource ties in the short term (cf Low 1996). Rather, in the short-term, activity links and resource ties may be more, or equally, important in shaping short term contractual and market oriented relationships. However, over the long-term, it is argued that actors and actor bonds are relatively more important than either activity links or resource ties in determining the nature of relationship types.

Apart from the partial independence of actor bonds, at least two further reasons support this argument. First, there is a reciprocal connection between actor bonds and events so that interpretation of events shapes actor bonds, while the nature of actor bonds influences the way events are interpreted. Second, the nature of actor bonds provides acceptable actor responses to change. Each of these arguments is elaborated below.

3.1.1. Actor Bonds and Interpretation

Actor bonds influence the interpretation of interaction effects at two levels: within the relationship and within interactions external to the relationship.

First at the relationship level, actor bonds play an important role in explaining how the inter-weaving of activity links and resource ties are interpreted. While activity links and resource ties result partly from the 'logic' of the network and the expertise and resource ownership of firms (Håkansson and Snehota 1995); the decisions regarding the division of activities across and between the firms is not left to external logic, nor is it the prerogative of a single firm.

Although one may argue that firms are constrained by their activity portfolio and resource mix in the way activities can be linked in a relationship, there are two arguments against this. First, each firm's resource mix is a result of an actor strategy within a specific network context. Actor strategy includes the choice of partner firms and consequently, the development of specific actor bonds, resource ties and activity links (Håkansson and Snehota 1995). However, since relationships require joint actor choice (Håkansson and Snehota 1995), it is the interaction between the actors and the actor bond which is central to strategic choice and which primarily directs how resource ties and activity links are made rather than the other way around. This suggests a primacy of actor bonds at the relationship level.

Second, when resources ties or activity links force a specific relationship, it is the nature of the actor bond that will influence how the resource tie or activity link are viewed. For example, where a more powerful firm uses resources or activity expertise to control an actor bond (ie hierarchical coordination), power differentials (ie an attribute of actor bond) will be inherent in the way resource ties and activity links are viewed.

The second level of interactions, external to the relationship, is also influenced by the nature of actor bonds. A relationship is open to forces of change from either the participating firms or the wider external network. In either case, while the firms' resources, actors and activity expertise or the linkages between the relationship and the network all constrain and provide options for dealing with change, it is the nature of the actor bonds in the relationship that provides the setting for interpretation of the change forces at work.

3.1.2. Actor Bonds and Acceptable Responses

The nature of actor bonds determines acceptable responses to changes in activity links and resource ties, whether the change comes from within the relationship or from external origin. For example, changes in activity links and resource ties can be openly negotiated when actor bonds between firms are characterised by high levels of trust and commitment (Morgan and Hunt 1994; Håkansson and Snehota 1995) and acceptable responses can be more differentiated in time (Luhmann 1979). That is, investment in new resources and expectations of profit flow may be unequal in amount, and over

time, for each party in a relationship. Such a situation would not be acceptable where actor bonds are characterised by low trust. Rather, any commitment to change in activity links and/or resource ties in a low trust situation would be minimal.

While this example indicates the importance of trust and commitment in generating complexity of interaction between partners, it also demonstrates that the nature of the actor bonds influences the responses available to firms facing change.

With actor intention and actor bonds as the predominant factors in business relationships over the long-term, attention must now be turned to the nature of interaction between firms and how different types of actor bonds (ie relationship types) evolve.

3.2. Actor Bonds and Relationship Types

The usual progression of relationship types documented in the literature is of actor bonds deepening as a business relationship develops through a lifecycle (cf Dwyer, Schurr et al. 1987). However, this explanation ignores the reality of a complex environment. An alternate view is of evolutionary change without stages (Van de Ven 1992). This evolutionary process is suggested by Ford and Rosson's (1982) longitudinal study where different relationship types were found, regardless of age (ie new, growing, troubled, static or inert relationships).

The interaction between firms to form actor bonds is complex, with conditioning effects operating reciprocally between firm and actor bond, as well as conditioning effects from network and relationship levels. Yet, the discussion in the previous parts of this chapter strongly suggests that actor strategic intent and actor bonds are likely to be the main factors leading to recognisable relationship types. That is, firms choose to develop different relationship types for short-term and long-term circumstances, based on the interpretation of actor bonds that are possible in that situation.

However, there is no certainty that both parties will necessarily view the relationship from the same strategic viewpoint. In fact, given variation in context, arising from the required complementarity of relationship partners within a network, some differences in viewpoint would appear to be a necessity (cf Anderson, Håkansson et al. 1994). The question of how great these differences may be, while the parties consider their

strategies to be complementary and workable, remains an empirical question. However, it seems likely that differences in viewpoint concerning coordination mechanisms could not be too different; else the firms' strategies would be dysfunctional.

However, this argument again suggests that differences in preferred manner of operating relationships would lead naturally to different actor bond structures. To date no research has empirically examined differences in actor bond structure.

3.3. Summary

The discussion above highlights the importance of actor intent and actor bonds in shaping business relationships and networks. This suggests that research should be directed to conceptualising actor intent and its associations with actor bonds. Such an endeavour will necessarily also involve the development of new quantitative methods.

To-date, only trust and commitment have been identified as important attributes of actor bonds (Håkansson and Snehota 1995). At the relationship level of aggregation trust provides the means for actors to reduce the complexity of chaotic events (Luhmann 1979) into the stability implied by a relationship, while commitment provides on-going evidence that the trust is justified (Gundlach, Achrol et al. 1995). Relatively high levels of both trust and commitment are necessary for continuing relationships to achieve steady states that are able to adjust to events and processes of change occurring in the environment (Håkansson and Snehota 1995).

Yet, trust and commitment are but two of a range of business norms that may exist within actor bonds. Norms are defined as "patterns of accepted and expected sentiments and behaviour that are shared by members of an exchange system and have the force of social obligation or pressure" (Gundlach, Achrol et al. 1995). That is norms, like actor bonds, exist in the symbolic arena shared by parties to an exchange. Furthermore, this symbolic arena is embedded within the social matrix. Thus, it is likely that Macneil's (1980) relational norms, defined as the norms necessary for on-going relationships, may provide additional norms to characterise actor bonds.

In this thesis the process of relational coordination is conceptualised as the combination of relational norms operating between the firms in a relationship.

4. The Research Problem

The role of actor bonds in business relationships and networks suggests that the interaction between firms and the resultant development of relational norms deserves close attention. To date, no research has looked quantitatively at the role of actor bonds in explaining relationship performance, nor has it examined the ways different relationship types develop as a result of actor bond structure.

Any examination of actor bond structure requires that dyadic research be conducted so that differences in firm's preferred mode of operating may be taken into account. Yet, the question of how actor bonds develop has not been adequately explained. Thus, this research is composed of two interlocking problems. The first problem to be addressed is the development of an input-process-output model composed of relational antecedents, relational norms interacting to form actor bonds and a measure of relationship performance. Thus, the first research problem maybe stated as:

How do actor bonds, their antecedents and outcomes, work together to explain relationship performance?

Once a model of actor bond development has been achieved, it becomes possible to examine the role of actor bond structure in determining relationship types by using dyadic sampling. Thus, the second research problem maybe stated:

Do actor bond structures, composed of dyad-level relational norm structures, explain relationship classes?

These two research problems require the elaboration and measurement of actor bond structure and an understanding of how actor bond structure develops from the joint action of two business parties.

5. Contribution of the Research

This research makes a number of important contributions to the literature on inter-firm interaction.

First, a relational coordination model of inter-firm interaction is proposed and tested. This model is based upon a process view of inter-firm relationships across different

levels of aggregation. This model is new as it examines business relationships with regard to their purpose: namely joint performance in the pursuit of both self and collective interest (ie two levels of aggregation). This approach overcomes a weakness of past quantitative research on inter-firm interaction, which mainly considers the purpose of business relationships to be simply the pursuit of self-interest.

Second, dyadic evidence is provided of the importance of trust and commitment in determining the success of inter-firm relationships that operate on joint and equal action. Thus, the central role of trust and commitment is quantitatively established in the case of dyadic business relationships. Past research has found trust and commitment to be central in explaining a single firm's performance as a result of participating in business relationships: this research provides support for the importance of interactive trust and commitment between parties in structuring relationships for better performance.

Third, a theory accounting for the structuring of actor bonds in relationships is elaborated for the first time. This theory extends the coordination contexts framework (Alajoutsijärvi, Möller et al. 1999) to incorporate context shifts and interaction effects. In addition, the concept of actor bond structure is operationalised at a dyad level of aggregation, so that some conclusions may be drawn about the way actor bond structure determines relationship types. Furthermore, this second section of the study allows a clear insight into the problems of dyadic research and leads to the identification of some significant opportunities for future research.

Fourth, for the first time quantitative evidence is provided of the effect of interaction between dyad partners on relationship performance and dissonance between parties. Interaction has been a central concept of the IMP view of relationships and networks, but no past study has empirically examined its influence so directly.

Finally, firm and dyadic models of a normative nature are presented. Two aspects are worthy of mention here. First, the dyadic model is developed as an aggregate of an empirically derived firm level model. This is the first time that a dyadic model of relationships has been developed in this manner. This approach provides a sound basis for development of the dyadic model. Second, these models allow an examination of the interaction between self and collective interest, as they operate across the different

levels of dyadic organisation. Thus, by contrasting firm and dyad level models, this thesis points to new research areas in dyad organisation.

6. Thesis Overview

The chapters of this thesis are organised in the following way. The first section of chapter two considers the evidence that relational coordination exists as a separate mechanism. Next, a wider range of actor bonds in the form of Macneil's (1980) relational norms are introduced and investigated for means of distinguishing between relational and other forms of coordination. A major issue in this section is the definition of constructs at the correct construct level and a separation of constructs across coordination mechanisms.

The remainder of chapter two examines the literature on relational norms and their potential complexity of interaction in relational coordination situations. The main point of this discussion is that separation of cause and effect may be accomplished by using a broader contextual model of relationship development. Thus, this chapter finishes by examining the literature on norm antecedents and outcomes in preparation for the presentation of a firm level model of relationship development.

Chapter three develops the concept of actor bond structure using a model based upon the high order coordination mechanisms. This model explains actor bond structure and does this in a way that handles the varying levels of aggregation in a network environment.

Chapter four presents propositions for testing in two sections. The first section proposes a collaborative interest model of relational coordination by a firm. This model explains how individual firms interact with another to achieve joint performance. In the second section of this chapter, an Interaction Possibility Space (IPS) model is developed and then a model of actor bond structure at the relationship level is proposed. This actor bond structure model is an extension of the collaborative interest model, in that it is dyadic, and accounts for differences across the dyad of actor's preferred mode of operating relationships. Thus, the juxtaposition of two sets of relational norms interacting is used to model actor bond structure.

Chapter five begins by presenting hypotheses developed from the propositions offered in chapter four. Next, the methodology and data collection procedures are described. The final section of chapter five discusses the methods of analysis for examining the proposed hypotheses.

Chapter six presents the results and discusses the limitations of the collaborative interest model of relational coordination in business markets.

In chapter seven the results and limitations of the actor bond structure model are presented.

Finally, chapter eight examines the implications of this study for future research. This final chapter has two main parts. The first part considers future theoretical research, while the second investigates the options for new research methods.

Chapter Two – Relational Norms as Actor Bonds

In seeking an explanation of the formation of actor bonds it is necessary to delve into the social processes at work within business relationships. Macneil's (1974; 1978; 1980; 1981; 1983; 1985; 1989) contractual exchange theory offers a way to broaden actor bond characteristics and relational coordination by providing a comprehensive approach to norms in market and non-market transactions. However, while Macneil (1980) distinguished between market and non-market norms, no distinction was made between various forms of non-market exchange, even though many forms of non-market governance exist (Bradach and Eccles 1989; Cannon, Achrol et al. 2000). Thus, the first section of this chapter examines the governance literature to learn how relational norms are associated with relational coordination. This is achieved by contrasting relational coordination with contract-hierarchical coordination, a closely related form of non-market coordination.

The second section of this chapter outlines Macneil's exchange norms in some detail with regard to firms and their relationships. Two important issues are addressed in this initial elaboration of relational norms. The first is construct level: with firms and actor bonds defined at two different levels of complexity (ie firm and relationship). The second issue is to find a means for distinguishing relational, from other, non-market coordination mechanisms. The social, rather than economic, nature of relational norms would appear to offer some means of distinction.

The third section of this chapter examines the literature on relational norm development. This highlights the importance of interaction within a framework of norms as the key factor in the development of relational coordination. Thus, the remainder of the chapter examines the antecedents and outcomes of relational coordination so that a causal framework that accounts for interaction and relational norms may be developed.

1. Relational Coordination as Governance

The governance literature is based upon the Transaction Cost Analysis (TCA) framework of Williamson (1975). TCA suggests that firms will internalise functions

that they can perform efficiently, but purchase from a market when costs are lower. Given the role of transaction costs as mediator of the 'make or buy' decision, TCA seeks to answer the question of how to construct efficient governance mechanisms (Williamson 1975; Williamson 1993). That is, what types and mixtures of coordination mechanisms (market, hierarchies and relational) allow for efficient exchange between firms?

Although no clear relational theory has been elaborated and tested, the governance literature has moved forward by using various definitions and indicators of relational coordination. Many studies have used some form of composite indicator based on Macneil's (1980) relational norms to operationalise relational coordination, while others have used the presence of interdependence, cooperation and durability (Boyle, Dwyer et al. 1992) or a composite measure based on variables developed from qualitative research (Noordewier, John et al. 1990).

The use of composite indicators is supported by Macneil's (1980) assertion that relational norms exist as a series of overlapping norms. Furthermore, Stinchcombe (1985) has argued that relational norms tend to support each other and comprise a 'syndrome'. Thus, provided some relational norms exist, researchers have presumed that relational coordination is present. However, there is no guarantee that the presence of a number of relational norms indicates the existence of relational coordination. It is possible that only a few specific relational norms guarantee relational coordination and the remaining, while present, may not be necessary.

The other methods of indicating relational coordination suffer similar weaknesses. Thus, it is not clear how the existence of interdependence, cooperation and durability or a composite measure based on variables developed from qualitative research can distinguish between relational and other forms of coordination. This argument will be developed after an initial explanation of coordination mechanisms.

If it is the case, that past measurement of relational coordination has been untenable, then the governance literature requires closer examination. However, this is beyond the scope of this thesis.

1.1. Market to Non-market Coordination Continuum

Markets and hierarchies were originally conceptualised as two independent coordination mechanisms on a continuum (Williamson 1975). Later, relational coordination was positioned in the middle of the market hierarchy continuum (Thorelli 1986; Williamson 1993; Fontenot and Wilson 1997). Recent theoretical developments regard relational coordination as one form of a plural set of non-market mechanisms (cf Bradach and Eccles 1989; Heide 1994; Cannon, Achrol et al. 2000), including hierarchies, contracts and relational coordination.

The uniting of hierarchies and contracts as non-market methods of coordination follows Stinchcombe's (1985) thesis, which is supported by Powell (1987), that contracts are documents outlining a form of hierarchy. That is, contracts formalise a hierarchical power structure so firms operate as one entity at the direction of the more powerful, even though each firm is a separate entity. This is most clearly displayed by the operation of franchise agreements, where a contract sets out a hierarchical mode of coordination.

However, there remains a problem with the configuration of non-market coordinating mechanisms.

1.2. Non-Market Coordination Mechanisms

The inclusion of relational coordination and hierarchies in the non-market category is suitable from a transaction cost perspective, but anomalous from a social and actor bond perspective. Hierarchies are based on use of power, influence and control: the antithesis of relational coordination based on willing joint interaction. Thus, to elaborate relational coordination requires means of distinguishing it from hierarchical coordination and, in particular, contractual hierarchies of separate firms. That the distinguishing means is social, rather than economic, is not in doubt for differences in the use of power, influence and control point to variations in social attributes and relational norms, as opposed to economic features. Thus, finding the distinction within a TCA framework is not likely. What is required are other indicators of relational coordination or the use of specific relational norms.

Apart from relational norms, another suggestion for inferring relational coordination in business markets is the existence of interdependency, durability and cooperation (Boyle, Dwyer et al. 1992). These three characteristics of long-term exchange clearly separate market from non-market coordination mechanisms. Thus, in the course of market coordination, exchange is characterised by minimal interdependence, durability and cooperation.

However, the attributes of interdependency, durability and cooperation do not distinguish relational and contractual hierarchy coordination, for they are also found in contractual hierarchies. For example, the concept of interdependency literally means that each party is dependent on the other for some aspect of creating successful transactions. However, interdependency does not preclude differences in power use and acquiescence between the parties and therefore various possibilities exist for hierarchical control between contracted parties. So, while interdependency may be an important precursor to relational coordination, it is also likely to be an important aspect of various forms of contractual hierarchical control.

This analysis applies equally to the other two indicators suggested by Boyle et al. (1992). That is, durability and forms of cooperation based on acquiescence also exist within contractual hierarchical coordination mechanisms. Thus, to rely on interdependency, durability and cooperation as indicators for relational coordination is a flawed approach.

The use of a qualitative approach in developing a composite measure for relational coordination in the ball-bearing market by Noordewier et al. (1990) is interesting as it leads to a list of variables very similar to Macneil's (1980) relational norms. Thus, qualitative research lead to the development of a composite measure of relational coordination based upon supplier flexibility, supplier assistance, information provided to supplier, monitoring of supplier and expectation of continuity. The authors admit the list is not definitive and may need to be varied by industry (Noordewier, John et al. 1990). Nevertheless, the composite measure had a reliability of 0.74, using a sample of 140 firms and Jöreskog's formula, a good performance for a second order structure (Noordewier, John and Nevin 1990).

1.3. Summary

It is apparent, from the preceding argument, that the means to distinguish relational and contract-hierarchical coordination, and thus separate relational coordination from other forms of non-market coordination, must be found within the characteristics of relational norms. The next section outlines Macneil's (1980) relational norms in some detail, seeking means to distinguish contract hierarchies from relational coordination.

2. Relational Norm Theory

The point of departure for Macneil (1974; 1978) is the importance of the future in conditioning current contractual relationships. Contracts can never codify all future contingencies (Macauly 1963). Thus, relationship parties must fill contractual gaps with relational norms to assure continuance (Macneil 1974; 1978).

Macneil (1980) proposes three classes of norms. The first class consists of ten common norms of contract that are evident within, and across, all of society. This class of generic norms are transformed depending on the nature of the contract (ie discrete or continuing) into two classes of specific norms. The norms for discrete contracts fit market situations where transactions are transitory, while relational norms develop within a relationship when transactions are protracted.

This preliminary statement deserves close attention for it has two theoretically ambiguous aspects. The first is that relational norms exist at the relationship level of complexity and are constructed by the parties; while market norms exist in a socially constructed environment (ie the market) and are operationalised at the level of the firm. Thus, the distinction is the locus of norm construction. This points to two issues. The first is that relation norms, constructed by the parties, are essentially components of actor bonds. The second issue is the recurring problem of dealing with construct integrity across levels of complexity (Rousseau 1985). To achieve construct integrity with relational norms requires elaboration and separation of the two levels of organisation: firm and dyad. In addition, the association between these two levels must be explained. This is not easy as the association is reciprocal and complex.

The second ambiguous aspect is the lack of definition, by Macneil (1980), of protracted non-market transactions. Macneil's contractual exchange theory unequivocally

distinguishes between market and non-market coordination, but does not separate non-market transactions into types. Thus, a concern of the following discussion should be the elaboration of a distinction between contract-hierarchy and relational coordination, for only by separating these concepts can the mechanisms of relational coordination be made clear.

Macneil (1980; 1983) proposed that relational norms would develop from the intensification of four common norms and the muting of the remaining six. The four relational norms based on common norms include: commitment[1], harmonisation of relational conflict, role integrity and flexibility[2]. In addition, other relational norms, not based on common norms, also develop within a relationship (Macneil 1983). These supplementary relational norms are trust[3] and open communication.

In addition, Macneil (1980) defined an overarching relational norm termed "supra-contract". This higher-order relational norm describes fully-fledged relational contracts as having "distributive justice, liberty, human dignity, social equality and inequality, and procedural justice" (Macneil 1980, pp70). This rather abstract relational norm apparently emerges with the accomplishment of the four relational norms. Supra-contract is not discussed here as it is assumed to be present when all relational norms are developed.

However, the inclusion of "liberty", "human dignity", "social equality" and "social inequality" in supra-contract is worthy of note, for these concepts offer a partial solution to distinguishing between contract-hierarchy and relational coordination. The distinction between equality and inequality would appear to clearly separate relational coordination from hierarchical control based on the self-interest of the more powerful party.

The next section introduces Macneil's relational norms, describes their level of complexity and identifies other basis for distinctions between contractual-hierarchical

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[1] The use of the term "commitment", instead of "solidarity", is explained in the next section.
[2] The use of the term "flexibility", instead of "propriety of means", is explained in the next section.
[3] The use of the term "trust", instead of "mutuality" is explained in the next section.

and relational coordination. In addition, the distinction between market and relational coordination is also made clear.

2.1. The Relational Norms

The problems of construct and organisation aggregation level have resulted in a fragmented discussion of relational norms in the literature. Even Macneil was not particularly concerned with operationalising relational norms (Kaufmann and Stern 1988), so that the processes linking relational norms to firm and person level constructs have not been clearly elaborated (Zaheer, McEvily et al. 1998).

Rather, Macneil's interest was in developing an internally coherent theory of contractual exchange within the legal context. This explains why Macneil (1980) did not seek to incorporate known constructs from the inter-firm literature. Thus, the norms of commitment and trust, which are recognised attributes of actor bonds (Morgan and Hunt 1994; Håkansson and Snehota 1995), must be linked to Macneil's theory. When commitment and trust are defined at the level of actor bonds (ie relationship level) it is clear that similarities exist with two relational norms.

2.1.1. Commitment

Commitment has been defined, at an inter-firm level, as "an implicit or explicit pledge of relational continuity between exchange partners" (Dwyer, Schurr and Oh 1987) and has been shown to be central to understanding business relationships in distribution channels (Morgan and Hunt 1994).

When commitment is conceptualised at the relationship level of organisation, it is essentially Macneil's (1980) norm of 'preservation of the relation.'[4] This relational norm results from the intensification of the common norm of 'solidarity' when interaction is on-going (Macneil 1980). 'Preservation of the relation' was defined, by

[4] The decision to name "preservation of the relation" as "commitment", rather than the other way around follows the choice of Relationships and Networks as the initial research framework.

Macneil (1980, p90), as "a common belief in effective future interdependence", which is in effect a belief at a relationship level that each firm is committed to the other.

Commitment and continuing signs of that commitment by each firm are required to nurture and maintain a business relationship (Han, Wilson et al. 1993). That is, relationship commitment is evident from signs of commitment at the firm level, with firm-level commitment then subsumed within relationship commitment. It is commitment at the relationship level that reflects Macneil's "preservation of the relation" norm. However, this cannot exist without the mixture of firm level and even person level commitment. Thus, commitment by a firm results in a structuring of resources and activities that signals commitment to the relationship (Gundlach, Achrol et al. 1995), while appreciation of commitment at the relationship level causes decision makers within firms to strengthen in turn their commitment at the firm level (following Giddens 1979).

The above discussion clearly implicates commitment as an important characteristic that distinguishes between market and relational coordination. Thus, in the case of market coordination, structuring of a firm's resources to match the requirements of another party will not be found. Gundlach et al. (1995), with a ten-period management simulation framework of respondents playing the roles of interacting manufacturers and distributors, showed that the credibility of commitment inputs explains long-term commitment intentions. Presumably, varying levels of commitment on strategically important inter-firm initiatives would indicate differences in reliance upon relational versus market coordination.

Macneil's use of the interdependence construct in the definition of commitment deserves attention for, as argued earlier, the concept applies equally to contractual-hierarchical coordination. That is, contracting parties in a hierarchical control relationship must also be committed to their relationship. The distinction is in the nature of that commitment, with power and acquiescence being present as qualities of relationship commitment in hierarchy situations. Thus, one cannot rely on relationship commitment alone to distinguish between relational and contract hierarchy coordination. However, variations in the quality of firm level commitment may offer means for distinction.

2.1.2. Harmonisation of relational conflict

As a close relationship develops, the common norm of harmonisation of the social matrix is transformed into harmonisation of relational conflict (Macneil 1981). Thus, as firms' focus on collective interest, conflict is removed by following non-hierarchical procedures developed within the relationship (Achrol 1997). This involves finding mutually acceptable answers to conflict so that the exchange may continue into the future. In contrast, when firms focus on self-interest, conflict is likely to be harmonised through hierarchical power mechanisms, or through external means (Achrol 1997) such as litigation, arbitration or market coordination. Thus, the occurrence of conflict harmonisation clearly indicates the existence of relational coordination.

Conflict harmonisation is mirrored at the firm level by the constructs of power use and influence strategies. Early studies on the use of power and influence in distribution channels (cf Gaski 1984; 1986) focused on use of power to control channel intermediaries and so achieve acquiescent cooperation based on self-interest (ie hierarchical coordination). Even when Gaski and Nevin (1985) distinguished between exercised and non-exercised power, the focus of most research remained upon the effects of the exercise of that power to gain acquiescence. Yet, distinction of non-exercise of power had potentially opened the way to consider use of power for other than self-interest. In contrast, a few researchers have focused on power use to achieve relational coordination through non-adversarial means involving balanced use of influence (cf Wilkinson 1973; Young and Wilkinson 1989; Håkansson and Snehota 1995; Frazier 1999).

In this study, conflict harmonisation is considered a relationship level construct, with firms' use of power and influence posited as firm level constructs. This means that a reciprocal association is at work, with firms in relationships characterised by conflict harmonisation using influence procedures that ensure positive conflict resolution. Thus, this relational norm appears to offer a means to distinguish between contract hierarchy and relational coordination, since conflict harmonisation is based on social equity and the use of influence to achieve jointly determined outcomes.

2.1.3. Complex Role integrity

The third common norm of 'role integrity' refers to the way activities are divided amongst the parties to an exchange. As firms move away from market-based to relationship coordination, they change from separate entities to an organic entity that exhibits 'complex role integrity' (Macneil 1980). This characteristic of actor bonds is clearly defined at the relationship level and indicates highly intertwined activity links between relationship firms. As such, it undoubtedly distinguishes market and relational coordination.

The means by which role integrity develops to high levels of integration allows a distinction to be made between market and relational coordination. With relational coordination, the imperative of maintaining the relationship into the future results in activity division according to internal rules, social customs and obligations between the parties (Macneil 1980). This contrasts with market coordination where each party is guided by self-interest, the terms of contract, property rights and the law (Achrol 1997).

However, in the case of contract hierarchies, the development of role integrity is arranged in a similar manner to market coordination, using contractual property rights to define the nature of interaction between firms. Thus, a question remains as to whether complex role integrity may be associated with contractual hierarchies. Certainly, a degree of role integrity may exist with hierarchical coordination, but whether complex integration may occur is an open question. It would, therefore, seem that differences in role integrity across relational and contract hierarchies would be a matter of degree.

2.1.4. Flexibility

The fourth common norm is 'propriety of means' (Macneil 1983). This norm refers to the multiple paths available to achieve any outcome when strong relationships develop. As firms move to a collective orientation, this relational norm leads to a complex web of possible relations between partners based on rules, habits and internal procedures developed within the relationship. These possibilities at the relationship level exist as potential options for further role complexity and offer opportunity for firms to interact in a flexible manner. This relational norm has previously been operationalised as

'flexibility' (Boyle, Dwyer et al. 1992; Heide and John 1992) and will be referred to as such for the remainder of this study.

The interaction between firm and relationship level flexibility is presumed to work in the following manner. When two firms are willing to be flexible in activity or resource use, the level of relationship flexibility increases. That is, relationship flexibility refers to interaction at the inter-firm level. Thus, when relationship flexibility exists, present offering of flexibility at the firm level is more likely. The level of flexibility clearly distinguishes between market and relational coordination

A construct similar to flexibility is cooperation. Cooperation has been defined as working together for mutual gain (Anderson and Narus 1990; Morgan and Hunt 1994). However, Morgan and Hunt (1994) also distinguish between cooperation based on proactive interaction and acquiescence, or reaction to another's influence. Thus, Morgan and Hunt (1994) distinguish different aspects of cooperation on the basis of control.

At the relationship level of aggregation it seems likely that flexibility and cooperation are very similar constructs, for the distinction of which firm must be more flexible is lost within the intricacies of the relationship. Thus, the relational norm of flexibility appears to offer some ability to distinguish between relational coordination and contractual hierarchies. Flexibility in contractual hierarchies is limited to the terms of the contract, which will more heavily represent the interests of the powerful party and to which the less powerful party must acquiesce. This contrasts with relationships based on relational norms that offer a much broader and less well defined set of options for overcoming environmental disturbances.

2.1.5. Open Communication

Information exchange, or communication, is an important aspect of business relationships (Mohr and Spekman 1994). As a mutual orientation arises and organisation occurs at the relationship level, communication becomes more open with an expectation that each party will pro-actively provide information to the partner (Heide and John 1992). Thus, defined at the relationship level, open communication results in timely and relevant communication interaction between firms.

Research by Boyle et al. (1992) appears to indicate that a variation in relationship type (ie whether corporate, contractual or independent) causes discontinuity in the nature of communication between firms. Thus, this relational norm may offer some opportunity to distinguish between contractual-hierarchy and relational coordination, but the distinction is one of degree rather than form, making it difficult to operationalise.

2.1.6. Trust

Trust is known to be important in inter-firm relationships (Morgan and Hunt 1994; Håkansson and Snehota 1995), yet Macneil (1980) did not include it as a relational norm. Trust at a personal level is a multi-dimensional construct composed of elements such as; expectancy, reliance upon others, faith, surrender of control, consistency, mutuality and utility for risk (Corazzini 1977). However, rarely has trust been viewed at this level of complexity in the inter-firm literature.

It has been suggested that trust takes on different shades of meaning, according to which aspect of a relationship is being considered (Rempel and Holmes 1986). Trust has been shown to operate differently at the inter-person and inter-firm levels of complexity (Zaheer, McEvily et al. 1998). In a sample of 107 buyer-supplier relationships, trust at the two levels of complexity was measured using two informants in the buying firm. It was found that interpersonal trust exhibited the dimensions of predictability and fairness, while inter-firm trust displayed reliability and fairness. These inter-firm trust dimensions reflect the dimensions considered most often in the literature (Anderson and Narus 1990; Ganesan 1994; Morgan and Hunt 1994; Zaheer, McEvily et al. 1998). Reliability or expectancy is a belief that the other party has the expertise and ability to perform, while fairness or benevolence is a belief that the other party will treat the risking party well under new conditions.

The above discussion clearly implicates trust as an important characteristic distinguishing between market and relational coordination. Thus, with market coordination, where trust is low, firms will not structure exchange so that they rely totally on one other firm. Rather, trust is extended only in relation to the completion of the current exchange event. Whereas in the case of relational coordination, trust allows firms to believe in a joint future and to structure their resources in such a way that non-performance by the other firm risks material damage (Morgan and Hunt 1994; Achrol

1997). Thus, varying levels of trust, and the consequent structuring of resource ties and activity links in strategically important inter-firm initiatives, distinguishes between relational and market coordination.

Macneil (1980) includes mutuality as a relational norm that develops in relationships that have achieved a collective orientation. Kaufmann and Stern (1988) in the first operationalisation of relational norms, defined mutuality as the degree to which partners focus on the benefits of the relationship as a whole over the long-term, rather than monitoring individual transactions for fairness. However, Kaufmann and Stern's (1988) measure for mutuality was not operationable as it was defined with two components; benefit division and monitoring.

When trust and mutuality are considered at the more complex supra-firm level of organisation, it is likely that they become inseparable. Given that empirical evidence suggests that trust plays an important role in business relationships (Morgan and Hunt 1994; Håkansson and Snehota 1995), mutuality should be co-assigned with relationship trust in future research. For mutuality to exist, where each partner is equally concerned for the other's welfare, not only must there be an underlying view of equity between the parties; but the level of relationship trust must also be high to facilitate the level of risk associated with mutuality.

The importance of firm level trust in filling contractual gaps suggests that this construct, at a firm level, cannot easily distinguish between contractual-hierarchy and relational coordination. However, when two firms each trust the other, a relationship trust structure exists that moves beyond hierarchical control. Thus, relationship trust can distinguish between relational and contract hierarchy coordination. This is important since no other aspect of joint structure, except conflict harmonisation, allows differentiation between these two coordinating mechanisms.

2.2. Summary

It seems likely that a number of relational norms may aid in distinguishing between relational and contractual-hierarchical coordination, however in most cases the distinctions are fine and are qualitative rather than quantitative. The main distinguishing differences appear to be the structure of trust and the locus of control. That is, relational coordination is based on equal high levels of trust along with joint

control based on social equity and mechanisms for peer resolution of conflict. This contrasts with contract hierarchies where the more powerful party controls and coordinates the relationship. Thus, relational coordination maybe defined as joint control and action, where equity and judicious use of influence are balanced, in a committed and trusting business relationship with open communication.

The apparent weaknesses of relational norms to distinguish between non-market coordination mechanisms indicate an area for future research. However, this will not be pursued in this thesis: the role of relational coordination in the creation of relationship types remains the key focus. To follow this thread it is necessary to explain the process of relationship development, before a model of actor bond structure explaining relationship coordination classes may be developed. Thus, the next section examines relationship models to seek a firm level model of relational coordination.

3. Relational Norm Development

Conceptualised at the actor bond level of complexity, relational norms result from interaction between the parties within a strategically defined relationship context. That is, interaction at the firm level leads to relational norms at the actor bond level.

However, models explaining relationship development have tended to rely on norms or interaction, rather than interaction within a norm framework. The first part of this section makes this distinction with regard to relationship development models. This leads to a discussion of the potential interactions between firms and how relational norms develop as actor bonds.

3.1. Relationship Development Models

All models of relationship development are based on decreasing self-interest and greater collective interest, although rarely are the suggested stages exactly similar (see figure 2.1).

Figure 2.1 Relationship Development Models

Author/s	Stages				
Scanzoni 1979	Exploration		Expansion	Commitment	
Macneil 1980	Discrete transactions		Relational exchange		
Håkansson 1982			Social/Economic Interdependence		
Frazier 1983	Initiation		Implementation		Review
Dwyer, Schurr and Oh 1987	Awareness	Exploration	Expansion	Commitment	Dissolution
Heide 1994	Initiation		Maintenance		Termination
Wilson 1995	Partner Selection	Defining Purpose	Setting Boundaries	Creating Value	Maintenance

This is partly explained by the different level of complexity of organisation that each model seeks to address, but it is also a function of the underlying theory at work in the transformation from self to collective interest. That is, relationship development models seek to explain the formation of collective interest in three ways:

(1) by development of norms,

(2) by interaction between the parties, or

(3) by a combination of the above two (see figure 2.2).

Figure 2.2 Overview of Theories of Relationship Development

Author/s	Level of Aggregation	Transformation Source (Norm or Interaction)
Scanzoni 1979	Inter-person	Both
Macneil 1980	Relationship	Norm
Håkansson 1982	Firm to relationship	Interaction
Frazier 1983	Firm	Interaction
Dwyer, Schurr and Oh 1987	Firm to relationship	Both
Heide 1994	Firm to relationship	Norm
Wilson 1995	Firm to relationship	Interaction

While it is not always possible to separate the relationship development models on a simple dichotomy of norms versus interaction, it is instructive to do so as it highlights the underlying assumptions about what causes the transformation to a collective level. Each group of models is now examined.

3.2. Norm Models

The norm based relationship models do not seek to explain the transformation from self to collective interest. Rather, these models accept that relational norms must exist for a business relationship to work. Macneil (1980) does not consider the question of how relational norms develop, being satisfied that they are embedded in the supra-organisations of society and culture as pre-existing norms, such as custom, status, habit and hierarchy as well as past relationships.

The general explanation for norm formation relies on socialisation and norms present in society (Gouldner 1960; Heide 1994). That is, socialisation leads to norms of behaviour that provide expectations about how specific activities should be conducted in a relationship (Macneil 1980; Heide 1994).

Models of relationship development based on norms present a number of weaknesses that are now discussed. A major weakness of norm-based models is the lack of explanation of the mechanism according to which norms develop. These models do not provide any requirements, or processes, that explain the transformation from self to collective interest (Heide 1994). This lack of clarity regarding mechanisms is understandable, as norms exist at a supra-person level of organisation and are thought to form through socialisation to serve the needs of social structures (Gouldner 1960). That is, for on-going relationships to exist, certain responsibilities and coordination activities must be performed (Macneil 1980). However, that norms are required does not explain how they develop. Even though one can logically deduce the responsibilities, tasks or activities required to maintain a collective orientation (cf Heide 1994), the shift from self to collective interest must be explained by relying on factors outside of norms.

A second weakness of norm models relates to the roles of self and collective interest, for collective norms operate differently from a situation where the parties pursue self-interest. Thus, the possibility of a mixture of self and collective interest in business relationships is weakened and the impact of self-interest may even be ignored in these models. Neither Heide (1994) nor Macneil (1980) consider the possibility of self-interest, yet economic and social behaviour clearly involves both self and collective interest.

On the positive side, however, norm based models do provide some explanation for the variation observed in business relationships and actor bonds, since different sets of relational norms between firms would explain creation of various relationship types.

3.3. Interaction Models

In contrast, models explaining relationship development through interaction alone ignore the over-arching influence of relational norms. Instead, each model highlights different interaction processes (ie the crucial variables at each stage of relationship development and how they interact) (cf Wilson 1995) and all rely on interaction between the parties to explain relationship development. A number of points may be made concerning the interaction models.

First, as with norm-based models, it is the interest in maintaining future exchange (Dwyer, Schurr and Oh 1987) that is the key to the development of a collective orientation. Second, interaction models recognise both self and collective interest. The collective interest is displayed by the way the other party mediates rewards in a relationship based on expected net gains from joint action (Dwyer, Schurr and Oh 1987). The role of self-interest is evident in the need for rewards as a basis for motivation to interact (Dwyer, Schurr et al. 1987). However, for continuing relationships to exist, collective interest must generally take precedence over self-interest. Thus, the individual focus within the interaction models emphasizes the need for a mechanism that limits self-interest. Yet, bargaining and negotiation, the interaction mechanisms by which self and collective interest are balanced within interaction models (cf Dwyer, Schurr et al. 1987; Achrol 1997), are more closely related to market norms. This tends to suggest that norms exist in the interactions of continuing relationships.

Finally, in these models, the interaction processes are complex and reflexive in nature, making it difficult to attribute cause and effect in the process of relationship development. For example, Scanzoni (1979) compares the expansion stage of relationship development to a stochastic process where attraction, obligation and negotiations inter-link across spheres of influence, so that changes in one sphere cause interdependence to arise in another. Thus, cause and effect become so entwined and context specific as to be inseparable (Scanzoni 1979).

The interaction explanation of the transformation from a self to collective orientation, therefore, as with norm-based theories, is also incomplete. However, models based on interaction in a norm framework appear to offer a solution. The next sub-section looks at these hybrid models.

3.4. Interaction in a Norm Framework

The transformation process in the hybrid relationship models appears to rely on both interaction and norms. Thus, a collective orientation in these models is thought to result from careful use of power in the interaction process (Dwyer, Schurr and Oh 1987). However, the distinction between careful and improper use of power or influence is not explicitly made (cf Dwyer, Schurr et al. 1987).

In passing, it is worth noting the strong conceptual link between judicious use of influence and Macneil's (1980) norm of conflict harmonisation leading to positive resolution of problems. These concepts would appear to be the same as both seek relationship continuance through positive conflict resolution.

Scanzoni (1979) comes closest to providing a structure for distinguishing careful use of influence by making a strong case for the role of pre-existing societal norms. These pre-existing societal norms, in Scanzoni's (1979) view, help define by comparison the norms that exist within a relationship. This conceptualisation of interaction within a norm framework has been presented at the personal and social level (Scanzoni 1979), but how this transcribes to a business environment requires further research.

3.5. Summary

The discussion above suggests that a norm framework offers a context for business interaction processes. That is, actor bond structure, as determined by relational norms, works as a conditioner of interaction processes at the firm level and the process is reciprocal. If this is the case, then a review of the interaction processes at a firm level and the way they inter-link with relational norms is required.

4. Interaction between Relational Norms

The literature is replete with relevant contributions on the effects and interactions between constructs that are similar to relational norms. However, the majority of these

constructs are posited at a firm level; or when considered at a relationship level, are mainly measured from one firm's perspective.

The main constructs are listed in figure 2.3 by level and authors. It must be noted that the literature based on composite relational norm constructs is not included in this section, as the focus is on the interaction of specific relational norms in the development of relational coordination.

Figure 2.3 Relational Norms and possible Dimensions

Contruct	Dimensions/elements	Authors	Level
Trust	Expectancy Reliance upon others Faith Surrender of control Consistency Mutuality Utility for risk	Corazzani (1997)	Individual
	Expectancy Benevolence	Ganesan (1994) Morgan and Hunt (1994) Anderson, et al (1990) Andaleeb (1995) Zaheer, et al (1998)	Firm Firm Firm Inter-firm Inter-firm
	Faith Risk Taking	Achrol(1997) Golembiewski (1975) Andaleeb (1995) Zaheer, et al. (1998)	Firm Firm Inter-firm Inter-firm
Commitment	Attitudinal component Continuity pledge Input component Temporal dimensions Consistency Mutual investment	Scanzoni (1979) Dwyer, et al (1987) Anderson (1992) Meyer and Allen (1991) Gundlach, et al.(1995) Holm, et al. (1999)	Individual Inter-firm Firm Firm Firm Inter-firm
Role Integrity	No integration Complex integration	Macneil (1980) Achrol (1997)	Inter-firm Inter-firm
Communication	Misdirection Closed communication Open communication	Mohr (1994) Heide (1992) Anderson (1989)	Firm Implied Inter-firm Firm
Flexibility	Inflexible - flexible Contractual - relational	Boyle, et al. (1992)	Firm Firm
Conflict Harmonisation	Self-interest - collaboration Influence Power used cooperatively	Macneil 1980 Hakansson (1995) Gaski (1984, 1997) Ford (1990) Boyle et al.(1992)	Inter-firm Inter-firm Firm Inter-firm Firm
	Domain	Achrol 1997	Inter-firm

A cursory glance at figure 2.3 quickly informs the reader of the potential complexity of interaction between the dimensions of relational norms and the firm level constructs they subsume. Of course, it is unlikely that all relationship structures in all industries will exhibit all dimensions of these relational norms. However, even if in individual cases the number of constructs may be reduced, the research task remains challenging.

Each of the norms is now discussed in turn with reference to its potential interaction with other norms and firm level constructs. The purpose here is to indicate the complexity of relational norm operation within relationships and to note new and different linkages not yet considered in past literature.

As it is difficult to avoid drawing on all relational norms at once, a specific order has been determined for this section. First, the widely accepted actor bond attributes of trust and commitment are discussed, without reference to other relational norms. Next, role integrity, communication, flexibility and their interactions with trust and commitment are discussed, as they represent relatively new constructs. Finally, conflict harmonisation is discussed with reference to the five preceding relational norms. Conflict harmonisation is placed last, as it is apparent that achievement of careful use of influence and equity of control is central to relational coordination.

4.1 Trust

Although trust is known to be important as a mediating variable in relationships and despite evidence that inter-firm trust leads to commitment (Anderson, Lodish et al. 1987; Moorman, Zaltman et al. 1992; Morgan and Hunt 1994; Nielson 1998), the dynamics of trust over time have not been fully examined in the literature. Achrol (1997) suggests two models; one where faith comes first followed by risk-taking behaviour so that trust is developed, and the second where risk-taking signals willingness to trust. These two approaches are considered to interact in a mutually reinforcing spiral (Golembiewski and McConkie 1975; Achrol 1997) in which case the question of direction of causation to commitment at a relationship level is a moot point.

That trust exists at different levels of organisation is apparent from the work of Zaheer et al. (1998). Yet, most studies of trust have been at the firm level or have inferred relationship trust from one party's observation. One exception is the study by Kim (2000) where dyadic level trust was operationalised as the non-weighted average of the distributors' trust in the supplier and the suppliers' trust in the distributor. (The results of this study are discussed under Section 4.6. Conflict Harmonisation.)

Given the importance of trust in distinguishing market and relational coordination, the interaction between the different levels of trust remains an important area for future research.

4.2 Commitment

Commitment has, generally, been conceptualised at the firm level of complexity. For example, Morgan and Hunt (1994) defined commitment as "an exchange partner believing that an on-going relationship with another is so important as to warrant maximum efforts at maintaining" the relationship. Morgan and Hunt (1994) confirmed that firm level commitment to a relationship is a result of economic factors (ie relationship benefits and termination costs) and social constructs (ie shared values and trust); and that relationship commitment leads to acquiescence (ie hierarchical coordination) and cooperation while reducing propensity to leave a relationship. However, Morgan and Hunt's (1994) study is fraught with level issues, since acquiescence and cooperation are interaction constructs rather than relationship outcomes. This level problem suggests that whether trust precedes commitment remains debatable.

There have been only two exceptions where the measurement of relationship level commitment has used the perspective of two firms (cf Gundlach, Achrol et al. 1995; Holm, Eriksson et al. 1999). In the first study, Gundlach, Achrol and Mentzer (1995) tested the structure of commitment inputs at the relationship level. A strength of this study was the use of a ten period simulation of interaction between manufacturers and distributors. Not only was dyad data able to be collected, but also the reciprocal nature of interaction over time could be effectively measured. However, only the structure of commitment inputs was conceptualised at the relationship level, with all other constructs posited at the firm level. Commitment structure referred to the pattern of commitment in the relationship and this was theorised as comprising two aspects: credibility and proportionality. Credibility was conceptualised as the sum of the party's commitment measures, while proportionality was conceptualised as the absolute difference between the firms' commitment scores. Thus, a low proportionality score represented equivalent levels of commitment across the dyad, while the credibility score was empirically equivalent to averaging the two firms' commitment scores.

Gundlach et al (1995) proposed that commitment credibility and proportionality, at the relationship level, would influence the present and future long-term commitment and opportunism respectively at the firm level. Their results suggest that credibility of commitment inputs at the relationship level leads to present long-term commitment

intentions at the firm level (R^2 varying between 0.69 and 0.48 for manufacturer or distributor and time period). For distributors, it leads to actual long-term commitment intentions in a future period (R^2=0.35). However, this final association was not found for manufacturers. These results are quite good considering that the measure of credibility commitment inputs suffered from averaging across the dyad.

Overall, these results suggest a spiralling effect, with relationship and firm level commitments made in the present leading to long-term commitment intentions at the firm level. The role of trust in Gundlach et al.'s (1995) study was not clear, but a measure for relational norms that included trust was positively associated with credibility of commitment inputs and long-term commitment intentions in the present and a future period. This indicates that relationship level commitment may influence trust or that trust may influence commitment.

The second study to operationalise a dyadic measure of commitment (Holm, Eriksson et al. 1999) used the IMP data set. In this study dyadic commitment was measured from one firm's perception of the investment made by their partner and themselves in the relationship. The study used structural equation modelling to show that mutual commitment resulted in mutual dependence (β=0.68, t=3.18), which then leads to value creation (β=0.52, t=3.32). This study is intriguing for the value creation construct represents the first use of a performance related dependent variable that is explicitly defined at the relationship level, rather than at the level of the firm. The role of trust was not considered in this study, although mention is made of the importance of flexibility in maintaining continuity of coordination. Thus, Holm, et al.'s (1999) study provides evidence of the importance of mutual commitment, but does not extend the understanding of how relational constructs interact to support inter-firm coordination.

4.3. Role Integrity

Role integrity becomes more complex as relationships deepen. Importantly, the complexity of role integrity does not result only from the attainment of relational norms. Rather, complex role integrity is equally required for trust and commitment to be displayed in a relationship (Achrol 1997). In other words, role integrity, trust and commitment are concomitant constructs.

Kaufmann and Stern's (1988) study operationalised role integrity prior to a legal dispute between firms and though the measure was quite robust (alpha=0.71) it was not found to be significant in explaining reduction of conflict after the dispute. However, as there were many intervening factors at work, including methodological issues, in that study, research on role integrity should continue. No further literature is relevant, as all other operationalisations of role integrity have been within composite indicators so that the association with other relational constructs cannot be deduced.

Given the linkages between trust, commitment and role integrity and the way variation in complexity of role integrity is bound to a specific time period, it appears logical to treat complex role integrity as an indicator of the achievement of relational coordination.

4.4. Open Communication

Communication events by firms signal, precede, and eventually follow, changes and processes at work within a relationship. Thus, the norm of open communication in a relationship is based on the interpretations of communication events and processes at the firm level. It is known that a higher level of communication quality and information sharing is associated with more successful partnerships (Mohr and Spekman 1994). In addition, it has been suggested that appropriate communication may alleviate distrust when environmental events threaten a mutual venture (Anderson and Narus 1990).

It is important to distinguish between openness of communication by firms and the quantity of communication events. It is likely that the number of communication events is higher in developing relationships and those where the stakes are high, but such communication quantity does not necessarily equate to a mutual orientation. It has been suggested that in long-term committed relationships, the level of communication may actually fall, as efficiencies are gained (Anderson and Weitz 1989).

Furthermore, open communication by a firm does not require that confidential information be necessarily provided. The measure of communication openness lies in the usefulness of the information to the other party. Thus, it may even be that the information is publicly available, but is provided at the appropriate time.

Whether open communication is an antecedent of trust is not clear from the literature. A number of authors (Anderson, Lodish et al. 1987; Anderson and Narus 1990; Morgan and Hunt 1994) suggest that trust results from open communications, while Dwyer, Schurr and Oh (1987) suggest that trust allows open communication. Both sets of writers are correct if the process is complex and iterative. Indeed, Anderson and Narus (1990) comment that communication may lead to greater trust, which results in deeper and more meaningful communication.

However, empirical evidence about the relationship between open communication and trust is mixed. Boyle, Dwyer, Robicheaux and Simpson (1992) found frequency of recommendations, promises and information exchange to be positively associated with relational norm development. Anderson and Narus (1990) found that cooperation was a strong antecedent of trust from a distributor perspective, while both communication and cooperation were antecedents of trust from a manufacturer perspective. Anderson and Narus (1990 p45) explain this discrepancy as a function of a static representation of an iterative process.

Together these studies suggest that open communication precedes trust. Yet, Morgan and Hunt (1994) found only a weak relationship between communication and trust and in comparison to Anderson and Narus (1990), Morgan and Hunt (1994) found strong support for trust as an antecedent of cooperation.

These differences in empirical results can be explained in two ways. First, static representation of an iterative process would provide only a partial view. However, in a sense, this statement is recognition of problems with the level of analysis. Accounting for variations in organisation level resolves the problem by allowing iterative processes to work via feedback between different levels of organisation. In this case, firm level cooperation and communication builds relationship level trust and open communication, which results in further communication and cooperation back at the firm level. Thus, the level of trust, commitment and role integrity available within a relationship necessarily influences interpretations of firm level communication. This suggests quite complex interactions between these relational norms.

A second explanation of the difference in empirical results is the variation in network position. Quite obviously, the manufacturer and distributor in Anderson and Narus'

(1990) study have different network positions that result in variations in importance across the relational norms, while the difference between Morgan and Hunt's (1994) results and Anderson and Narus (1990) are explained by the variation in industry networks.

The arguments above indicate that a new approach must be taken when analysing inter-firm relations, an approach that accounts for variation in level of organisation and that more correctly accounts for the structural nature of relationships through time.

4.5. Flexibility

Flexibility is similar to communication in that it describes a norm of behaviour. Very little can be gained from the empirical literature on the effects of flexibility upon other relational constructs, as all operationalisations of flexibility have been in the form of composite indicators of relationalism.

The attribution of flexibility by relationship parties is likely to be based on two interrelated criteria. The first of these is the degree of flexibility attributed to the other firm with regard to activity links and resource ties. This can be measured by the events where changes are made to activity links and resource ties. The second criterion is a comparison between the relational flexibility norm and the flexibility norms of the industry. This criterion can be used to provide an externally verifiable assessment of relational flexibility. Thus, the events and processes of flexibility in the relationship may be assessed against industry norms.

In addition, as with open communication, there is "reciprocal conditioning" between a firm's attribution of flexibility to the other party and the level of flexibility at the relationship level. Thus, greater flexibility by one party may lead to an enhanced view of flexibility in the relationship by the other party, while a high level of flexibility at the relationship level has a positive impact on a firm's assessment of flexibility.

Macneil (1983) proposed that the limits to available flexibility in any given situation were imposed by wider society. This illustrates the way relational norms are embedded within social structures and cultures.

High levels of trust, commitment, role integrity and open communication must all necessarily interact positively with relationship flexibility.

4.6. Conflict Harmonisation

The relational norm of conflict harmonisation involves the firms in managing effectively complementary strategies, so as to maximise their joint efforts and coincidently reduce conflict. The main sources of change in a relationship are the parties or the wider environment. In either case, conflict harmonisation is likely to result in the enactment of functional conflict resolution processes that involve the parties in learning activities about themselves and their environment.

The norm of trust also impacts on the way conflict is managed in business relationships (Morgan and Hunt 1994). Where conflict is foreseen, appropriate action is taken to avoid conflict. Where conflict is not foreseen and trust is high, all parties are likely to work together to resolve the conflict. Kim's (2000) study makes an important contribution as it found that the use of coercive influence strategies as a result of asymmetry of power across a dyad was moderated by dyadic trust (β=-0.291, $p<0.01$) and dyadic relationship continuity (β=0.186, $p<0.10$). Thus, the nature of the channel climate, rather than power asymmetry, explained the use of coercive influence strategies. This is an important result for it indicates, following Fraser's (1999) hypothesis, that power and power use are distinctly separate constructs. Thus, trust allows parties of different power levels to harmonise conflict.

No association was found by Morgan and Hunt (1994) between relationship commitment and functional conflict. Yet, given the strong link between trust and commitment, it is likely that the norm of commitment will also impact on the way conflict is managed in business relationships. Thus, where conflict is not foreseen and commitment is high, it is likely that all parties will work together to resolve the conflict. In effect, conflict is harmonised by the collective orientation of the parties and this collective view takes precedence over whatever is generating a change or crisis.

It has been suggested that role integrity in a network also means that firms must protect the domain of other actors from internal competition (Achrol 1997). Domain is defined here as the "identity, markets, customers, technology, functions, and other normal responsibilities that define a member's role and significance as an independent entity as

well as a member of the network" (Achrol 1997, pp68). Thus, firms should not complete tasks identified with a partner. For example, a principal should direct customers to a distributor, rather than sell direct. Furthermore, when developing new relationships, firms should avoid parties carrying products that compete with those of a current network partner. To develop relationships that create domain conflict would reduce role integrity and signal a lower level of relational coordination between partners (Achrol 1997).

Maintaining role integrity as new relationships are developed is difficult in a complex environment where required resources may be controlled by firms with some domain similarity to existing network actors. It would seem that where a firm cannot avoid some domain conflict, partner firms must rely on trust, open communication and obvious reliance upon the partner's domain to safeguard partner role integrity.

It is known that relationship performance is enhanced when communication is open and where conflict resolution procedures are functional, constructive and harmonious (Mohr and Spekman 1994). Frazier (1999) also discusses the use of "influence" to achieve positive outcomes in channels. Again, the interaction between the norms suggests complex empirical possibilities.

The recent dyadic research of Kim (2000) adds significantly to the understanding of the inter-level effects of power use (ie firm influence strategies) on conflict harmonisation (ie dyadic norm). Kim (2000) found that a reciprocity effect operated between firms for coercive (suppliers $\beta=0.169$, $p<0.10$ and distributors $\beta=0.176$, $p<0.10$) and non-coercive ($\beta=0.199$, $p<0.10$) influence strategies. Kim (2000) also found that the use of coercive influence strategies has a negative effect on dyad level solidarity for suppliers ($\beta=-0.379$, $p<0.01$) and for distributors ($\beta=-0.228$, $p<0.05$). Finally, there was a negative effect between reciprocation of coercive influence strategies and dyad solidarity ($\beta=-0.492$, $p<0.01$) and a positive effect between non-coercive influence strategies and dyad solidarity ($\beta=0.326$, $p<0.01$). These results in combination support the concept of an actor bond structure composed of the joint understanding of dyad parties.

However, the use of power in the development of relational norms remains an area for further research. No attempt has been made in any studies to distinguish self from

collective interest. Rather, the usual approach is to consider conflict and cooperation, both of which are process-related constructs that reflect posterior views of self and collective interest (cf Skinner, Gassenheimer et al. 1992). This lack of research results from the difficulty in untangling self and collective interests within relationships. Any attempt to separate self and collective interests requires at minimum a dyadic study. However, dyadic studies have inherent problems (cf Kumar, Stern et al. 1993).

The attribution of power use by relationship parties with regard to activity links and resource ties is likely to be based on two interrelated criteria. First, a series of power use events and processes, assessable over a period of time with regard to self-interest versus collective–interest, need to occur. The second criterion is a comparison of relational power use norms with industry norms of power use. This comparison allows an externally verifiable assessment of relational power use.

Finally, there will also be "reciprocal conditioning" between relationship level and instances of influence use. The relational state has an impact on the assessment of influence use, as highly relational states are likely to lead to more positive appraisals.

4.7. Summary

The empirical work cited above suggests that relational norms interact in complex ways within inter-firm relationships. However, with the exception of Gundlach et al. (1995), all of this research used cross-sectional survey methodology so that any statement about cause and effect has relied upon an implicit causal model (Kinnear, Taylor et al. 1996). The problem is that complexity, evident from competing models, has limited the ability of researchers to make definitive statements regarding causality. This problem was clearly evident in Anderson and Narus's (1990) study of interaction between manufacturers and distributors.

A further issue in the above discussion is the inherent complexity of associations between relational norms and firm level constructs. Thus, the order of causality between constructs may not be determined from within the interaction arena; rather a more expansive perspective must be taken.

The solution to this problem of causality is to model relational norm constructs within a broader context that reflects the time dimension of relationships. In this way the

interaction between relational norms is studied within its appropriate context, as embedded within relationships. Such a solution recognises the importance of time as a background to all human interaction (Luhmann 1976) and acknowledges the continual references, in the discussion above, to the ways relational norms interact in time.

Such an approach requires that the antecedents and outcomes of relational norms be elaborated. The next section discusses the antecedents and outcomes of relational norm formation.

5. Relational Norms – Antecedents and Outcomes

The antecedents of relational coordination are necessarily positioned at the firm level of complexity, as it is firms that enter business relationships. Thus, it is actor intentions that are antecedents to relational coordination. One may argue that it is people inside the firm that propose and enact inter-firm relationships (cf Alajoutsijärvi, Möller et al. 1999), but that remains a separate study.

The intention of firms developing a strategy based on relational coordination may be examined from an economic and a social perspective. The IMP Relationship and Network approach provides an economic rationale for development of business relationships in the form of outcomes such as access to resources or markets (Håkansson and Snehota 1995). However, actor intention to achieve economic outcomes through relationship development inherently involves development of actor bonds of one form or another within social contexts. Consequently, social theory regarding norm development also provides insights into relational antecedents.

Thus, this section begins by discussing social theory on norm development (ie person and group levels of complexity) and integrating this with relational norm development in business markets (ie firm, relationship and network levels of complexity that necessarily subsume lower levels of complexity such as people, firms and relationships). This is followed by a discussion of the outcomes of relational coordination.

5.1. Antecedents of Relational Coordination

At the inter-personal level, Scanzoni (1979) describes relationship development as a change from self to collective interest. Gouldner (1960) originally proposed two modes of relationship development. The first involved the operation of norms, learnt through socialisation. The second involved interaction between the parties based on self-interest and reciprocity. Reciprocity was defined as a "mutually contingent exchange" with complementary juxtaposition of "right" and "obligation" between the parties (Gouldner 1960). However, personal relationships do not develop in a vacuum (Scanzoni 1979; Granovetter 1985), but grow through interaction in contexts linked to pre-existing societal norms (Scanzoni 1979).

This suggests that development of business relationships, at a more complex level, maybe be described as a progression from self to collective interest due to emergent interaction within the ambit of socially accepted patterns of interaction (ie norms). This emergence of collective interest, mirrors Macneil's (1980) concept that relational norms arise with a relationship.

It is clear from the IMP literature that firms enter business relationships to gain access to markets or resources held by other firms (Håkansson and Snehota 1995). This actor intention clearly demonstrates a degree of self-interest based on economic desire. However, the other party mediates rewards in business relationships (Dwyer, Schurr et al. 1987) so that some degree of collective interest is also inevitable.

Nonetheless, the nature and extent of collective interest and how it develops are not pre-determined. That is, whether the collective group develops into relational coordination based on joint control and equity between the parties, or whether the parties form a hierarchical-submissive relationship remains open to on-going interaction. This suggests that the interplay between self and collective interest, based on judicious use of power (Dwyer, Schurr et al. 1987), remains in dynamic tension and acts as an instrument of both stability and change within actor bonds.

However, the interaction approach, by itself, may ignore the context provided by society, its markets and its legal system. That is, without regard for the role of norms in shaping expectations (Dwyer, Schurr et al. 1987) and permitting complexity reduction

(Luhmann 1979), interaction alone is an incomplete explanation for development of relational coordination.

At the inter-personal level, Gouldner (1960) and Scanzoni (1979) believe that the change from self to collective interest is initiated by interaction in response to the societal norm of reciprocity. In the social sphere, two classes of reciprocity have been identified at two levels of complexity. The first is 'mutual reciprocity' where two parties benefit each other directly (ie A↔B) (Ekeh 1974). The second class is 'univocal reciprocity', which occurs when three or more parties reward each other through a complex chain (ie A→B→C→A) (Levi-Strauss 1969).

According to Gouldner (1960) mutual reciprocity arises from two aspects:
(1) the rewards bestowed by each party on the other, and
(2) the feelings of obligation created by the need to repay past rewards.
This first element of mutual reciprocity reflects behaviour based on self-interest that is mediated by the other party in a relationship. That is, by working together in self-interest each party is able to attain greater rewards for sharing. That the other party mediates reward in this way partially results in the second element of reciprocity. Thus, in a continuing relationship, the feeling of obligation to repay past debts leads to an open question of who is indebt and by how much (Blau 1964; Ekeh 1974). The uncertainty about level of debt results in continually reinforced feelings of obligation to repay and so a collective interest develops between the parties (Gouldner 1960).

Clearly, mutual reciprocity arises between firms in relationships. However, care must be taken in defining mutual reciprocity at the firm and relationship level and with regard to actor bond context. At the relationship level, when relational coordination exists, the self-interest aspect is subsumed under collective interest and the relational norm of trust (ie mutuality) is present. However, at the firm level, mutual reciprocity is composed of two interacting aspects, self-interest and the firm's acknowledgment of collective interest. Thus, levels of self and collective interest, at the firm level, are likely to be antecedents of relational norm formation.

One may conjecture that different firms may have various abilities in balancing the opposing forces of self and collective interest, leading to differences in relationship styles (cf Young and Wilkinson 1997). Wilson (1995) and Macneil (1980) suggest that

past relationship experience would impact on relationship development. It would seem that past experience in developing relationships would partially explain the ability of a firm to balance self and collective interest. This suggests that past experience in relational coordination would be an antecedent of relational norm development.

The second form of reciprocity, at the inter-personal level, results in actors rewarding others who are like them without any expectation that a benefit will be returned (Levi-Strauss 1969). Thus, there is a presumption that a group exists and that the individual has duties and rights with regard to the group, while the group has rights and responsibilities vis-a-vis the individual (Ekeh 1974). Consequently, univocal reciprocity is considered a strong force in developing social solidarity (Ekeh 1974) and the coincidental operation of mutual and univocal reciprocity is an important explanation of relationship development (Gouldner 1960, Ekeh 1974).

It seems likely that univocal reciprocity is present in distribution channels and business networks. At this higher level of complexity, examples can be found of firms rewarding each other with resources without thought for immediate self-gain. Thus, the provision of warranties to customers by distributors on behalf of principals is a form of univocal reciprocity where the principal expects to gain indirectly, but with no exact certainty. In different networks it is likely that actors have differing rights and responsibilities to each other and to the network. Thus, in the car industry different networks have warranties ranging from 12 to 36 months.

Univocal reciprocity does not directly impact on relationship development, but the interaction between univocal reciprocity at the network level and mutual reciprocity at the relationship level explains in part the nature of both actor patterns and actor bonds in a network. Thus, it is likely that the way the two forms of reciprocity intertwine in a network may explain the formation of different network and industry norms. These norms then provide a context and options for behaviour by firms in that network or industry, as well as define the permissible limits on behaviour (Ouchi 1979).

That distinct networks and industries are likely to have dissimilar norms suggests that the basis for relational norm development is different by network and industry, for each network provides a different context to guide relationship development. The embeddedness of relationships in networks and industries suggests a peculiar problem

in completing quantitative research into relational norm development. That is, sampling across industries and different forms of networks will hide aspects of the very phenomena being studied. Thus, random sampling must occur within, not across, groups such as industry and network types.

5.2. Outcomes of Relational Coordination

A number of surrogate measures of performance have been used in the literature in conjunction with relational norm constructs, including: level of cooperation (Morgan and Hunt 1994), degree of conflict (Anderson and Narus 1990; Morgan and Hunt 1994), relationship satisfaction (Anderson and Narus 1990; Skinner, Gassenheimer et al. 1992; Brown, Johnson et al. 1995), continuity or joint action (Anderson and Weitz 1989; Ganesan 1994; Zaheer and Venkatraman 1995) and various measures of performance which are based upon a single firm (cf Brown 1979; Heide and John 1988; Noordewier, John et al. 1990; Gundlach and Cadotte 1994; Lusch and Brown 1996; Doney and Cannon 1997; Cannon, Achrol et al. 2000). However, the first two of these are processes at work within a relationship and should not be considered as the final outcome of a relational coordination strategy. Furthermore, satisfaction and continuity or joint action are all measured at the firm level of complexity, suggesting it may not be an accurate measure of relationship performance.

The outcome of a relational strategy may theoretically be viewed at the firm level, or at the relationship level of complexity. At the firm level, one would consider the self-interest goals of each party and relate these to actual outcome so as to provide a measure of the success of a relational strategy. Thus, Frazier et al. (1988) and Kalwani and Narayandas (1995) suggest that changes in sales and profits are the most important measure of performance from a firm's perspective.

However, this approach ignores the results of interaction effects between the parties and the difficulties of separating these effects when there are questions of indebtedness. While measurement of firm level outcomes would be acceptable to firms in market or contract hierarchy situations, it seems performance should incorporate the result of action by both firms and the implied interaction effects of a relational strategy. This requires that performance should be measured at the relationship level. To-date the only studies to rely on performance measures that incorporate both parties in a relationship

are those based upon an IMP perspective (cf Holm, Eriksson et al. 1996; Aulakh, Kotabe et al. 1997; Holm, Eriksson et al. 1999; Wilkinson and Wiley 2000).

6. Summary

The context for relational coordination is an economically defined relationship. Thus, the antecedents of relational coordination must be defined at the level of the firm wishing to enter a relationship, while outcomes are best defined as economic performance at the relationship level. Between input and output, the two firms necessarily interact, creating the particulars of relational coordination that support activity links and resource ties. This configuration of an input-process-output model effectively provides a view of relationship development that can be operationalised using cross-section survey methodology.

However, to account for the peculiar mode of relational coordination that exists within each relationship requires more than a theory of how one firm joins a relationship to gain the advantages of interaction. What is required is a model of two firms interacting, so that an actor bond structure at the dyadic level can be elaborated. This is the object of the next chapter.

Chapter Three – Actor Bonds and Relationship Types

The development of a theory of relational coordination necessarily involves explanation of interaction within a norm framework. In the IMP literature, actor bonds operate as a framework for actor interaction. The first section of this chapter presents a framework of actor bonds situated within the three high-order coordinating mechanisms. This framework provides theoretical reasons for the development of types of actor bonds depending upon the situation. Within this framework, the actor bonds associated with relational coordination are distinguished leading to conjecture about the formation of relationship types.

The second section of this chapter examines the structural nature of relational coordination in networks so as to reveal the composition of actor bonds. This discussion highlights the importance of difference as well as similarity in each firm's view of actor bonds, even when operating in relational coordination mode, suggesting that different types of relationships can develop.

1. Actor Bonds and Coordinating Mechanisms

Business firms working together have been described as dyads (Bonoma, Bagozzi et al. 1978). A dyad is defined as a "group of two" (Wilkes and Krebs 1985) and thus represents two levels of interacting organisation: firms and relationship. A question arising is whether relationships are composed of two interacting models of firm behaviour or whether an emergent relationship directs the underlying models of firm behaviour? Qualitative research indicates that the answer is both to some degree, depending on the length and nature of the relationship, and this leads to different types of relationships (cf Ford and Rosson 1982).

However, quantitative research in this area has been difficult because of the lack of conceptual models explaining the change in relationship quality as firms move from simple inter-firm exchange to dyad level organisation, where actor bonds condition interaction. The discrepancy between these two types of interaction suggests that the way forward is to focus on constructs that explain differences. The high-order

coordination mechanisms explain significant variations in actor bonds. The remainder of this section discusses these differences and highlights the implications.

1.1. Actor Bond Classes

The nature of interaction between dyad members may be, at its simplest, characterised by two dimensions: degree of attraction and strength of interaction (Cook and Emerson 1984). Thus, one may broadly characterise dyads into four classes (see figure 3.1). Care should be taken in interpreting this simple schema as the linkage between any firms involves a mixture of both self and collective interest. Thus, positive global attraction and strong interaction should not be viewed as wholly positive interaction, for the mixture of self and collective interest suggests a more complex outcome than this simple scheme allows.

Figure 3.1 Dyad Classes

		Global Attraction	
		Positive	**Negative**
Interaction Strength	**Strong**	Strong and positive	Strong and negative
	Weak	Weak and positive	Weak and negative

When these four classes are viewed within the coordination mechanism framework, different forms of actor bonds are quite clear (see figure 3.2). That is, positive attraction combined with strong interactions defines either relational or contract-hierarchical coordination, while weak attraction and weak interaction defines market coordination. Levels of negative attraction equate with classes of competition in a market. Thus, strong and negative interaction refers to close competitors, while weak and negative interaction equates to distant competitors.

Figure 3.2 Dyad Classes and Coordination Mechanisms

		Attraction	
		Positive	**Negative**
Interaction Strength	**Strong**	Relational and Contract-hierarchy Coordination	Strong Competitors in a Market
	Weak	Market Coordination	Weak Competitors in a Market

When dyads are viewed within the Coordination Mechanism Framework (see figure 3.2), it is apparent that relational coordination must begin with positive attraction and weak strength of interaction and be transformed overtime so that interaction becomes

strong. This mirrors Scanzoni's (1979) transformation from self to collective interest and the shift from interaction between firms to dyadic interaction. The problem is that this model does not allow for distinction between relational and contract-hierarchical coordination. Thus, relational norms must be integrated with this model to separate the coordination mechanisms.

The resolution of this problem was presented by Alajoutsijärvi et al. (1999). The next section discusses this more detailed explanation.

1.2. Elaboration of Actor Bond Classes by Coordination Mechanisms

A framework of relationship types was presented by Alajoutsijärvi et al. (1999) (see figure 3.3, 3.4 and 3.5) that builds on previous work by Campbell (1985) and Möller and Wilson (1995). This framework has a number of strengths. First, it is conceived at a relationship level of complexity so that it efficiently indicates the different nature of interaction between parties. Second, the level of aggregation is implicitly included in the framework. For example, trust can be either firm level or relationship level (see figure 3.5 Trust Row). Third, it incorporates and suggests dimensions that usefully separate the three coordination mechanisms. In particular the framework picks out the distinctions in the locus of control and the way power is used (see figure 3.3).

However, there exists a major weakness in the associated diamond shape model (figure 3.4), for no distinction is made with regard to the level of organisation. Thus, the horizontal axis represents a continuum from market to relational coordination, or firm to relationship level of organisation, without showing the transition in level of organisation. Yet it is the transition to jointly determined coordination that defines relationship organisation (Dwyer, Schurr et al. 1987). A similar problem can be identified with the vertical axis, where the transition to buyer or seller dominance occurs as a continuum rather than a shift in organisation.

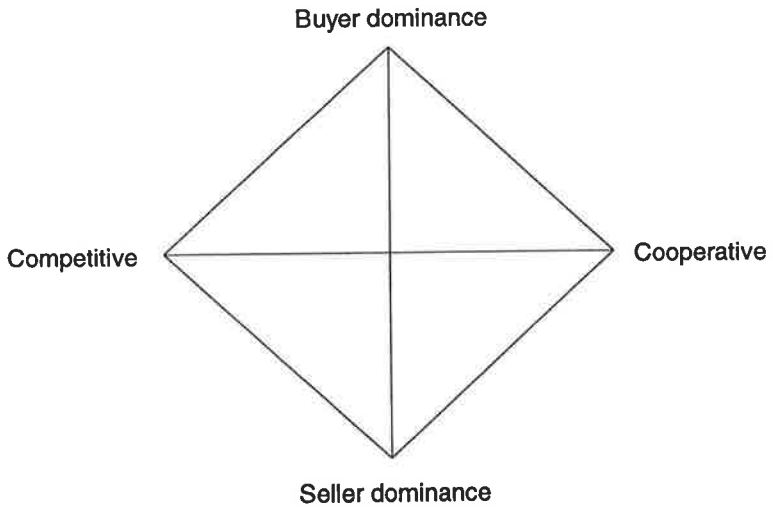
Another issue with the framework, although not so important, is the use of "cooperation" as the definition of relational coordination. As was noted earlier, contract-hierarchies also rely on a degree of cooperation between the parties. While this is only a minor point, it must be made, for clarity of constructs is essential at this level of complexity. In this thesis, 'relational coordination' is used to designate Alajoutsijärvi's et al. (1999) construct of cooperation.

Figure 3.3 Characteristics of Relationship Strategies

Mode of behaviour	Market Coordination	Relational Coordination (formerly Cooperative)	Dominance	Submission
Number of alternative partners	Several parties which are played against each other	Attempt to have one partner Purchasing/marketing concentrated on a certain partner	One or few partners depending on the functional benefits they can provide	Submission to one supplier/customer
Rules of the relationship	Based on general norms of trade and law	Created in cooperation	Dominating party creates the rules	Submission to counterpart's rules
Expectations of relationship	No mutual future-orientation, transactions in focus	Attempt to foresee common future problems and solve then together	Attempt to foresee own future problems and solve them in an egocentric fashion	No possibility to foresee future problems
Use of power	Negotiation power used during transactions until expectations are reached	Cautious and sensitive use of power	Potentially one-sided use of power	In no position to use power

Source: (Alajoutsijärvi, Möller et al. 1999)

Figure 3.4 Diamond Model of Relationship Types



Source: (Alajoutsijärvi, Möller et al. 1999)

Figure 3.5 Attributes of Relationship Types

Ideal Relationship	Market (Competitive in original)	Relational Coordination (Cooperative in original)	Buyer dominance	Seller dominance
Motivation to invest in relationship	Low (both)	High (both)	Buyer low, Seller high	Seller low, Buyer high
Capability	Both are seeking a narrow range of capabilities from counterpart. Capabilities are similar to those of alternative partners	Both are seeking a wide range of capabilities from counterpart. Capabilities are also unique compared to those of alternative partners	Buyer has a wide range of capabilities which interest seller. Capabilities differ markedly from those of alternative partners.	Seller has a wide range of capabilities which interest buyer. Capabilities differ markedly from those of alternative partners.
Particularity	Relationship is not particular for either party	Relationship is particular for both	Relationship is particular for seller, not for buyer	Relationship is particular for buyer, not for seller
Trust (Mutuality in original)	None	Both	Seller has, buyer has not	Buyer has, seller has not
Inconsistency between parties view	None	None	None	None
Commitment to other party	Neither has	Both have	Buyer has when there are no other alternatives	Seller has when there are no other alternatives
Dependence on other party	Both are independent of each other	Both are dependent on each other	Seller is dependent on buyer	Buyer is dependent on seller
Connectedness to alternative partners	High negative	Low negative	Low for seller, High for buyer	Low for buyer, High for seller

Source: (Alajoutsijärvi, Möller et al. 1999)

An interesting outcome of separating actor bonds into pure coordination mechanism classes is the way that the normative framework, within which interaction occurs, varies by situation (see figure 3.3 "Rules of the relationship"). This variation in normative framework has interesting implications for the degree of freedom to form different types of inter-firm linkages. It seems likely that larger normative groups and higher levels of power asymmetry lead to fewer alternate linkages (ie Macneil's (1980) "propriety of means" or "flexibility"). Thus, as pure market coordination is defined within a society's normative framework, the ability to vary actor bonds between parties is limited. This suggests that pure forms of market coordination leave little room for

variations in actor bonds and thus, that limited ability exists for firms to form different types of market linkages.

For pure hierarchical coordination, the normative framework imposed by the dominant member defines actor bonds and the other party has no option but to acquiesce in some way. This suggests, in comparison to market coordination, a contract hierarchy situation would provide more opportunity for different types of linkages between firms, as each dominant firm will have its own preferred mode of operating inter-firm relations. Lastly, with pure relational coordination, where power use is symmetrical, the opportunity for different relationship types is greater as no party is able to control joint interaction.

That relational coordination leads to many different types of relationships, and that these result from actor intention and the reciprocal conditioning by actor bonds formed in the relationship, has important theoretical and methodological implications. To-date, the literature has not explored the influence of this interaction within a normative framework in a quantitative manner. In part, this is explained by the difficulty of dyadic research, but it also results from a lack of theory concerning how firm interaction leads to dyad formation.

1.3. Summary

While it is now clear that actor bonds operate differently in each coordination mode, it remains unclear how particular relationships develop their own form of relational coordination. That development through interaction can happen in many ways makes this even less clear. However, just as different forms of coordination shape actor bonds, so differences in actor bonds will shape the interaction between firms that are coordinating relationally. Thus, one must examine actor bonds to understand the different forms of relational coordination, or interaction leading to various relationship types. The next section addresses the way network structure and position impact on a firm's view of actor bonds. This discussion begins to provide conceptual understanding of how firm interaction leads to dyad formation.

2. Interaction to Form Actor Bonds

It is natural that two firms in a dyad should have different views of that relationship (Anderson, Håkansson et al. 1994). Thus, different types of relationships are bound to exist; depending on whether motives for joint action are similar, or different, and on the preferred manner of operating social and economic environments within a relationship. In fact, as will be shown below, the differences between parties are inherent and a valuable aspect of any relationship. It is the differences as much as the common goals that maintain the relationship, for it is complementary differences that attract. Yet, similarity is equally important, for too great a difference regarding acceptable interaction modes is likely to be dysfunctional. In this vein, it is known that closeness in working relations between supplier and buyer increases sales and market share performance (Nielson 1998).

Therefore, both differences and commonality must be explained to understand a relationship. Differences arise from a firm level as well as from network contexts (firms, industry and society), while commonality arises from a firm level and from interaction to achieve the same goals (Anderson, Håkansson et al. 1994). However, apart from actual differences, it is known that variations in perceptions also create differences. These differences of perception may logically relate to the actor bond or to the other party.

The remainder of this sub-section is divided according to the sources of commonality and difference; with sections on commonality, firm level difference, network level difference and perceptual differences.

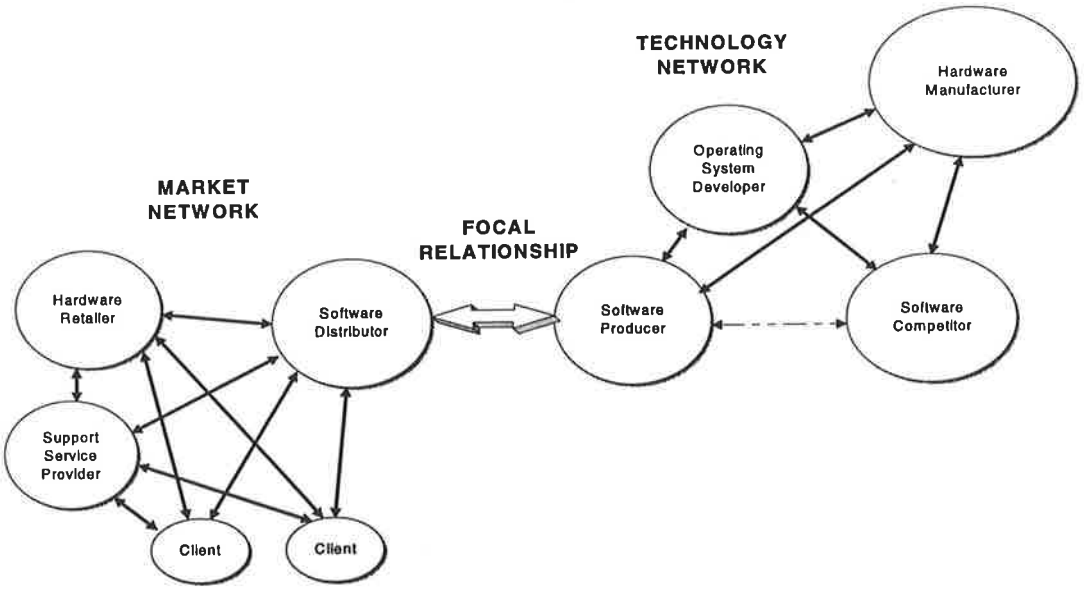
2.1. Commonality

Commonality can be viewed to comprise at least two dimensions. The first is the level and importance of a common economic purpose. Without a common goal, a business relationship cannot exist (Heide and John 1992; Wilson 1995). The degree of common purpose can be seen as a result of network positioning. A relationship is composed of complementary differences in network identity, at the juxtaposition of two networks (see figure 3.6). This complementarity is the logic that creates the focus relationship,

with a common purpose found at the network level. The common economic purpose at a network level represents the collective interest in the dyad.

For example in the software industry, when a producer and distributor settle on an exclusive distribution agreement, they work jointly to maximise sales. The producer must continue to research and develop the software to meet new hardware configurations and customer needs, while the distributor must build market share in a geographic area by employing sales staff and setting up promotional events and activities. Both firms, however, must work towards profit from sales to final customers. Thus, common economic purpose at the network level, where the dyad is a unit, allows each firm to balance their self-interest against collective interest.

Figure 3.6 Focal Relationship Joining Two Networks



The second aspect of required commonality is an acceptable degree of similarity in the actors' intentions regarding interaction and the formation of actor bonds. For example, if one firm interacts in market and the other in relational mode, the relationship is likely to change dramatically or to end.

2.2. Firm Differences

When firms seek goals within a complex business environment by entering into dyadic relationships, they do so for pragmatic reasons. Each firm is necessarily different: with separate histories, dissimilar resources and capabilities and different work cultures

(Håkansson 1982). In addition, there are differences in the success of past joint action (Wilson 1995) and in the relative importance of the current strategy for joint action (Håkansson and Snehota 1995; Wilson 1995). Thus, there is bound to be some divergence in viewpoint between dyadic partners about how interaction should proceed.

2.3. Network Differences

From a network perspective, firms enter focus relationships to gain access to resources and/or to other relationships (Håkansson and Snehota 1995). It is the juxtaposition of two distinct networks that creates the focus relationship (see figure 3.6), with each firm seeking some resource produced within the other network and/or access to relationships within the other network (eg customers). Thus, the software distributor's network in figure 3.6 is incomplete until additional technology networks are added, while the software producer's network incomplete until additional market networks are added.

It is evident from this example that the context of each firm, within its respective network, is necessarily different. This variation in network context was recognised as one aspect of network identity distinguished by Anderson et al. (1994). Given variation in context and network type, it is implausible to expect each firm to approach relationships in exactly the same manner.

2.4. Perceptual Differences

One of the confounding issues in dyad interaction is the effect of differences in perceptions between dyad partners. Theoretically, disparity may arise from actual differences between attributes, as well as incorrect perceptions, of either the other party or the nature of the actor bonds. Actual differences are to be expected given the discussion above. However, perceptual differences are also to be expected given the limited ability of key informants to report on supra-person level phenomena.

There are logically three scenarios with regard to perceptual difference. First, when differences in perceptions of the other party exist, both parties will necessarily incorrectly perceive actor bonds. Thus, lack of closeness implies poorly defined actor bonds. Incorrect perceptions of this kind are likely to be acted upon, until some event makes the error apparent. Such a scenario would occur in the early stages of a relationship and in the mature phase where the partners have been moving apart. These

situations equate to Ford and Rosson's (1982) "new", "static" and "inert" relationships. They may also apply to "troubled" relationships, but these clearly can have other causes such as environmental change.

The second scenario is where both parties perceive actor bonds correctly and therefore have clear perceptions of the other party. In this case, different levels of closeness would be apparent as actor bonds move from market to relational coordination. Ford and Rosson (1982) would consider such relationships to be "growing".

A third scenario is where each party correctly perceives the other, but one or the other has incorrect perceptions of the actor bonds. This may occur simply due to the problems of interpreting supra-level constructs from a human perspective (cf Luhmann 1979).

Each of these scenarios highlights the importance of actual, as well as perceived, differences in describing the nature of relationships. These distinctions have not been made previously within the actor bond construct. Yet, these differences would seem to explain the different forms of relationship identified qualitatively by Ford and Rosson (1982).

2.5. Summary

The importance of actor bond structure, based on similarity and difference, in explaining the nature of relationships has a number of important consequences.

First, it suggests a major problem with past quantitative research relying on key informants from only one side of a dyad. This research must necessarily over report the levels of relational coordination, for the respondent does not know for certain whether the other party is behaving relationally or not.

Second, it suggests that the approach to inter-firm measurement by Kumar et al. (1993) would actually reduce the veracity of dyadic research. Briefly, these authors suggested an averaging of dyadic data across the two firms, except where the difference was extreme. In the case of extreme difference Kumar et al. (1993) required a second approach to the firms where they reach a consensus answer (presumably that reflecting the more powerful partner). This method implies that differing views of a relationship

cannot exist; yet the structural nature of relationships strongly suggests that differences are as important as similarities.

Third, it suggests that different types of actor bond structures can exist and this means there are different forms of relational coordination. This has important research implications, for the existence of different forms of relational coordination means that much past research must be re-interpreted to account for the importance of difference in creating structure at the inter-firm level of aggregation. Furthermore, dyadic research is required to measure differences.

3. Conclusion

This chapter has highlighted the role of actor bond structure, composed of similarity and difference across a dyad, in explaining relationship types under conditions of relational coordination. It would seem that different classes of relationships result from the inherent differences and similarities between parties in dyads. No past research has quantitatively examined relationship types. Anderson and Narus's (1990) study examined the deviations in relational coordination constructs that resulted from variations in role. They found different models for manufacturers and distributors, but this analysis was not dyadic as each party was separated from its partner for analysis.

No quantitative studies have investigated interaction constructs between both dyad partners. This has remained a significant gap in the literature since the importance of dyadic interaction was flagged in the 1970's and 1980's (Bonoma, Bagozzi et al. 1978; Håkansson 1982).

The next chapter proposes two models. First, a "collaborative interest" model of firm interaction based on self and collective interest that explains the role of relational norms in effecting relationship performance. This model allows the identification of relational coordination constructs that may be useful in explaining the formation of actor bonds. The collaborative interest model, in turn, allows development of a second model, at an actor bond level, that explains relationship types under different conditions of relational coordination.

Chapter Four – Models and Propositions

This chapter presents three main conceptual models and their associated propositions. The first model summarises the proposed relationships between relational coordination constructs and relationship performance from a firm's perspective. Within the thesis, this model serves the purpose of confirming constructs that explain relational coordination. Next, a model of interaction possibilities given different coordination mechanisms is presented. In conjunction with the first model this interaction possibility model allows development of a third model, at the dyadic level. The dyad level model proposes different relationship types based upon various actor bond structures. Propositions are developed and presented according to the first and third models.

1. Relational Norms and Relationship Performance

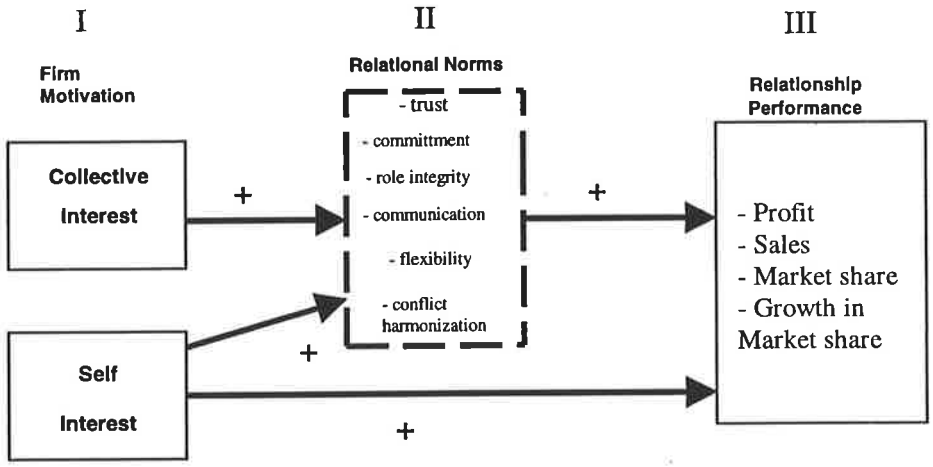
Firms seek profit and so, in the final analysis, act in self-interest. Yet, the discussion in chapter Two indicated that relational norms develop as firms work together on mutually beneficial outcomes. This paradox is explained, in business relationships, by the coexistence of self and collective interest (cf Skinner, Gassenheimer et al. 1992; Young and Wilkinson 1997). Thus, self-interest is moderated by the need to work collectively. That is, relational coordination acts in conjunction with self-interest and partially supplants a firm's economic goals.

The complexity of interaction between self and collective interest in business relationships means that research must be based upon compound models. The collection of motivations and processes that enable firms to achieve relationship performance by joint action can be represented as a three level model (see figure 4.1). In this model, firms are motivated by self and collective interest to work together (ie Level I), with the result that they contribute resources and activity to a relationship. As the firms work together (ie Level II), relational norms develop through a process of relational coordination. The final result of joint action is the performance of the relationship (ie Level III). Thus, a collaborative interest model is proposed as discussed in the next part.

1.1. The Collaborative Interest Model

Firms enter into business relationships to gain access to the resources and relationships of their partner firms (Håkansson and Snehota 1995). These basic motivations represent both self and collective interest, while the success of a firm in accessing the resources of another depends in part on need, experience and ability in the relationship building process. Together the strengths of these motivations and abilities influence the extent of relational norm development within a specific dyad (see figure 4.1).

Figure 4.1 Collaborative Interest and Relational Coordination leading to Relationship Performance *



** Note: The model is at two distinct aggregation levels: Firms (ie actor intention) and Relationship (ie relational norms and performance).*

Relational norms interact to provide the level of complexity (Macneil 1980) and differentiation in time within a relationship (Luhmann 1979). While relational norms are not the only element of inter-firm interaction, their nature provides for variations in the level of response that firms can make to environmental change and change within the participating firms (Macneil 1980). Thus, relational norms act as mediating variables in explaining the performance of relationships, given the motivations for entering into the relationship. Higher development of relational norms implies a more complex relationship and the potential to choose from a wider set of possible responses so that a firm and a relationship have the potential to be more successful.

However, success in commercial activity is best indicated by market performance goals. An important element of the model, therefore, is the objective measurement of relationship outcomes. This has two aspects. First, relationship performance is conceptualised at a dyad level and so acknowledges the full outcomes of a relationship strategy and interaction between the parties, rather than only the self-interest of one party. This is an important theoretical and methodological distinction for it recognises the purpose of relationships as a joint outcome. Second, rather than reliance on surrogate indicators, such as level of satisfaction or cooperation within a relationship; performance is measured in economic terms (ie profit, sales, market share and growth) at the relationship level. This measure of performance is consistent with the purpose of economic activity.

The discussion in the remainder of this section uses the four main sets of constructs presented in figure 4.1 to present testable propositions regarding the collaborative interest model.

1.2. Self-Interest

The mutual alignment of motivation to conduct joint activity involves the recognition of the role played by both self-interest and collective interest. At the heart of a joint action strategy is an interest in maintaining future exchange based on expected net gains (Dwyer, Schurr et al. 1987). Thus, self-interest is evident as an essential motivation for firms to interact and the expectation of self-interest is economic gain for the firm.

While self and collective interest are essential for relationship development, the association between self-interest and the development of relational norms is rather ambiguous. The discussion in chapter two regarding reciprocity and interaction suggests that it is collective interest that leads to relational norm development, rather than self-interest. However, separating self and collective interest can be extremely difficult. For example, self-interest is likely to be required to elicit collective interest and collective interest may lead to furthering self-interest, but none of this necessarily means there is an association between self-interest and the development of relational norms.

Thus, as a first step in elaborating what is likely to be a very complex association between self and collective interest, the following propositions are submitted:

Proposition 1: Self-interest is positively associated with relationship performance in situations of continuing joint activity.

Proposition 2: Self-interest is positively associated with the development of relational norms.

1.3. Relationship Performance and Relational Norms

As was discussed in chapter two, where relational norms develop in a relationship the possibilities for greater role integrity (Macneil 1980) and flexibility (Heide and John 1992) increase in line with commitment and trust (Morgan and Hunt 1994). These coordination processes are enhanced by open communication (Mohr and Spekman 1994; Mohr, Fisher et al. 1996) and conflict harmonisation (Boyle, Dwyer et al. 1992; Mohr and Spekman 1994) so that the possibilities for better relationship performance are greater. Improved relationship performance may come from any and all of these relational norms acting alone or in unison.

Proposition 3: Relational norm development is positively associated with relationship performance.

1.4. Relational Norms and Collective Orientation

The discussion on the antecedents of relational norm development, in chapter two, suggests that the ability to work collectively is influenced by at least two factors, past experience and intention to work jointly in the future.

1.4.1. Past Experience

Past experience in other relationships will provide firms with knowledge and familiarity on how to manage the tension between self and collective interest. In collective activity, the other party mediates decisions and rewards (Dwyer, Schurr et al. 1987) and the ability to work with the other party should influence relational norm development. Firms with more experience in joint activity are more likely to have the skills and understanding of how to work with a partner in developing relational norms.

Proposition 4: Past experience with joint activity by a firm will be positively associated with relational norm development.

1.4.2. Future Orientation

Firms enter into relationships with suppliers, customers and significant partner organisations based on strategic plans (Borys and Jemison 1989; Ford 1990; Axelsson and Easton 1992). These strategic plans, in contrast to level of past experience, represent a future orientation towards joint action. The level of strategic intent to work collectively suggests a variation in the degree to which relational norms may develop. Thus, the stronger the desire for long-term joint action, the more likely that higher order relational norms will develop.

Proposition 5: More important and long-term orientation towards a relationship will be positively associated with the development of relational norms.

1.5. Summary

A collaborative interest model of relational coordination has been proposed that is composed of self and collective interest at the firm level, with firms conducting joint action to achieve relationship performance. In this model, collective interest does not influence performance directly, but is mediated through processes of relational norm formation. Self-interest, however, operates on relationship performance through individual firm activities and also by means of relational norm formation. From this model five propositions have been developed. How these will be empirically tested is discussed in chapter five.

While this collaborative interest model of relational coordination partially accounts for interaction in that outcome is at the relationship level, it does not explain the effects of interaction between relational norms at the process stage nor the interaction between the different motivations of firms at the input stage. To account for interaction between two firms' motivation levels and coordination processes requires a dyadic model.

The next section of this chapter develops a dyadic model of relationship performance based on differing actor bond structures, by aggregating the collaborative interest model developed in this first section.

2. Relationship Types based on Actor Bond Structure

The literature discussed in chapter three suggests that different types of relationships exist according to the actor bond structure that develops within each union. It was suggested that actor bond structure represents actual, as well as perceived, differences and similarities between both parties in the way they prefer to operate economic and social relations in business environments. Thus, it is likely that a number of relational coordination types exist, according to the different natures of actor bond structure that can be developed. Importantly, an examination of actor bond structure requires a dyadic perspective to account for the differences and similarities in each party's view of a relationship.

The remainder of this section is divided into three parts. The first part presents an elaborated model, building upon Alajoutsijärvi et al.'s (1999) conception of actor bonds organised according to high order coordination mechanisms. The purpose here is to display the role of context, in shaping actor bonds, and the way that actor bond structure maybe conceptualised. The second part of this section presents a specific model of actor bond structures that applies when relational coordination is at work within a dyad, rather than in the context of market or contract/hierarchy. Finally, in the third part, propositions based on the dyadic model of relationship development are presented.

2.1. Interaction Possibility Space Model

Given the problems with Alajoutsijärvi et al.'s (1999) model (see chapter three), an actor bond framework is proposed based on the three ideal coordination mechanisms (Bonoma 1976; Perrow 1981; Powell 1987; Bradach and Eccles 1989; Powell 1990; Weitz and Jap 1995) (see figure 4.2). This model of an "interaction possibility space" (IPS) is conceptualised at the dyad level and accounts for shifts in level of dyad organisation. Thus, in figure 4.2 the horizontal surfaces portray a "coordination space" that describes the many combinations of preferred coordination modes available to firms, while the vertical planes represent the "interaction zone" between dyad parties.

The horizontal coordination space is defined by the three ideal coordination mechanisms, each existing at various levels of organisation aggregation as defined in

the top section of figure 4.3. That is, market coordination occurs with interaction *between firms* in a socially and economically defined context, while hierarchical coordination occurs *within a firm* according to legally and socially defined rules. Relational coordination, however, occurs *within a relationship*: that is within an economic and social context created by the two interacting firms. Interaction at these ideals is as given in the lower half of figure 4.3.

Figure 4.2 Interaction Possibility Space

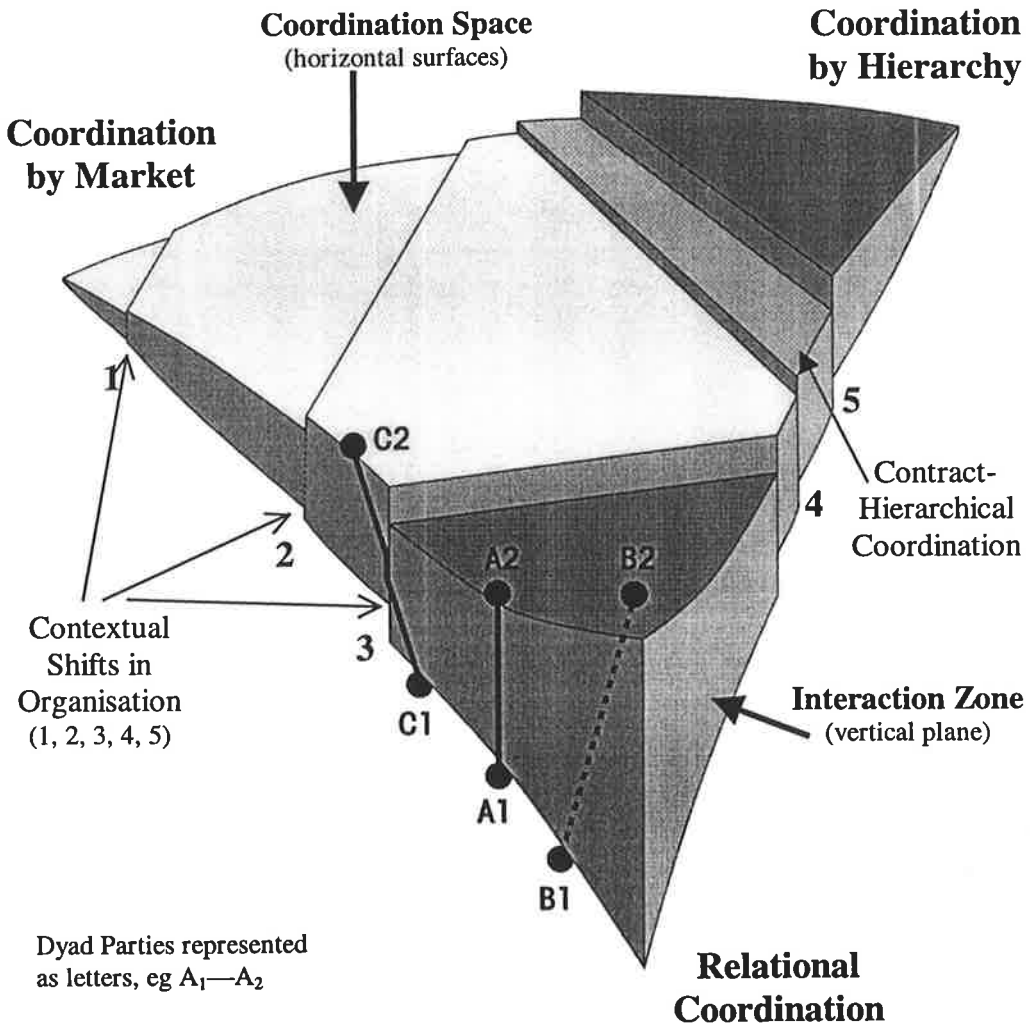


Figure 4.3 Ideal Coordination Contexts and their Ideal Actor Bonds

Coordination Context	**Market Coordination**	**Relational Coordination**	**Contract Hierarchy Coordination (Dominance and Submission)**
Level of organisation	Firm	Relationship	Supra-firm Master and slave
Context	Market within host society	Relationship in economic and social network	Contract within legal framework of host society
Time horizon	Short term	Long term	Long term
Control Locus	Within the firm	Relationship level, between the firms. Joint control	Within the dominant firm
Number of alternative partners	Several parties which are played against each other	Two firms with no competing provider	One or few partners depending on the functional benefits they can provide, with partner submissive
Dependence on other party	Both are independent of each other	Both are dependent on each other	Dependence varies
Particularity	Relationship is not particular for either party	Relationship is particular for both	Varies by dependence
Connectedness to partner (refer to figure 3.2)	Weak positive	Strong positive	Strong positive
Connectedness to alternative partners	Strong or weak negative	Strong or weak negative	Varies by dependence
Ideal Actor Bonds	**Competitive**	**Relational**	**Control/Power**
Rules of the relationship	Based on general norms of trade and law in society	Created in relationship	Dominating party creates the rules followed by submissive party
Expectations of relationship	No mutual future-orientation, transactions in focus	Attempt to foresee common future problems and solve then together	Dominant firm attempts to foresee future problems and solve them in an egocentric fashion. Submissive firm unable to foresee future problems
Use of power	Negotiation power used during transactions until expectations are reached	Cautious and sensitive use of power based on equality	Dominant firm has potentially to use power in own interests. Submissive firm is in no position to use power directly.
Trust	Limited	Strong within relationship	Dominant partner has limited trust Strong and no choice by submissive partner
Commitment	Limited	Strong within relationship	Both parties committed
Role integrity	Limited	Complex	Degree of complexity
Communication	Closed	Open	Degree of openness
Flexibility	Limited	High	Degree of flexibility
Dyad perspective inconsistency	None	None	None

The result is that each ideal coordination point is anchored in a different dimension according to its level of aggregation and social/legal context, so that a three dimensional space is defined. These three ideals provide three axes that allow plotting a firm's preferred mixture of mechanisms for coordinating a specific dyadic interaction, as well as the preferred coordination mode of the other firm in the exchange (eg A_1—A_2). Each of the three axes begins at an apex (ie 100%) and then perpendicularly bisects the opposite side (ie 0%). While an "interaction zone" (explained shortly) separates A1 and A2, their relative position in the coordination space is given by plotting a vertical line to the coordinate axes defined by the three ideals. This means firm C_2, which is above the direct line between relational and market coordination, prefers almost equal proportions of relational and market coordination while maintaining absolute zero on the hierarchy dimension in the way it interacts with C_1. In addition, it is possible to say that while firms A_2 and B_2 prefer relational coordination, A_2 is more market oriented in its preferred dealings with the other firm than is firm B_2, which is more hierarchical.

The significant steps shown in the coordination space represent "contextual shifts" as organisation moves from one form to another. Thus, contextual shift "1" represents a preference change from discrete to continuous market transactions, while shift "2" denotes a change from market to plural forms of coordination. Contextual shift "3" represents a significant change in coordination dimensions, with acceptance by the parties that they are involved in a relationship situation where actor bond structure is based upon equity, trust and co-determined joint action.

Contextual shift "4" and "5" represent the change from plural coordination modes to contract-hierarchy and then pure hierarchy respectively. Thus, between contextual shift "4" and "5" may be found firms whose preferred coordination mode is contract-hierarchy, while between shift "5" and the ideal of hierarchy coordination are situations where firms are in either company-subsidiary relations or there is complete internalisation of a business unit. This hierarchical region of the IPS is distinguished from the remainder by the strong influence of power, which apportions responsibilities and rights that constrain interaction.

However, the purpose of the model is only evident when dyadic parties are considered. In figure 4.2, the vertical "interaction zone" provides a view of the possible freedom of interaction that results from two firms' preferred modes of coordination. There are three aspects to be contemplated with regard to the "interaction zone".

First, the depth of the interaction zone portrays the varying possibilities inherent with interaction in each coordination mode. Thus, the interaction zone increases in depth, as one moves from one-off transactions to continuing transactions and onto plural coordination modes, as a result of the increasing number of options provided by facets of relational and hierarchical coordination. Conversely, as dyads approach hierarchical coordination the number of interaction options is again constrained by the more powerful party seeking their own ends. However, as dyads move deeper into relationship mode the influence of societal norms and legal rules are removed and the agreement between parties allows wider parameters of interaction so that there is increasing scope for flexibility in interaction as well as differentiation in time between actor intent, activities, resource use and relationship outcomes.

Second, an interaction zone always separates both dyad parties, for dyadic interaction is necessarily two fold (Buber 1923). That is, one party may not act without the simultaneous action of the other party, whose behaviour is also necessarily two fold. Specifically, to act, each party relies upon knowledge of the possible action of the other (Giddens 1979), as well as their own intentions. This two fold interpretation results in an actor bond structure being created between them. Thus, even at the market and hierarchy ideals, when there is no distinction between the parties' preferred coordination modes and the possibilities for interaction are minimal, there remains an interaction zone (as represented by the small vertical lines of the interaction zone at these ideals).

Third, the interaction zone allows consideration of similarities and differences in preferred coordination mode between parties. Thus, the interaction zone between dyad parties provides a measure of actor bond structure. For example, similarities in coordination mode (eg A_1---A_2) would equate to close actor bonds of a relational form, while differences in coordination modes (eg C_1---C_2) would display dissonance between dyad parties. In each case the actor bond structure would lead to variations in the way the firms interact. The potential for dissonance between parties raises the

question of how large might be the difference in coordination modes before a dyad is dysfunctional?

The IPS model provides a number of clear advantages. First, the interaction possibility space is defined as likely forms of actor bonds resulting from interaction between two parties. Thus, the structure of actor bonds results from two aspects: (1) each firm's preferred mode of coordination of that relationship, and (2) the interaction between these preferred modes of coordination. Importantly, this recognises the inherent embeddedness of economic activity in social structures.

Second, levels of aggregation are explicitly considered so that the context and nature of interaction are clear. For example, the context for actor bond structures based on contractual-hierarchies is the legal framework of the host society; while for actor bond structures using relational coordination, the context is the relationship within an economic and social network. Locus of control is also clearly distinguished with actor bond structure under contractual hierarchies being organised by the dominant firm, while for relational coordination it relies upon joint control.

Third, the different social nature of coordination mechanisms and mixes of these is evident from the ideals (see the bottom section of figure 4.3). Furthermore, the potentially large range of interaction possibility space between these ideals (figure 4.2) provides for the complexity envisaged by the thesis that there are plural forms of non-market governance (Bradach and Eccles 1989; Cannon, Achrol et al. 2000). That, is the central area of the space allows for various combinations of market, hierarchical and relational coordination.

Fourth, this analytic framework provides a clear understanding of how actor bonds are transformed under different coordination contexts. Thus, when actor bonds form within relational coordination, they are partially disconnected from market and hierarchical norms that are conditioned by society at large. This disconnection from wider society, portrayed by "contextual shifts" in figure 4.2, allows the relationship parties to organise their affairs in a more complex manner than is available within market and hierarchy contexts.

Finally, relationships with high degrees of dissonance are accounted in the "interaction possibility space" by the possibility of interaction occurring between firms with wholly

different preferred coordination modes for that specific relationship. Thus, dyad parties C_1C_2 have an actor bond structure with high levels of dissonance as a result of C_1 preferring to use more relational coordination and C_2 preferring more market coordination. The contextual shift between C_1 and C_2 accounts for the dissonance, even though the two firms are not so far apart on the market-relational coordination dimension.

The next section looks specifically at actor bond structure under conditions of relational coordination. Thus, the parties have *decided to work together* and have begun to interact and develop actor bond structure within their own socially and economically defined relationship.

2.2. A Model of Actor Bond Structures and Relationship Development

When the collaborative interest model is considered at the dyadic level (ie the firms are working together), it becomes possible to account for the interaction effects between firms. This is achieved by considering the similarities and differences in relational norms across a dyad, for this provides a conceptualisation of actor bond structure. A brief digression is required to elaborate upon the concepts of interaction and structure before the model is presented.

2.2.1. Structure and Interaction

Following Giddens (1979), structure exists as a "duality" which is at once a context that results from interaction between parties and the medium for that very same process of interaction. This duality of structure, as context and medium, allows one to conceive of actor bond structure as an outcome of both parties' view of an interaction, while at the same time this structure not only conditions the interaction but also acts as the medium of interaction. In this way actor bond structure is continually recreated, and so is changed or held constant, by the parties' mode of interaction.

As actor bond structure is composed of the level of activity of any component, as well as difference/similarity it is possible to identify three simple forms of structure (see figure 4.4). First, members of a dyad may be symmetric and active on a structural component. That is both parties regard a specific relational norm as having equal and high importance within the dyad. Second, a dyad may be symmetric and inert on a

structural component. That is both parties regard a specific relational norm as having equal, but low importance within the dyad. Finally, a structural component may be asymmetric across the dyad, with each party having a different view of the structural component.

Figure 4.4 Three Categories of Dyadic Structure

		Party B Structural Component Level	
		Inert	Active
Party A Structural Component Level	Inert	Symmetric Inert	Asymmetric
	Active	Asymmetric	Symmetric Active

This simple typology of structures results in three possible outcomes for future interaction and emergent structure (see figure 4.5). First, when components are symmetric and active, the structure will be important to ongoing interaction and future generation of structure. Thus, that structural component will be relied upon to support interaction by each firm in the relationship. Second, where a component is inert for both parties, that part of structure will not be significant for either interaction or emerging structure. Third, where an asymmetry exists with regard to a structural component, the possibility exists for interaction to escalate or diminish, and that structural component may become more or less important in generating future structure.

Figure 4.5 Outcomes of Structure on Future Interaction and Structure

Component Structure	Future Interaction	Future Structure
Symmetric active	Strong	Strong
Symmetric inert	Inert	Inert
Asymmetric	Either strong or inert	Either strong or inert

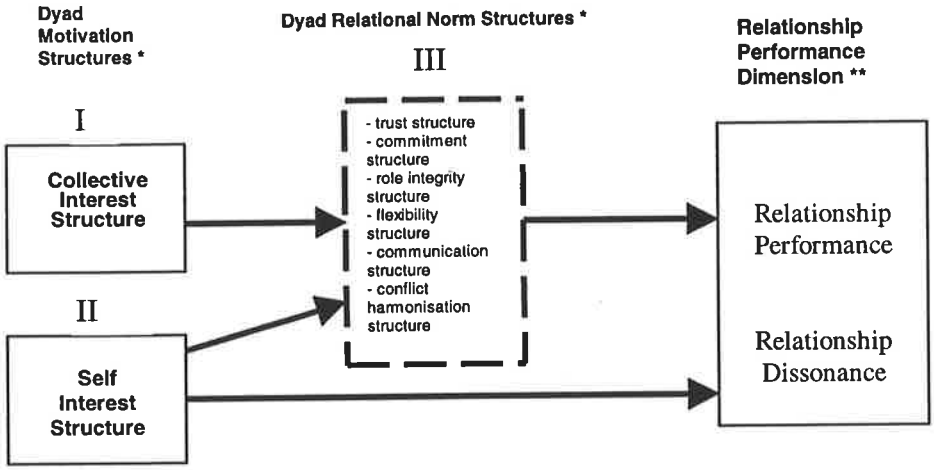
Thus, a dyadic model, in accounting for structure and interaction simultaneously, is able to explain the dynamic of emergent structure. When the emergent structure is supportive of the relationship, interaction continues to develop and the relationship shifts from independent to interdependent. When the structure is inert, or asymmetric, interaction is stifled and the relationship either remains static or returns to independence.

It is now possible to present a dyadic model of relationships.

2.2.2. Dyadic Model of Relationships

The conjoining of two firms within a collaborative interest model results in the formation of three structures related to each other (self and collective interest and actor bond structure) and two performance dimensions (see figure 4.6). The nature and dynamics of the three structures can be described, or characterised, by the way their components are active or symmetric across a relationship (see figure 4.4 and 4.5). However, the conjoining of the collaborative interest model to create a dyadic model does not lead to explanation of a relationship performance structure. There is no duality in performance, such that it is both context and medium, since performance is an outcome of a relationship. As the final dependent variable of the model, no re-cursive conditioning is suggested between relationship performance and actor bond structures.

Figure 4.6 Motivation, Actor Bond Structures and Dyad Performance Dimension



** Note: Each structure (I, II, III) is composed of components with any of three natures (see figures 4.4 and 4.5).*

*** Note: Relationship Performance Dimension is not structural in nature (see figure 4.7).*

Thus, rather than being a structural component, the relationship performance dimension may be characterised by two attributes of the relationship: *relationship performance* and *relationship dissonance* (see figure 4.7). Relationship performance, within the dyad model, may be viewed as the combination of both firms' perception of performance, while the relationship dissonance refers to the degree of discord between both firm's perceptions of the relationship performance.

Figure 4.7 Relationship Performance Dimension

		Relationship Dissonance (ie |Pa-Pb|)*	
		Concordant	**Discordant**
Relationship Performance (ie Pa+Pb)	**Low**	Mutual Inert	Disconnected Inert
	High	Mutual Performing	Disconnected Performing
* Pa, Pb are relationship performance by principal and agent/distributor respectively			

This conceptualisation of the relationship dimension at the dyad level results in four types of relationships (figure 4.7). Firms may have a realistic or unrealistic view of their relationship (ie be concordant or discordant) and the relationship can be either performing or non-performing. The degree of discord by the parties on performance can be used to determine the relationship dissonance, or level of realism that exists between the parties. Since performance is the reason for continuing a relationship; one would expect managers, as part of managing the relationship, to come to a shared view of performance. This shared and realistic view of the relationship would remove differences in opinion about performance that arise from firm history or network position. However, even with mutual agreement on performance, a relationship may be either high or low in its actual performance.

Where two parties do not agree on performance, there are at least two scenarios. First, it may be that the partners are not close and so have not arrived at a common view of performance. Second, either one party or both are naïve about the relationship, so that the same perception of performance does not prevail. In either of these scenarios, one could not refer to the relationship as integrated and genuine. However, the relationship may still be characterised as either high or low performing.

The dyadic model of relationships (figure 4.6) has a number of advantages. First, as the attributes of each of the three actor bond structures (ie self and collective interest and relational norms) may be described as one of three possibilities, many configurations of relational coordination are possible. Of course, these combinations are not endless, as generally norms must be either consistent or inconsistent with each other. Thus, the number of potential configurations will be limited, but extensive. This reflects the discussion in chapter three, which suggested the existence of different forms of relational coordination based on preferred modes of operating the economic and social contexts in a relationship.

A second strength of the model is the way it uses a dyadic perspective, which accounts for interaction and structure, to explain relationship performance and dissonance. While these attributes of relationship performance have been shown qualitatively to exist (Ford and Rosson 1982), no parsimonious explanation has previously been presented.

2.3. Dyadic Model Propositions

The arguments for the propositions related to dyadic structures and their influence on relationship performance and dissonance are an exact image of the subsumed firm level constructs discussed in the first section of this chapter. This is so because the dyad model is a combination of the subsumed firm level collaborative interest model of relational coordination. In addition, however, one must consider two further arguments to develop testable propositions. First, the discussion in section 2.2 of this chapter has highlighted how forms of coordination exist within an interaction possibility space composed of social and economic contexts. These contexts provide the rules and norms, which in conjunction with structural duality, lead to stability of interaction between specific partners. Where firms are far apart on expected coordination modes, the relationship will not be stable.

Second, as discussed in the dyad model, the components of structure can be one of three types. The various combinations of components across the three structures will necessarily lead to different forms of relational coordination. In addition, some forms of relational coordination will be more likely than others to survive continuous environmental pressures. Therefore, one can expect stable, and not so stable, forms of relational coordination to appear because of the different history and preferred interaction modes of the firms concerned.

The propositions for the dyadic model mirror those of the firm level model, but reflect variations in motivational and actor bond structures made-up of the level of importance and asymmetry of structural components, as well as the two dependent variables of relationship performance and dissonance, and may be listed as follows:

Proposition 6a: Higher levels of self-interest in a dyad will result in higher relationship performance.

Proposition 6b: The more uneven the levels of self-interest in a dyad, the lower will be relationship performance.

Proposition 6c: Higher levels of self-interest in a dyad will result in less relationship dissonance.

Proposition 6d: The more uneven the levels of self-interest in a dyad, the greater will be relationship dissonance.

Proposition 7a: Higher relational coordination development in a dyad will result in higher relationship performance.

Proposition 7b: The more uneven the level of relational coordination in a dyad, the lower will be relationship performance.

Proposition 7c: Higher relational coordination development in a dyad will result in lower relationship dissonance.

Proposition 7d: The more uneven the level of relational coordination in a dyad, the greater will be relationship dissonance.

Proposition 8a: Higher levels of past experience in a dyad will result in greater development of relational coordination.

Proposition 8b: The more uneven the levels of past experience in a dyad, the lower will be development of relational coordination.

Proposition 8c: Higher levels of past experience in a dyad will result in less uneven development of relational coordination.

Proposition 8d: The more uneven the levels of past experience in a dyad, the more uneven will be development of relational coordination.

Proposition 9a: Higher levels of future orientation in a dyad will result in greater development of relational coordination.

Proposition 9b: The more uneven the levels of future orientation in a dyad, the lower will be development of relational coordination.

Proposition 9c: Higher levels of future orientation in a dyad will result in less uneven development of relational coordination.

Proposition 9d: The more uneven the levels of future orientation in a dyad, the more uneven will be development of relational coordination.

Proposition 10a: Higher levels of self-interest in a dyad will result in greater development of relational coordination.

Proposition 10b: The more uneven the levels of self-interest in a dyad, the lower will be development of relational coordination.

Proposition 10c: Higher levels of self-interest in a dyad will result in less uneven development of relational coordination.

Proposition 10d: The more uneven the levels of self-interest in a dyad, the more uneven will be development of relational coordination.

These propositions support the configuration of the dyad model explaining relationship performance and dissonance (figure 4.6) and therefore indirectly support suggestions that different motivation and actor bond structures lead to different forms of relational coordination. However, they do not offer direct support. This is resolved in the next section.

2.4. Relational Coordination Types

The two aspects of the relationship performance dimension offer a means to examine four relationship types (see figure 4.7). Necessarily, variations in relationship dissonance and performance are likely to reflect different modes of relationship operation. Thus, mutually performing dyads are likely to be operating in substantially different relational coordination modes as compared to the other three relationship types given in figure 4.7. These relationship types are discussed below leading to relevant propositions.

2.4.1. Mutual Performing Dyads

Where both parties to a relationship concur and performance is good, two aspects of their relationship are operating conjointly. First, concordance and high levels of

performance suggest a level of closeness so that one would expect that perceptions of the other party would be correct and the resultant actor bond structure would rely upon relational norm development. Second, and in conjunction with closeness, the high performance suggests that actor bond structure is strong and mutual. This situation should reflect a situation where self and collective interest are balanced and relational coordination is strong so that equally high levels of communication, trust and commitment allow high levels of flexibility, role integrity and harmonisation of conflict.

Proposition 11: Mutual-performing relationships will be associated with high and even levels of relational norms, self-interest, future orientation and past experience.

2.4.2. Mutual and Inert Dyads

This type of relationship is characterised by equal perceptions of low performance across the dyad. As both parties have a similar view of performance, both are in agreement about the relationship. This indicates a clear perception of the other party. This situation may occur whether actor bond structure is symmetrical or asymmetrical.

When actor bond structure is symmetrical, environmental factors may explain the low performance (eg stronger competitor). The effect of environmental factors has not been examined in this study as it falls outside of the focus on the process of relational coordination.

When actor bond structure is asymmetrical there would be mismatch across self and collective interest. That is, one firm may operate closer to relational coordination, while the other regards the joint activity as an extended period of exchange. This mismatch in coordination types would explain the low level of performance.

Proposition 12: Mutual and inert relationships will be associated with high and even levels of relational norms, but uneven levels of self-interest, future orientation and past experience.

2.4.3. Disconnected and Inert Dyads

Inert and disconnected dyads will be characterised by strong disagreement about performance by dyad members. This difference of view across the dyad suggests that

the parties are neither realistic nor close and so are operating with different relationship models. For example, one firm may view the joint activity as a form of relational coordination, while the other sees the activity as closer to an extended market transaction. Thus, the relationship is inert, rather than growing and active. In the long-term, these relationships will founder if exposed to environmental change or rapidly escalate into active relationships capable of overcoming an obstacle.

Proposition 13: Disconnected and inert relationships will be associated with high levels of unevenness on relational norms, self-interest, future orientation and past experience.

2.4.4. Disconnected and Performing Dyads

While this type of relationship enjoys strong performance, the parties are in disagreement about that performance. This suggests that the dyad is not working closely together, but that both firms are driven by strong and equal self-interest, so that self-interest structure is strong and symmetric. However, with regard to relational coordination, the lack of closeness indicates that relational norm structure will be asymmetric. In the long-term, these relationships will founder if exposed to environmental change or rapidly escalate into active relationships capable of overcoming an obstacle.

Proposition 14: Disconnected and performing relationships will be associated with high levels of unevenness on relational norms, future orientation and past experience, but high levels of evenness on self-interest.

3. Conclusion

A collaborative interest model, at a firm level, of how relational coordination leads to relationship performance has been proposed. This model suggests that relational coordination results from a collective orientation towards a relationship that is balanced by the self-interest motives of the parties for entering a relationship. Empirical testing of the collaborative interest model will allow determination of a set of constructs involved in relational coordination.

A model of an interaction possibility space was proposed. This model portrays actor bond structure as resulting from degrees of similarity and difference on preferred coordination mode by relationship parties. The IPS model suggests that a dyadic model of actor bond structure may be composed from an aggregation of the collaborative interest model of any two dyad firms. Thus, the relational coordination constructs found in the collaborative interest model may be used to characterise actor bond structure.

A dyadic model of actor bond structures (composed of self-interest, collective interest and relational norm components) interacting to explain relationship performance and dissonance has been proposed. In addition, differences in relationship performance and discord on performance are likely to be explained by variations in the level of activity of each structural component in the dyad. Propositions to test these models have been put forward.

The use of relational coordination between business partners is rising. Yet, researchers have not developed a model that explains how actor level interaction transforms into actor bond structure.

The next chapter outlines the methodology used to test the propositions presented above.

Chapter Five – Hypotheses and Methodology

This chapter presents the hypotheses developed to test the propositions in the previous chapter and then reviews the methodology, data collection process and methods of analysis. The first section presents the hypotheses and explains how they are related to the previously presented propositions. The second section outlines the reasons for choice of a specific sample and sample frame. The third section discusses data collection methods. The fourth section provides a profile of the final sample. This is followed by a discussion of methods for data analysis and finally scale construction.

1. Hypotheses

This section presents the hypotheses in three parts. First, hypotheses related to the collaborative interest model are presented. This is followed by hypotheses related to the dyadic model of actor bond structures. Finally, the hypotheses concerning relationship classes are presented.

A limitation of the study, to be noted at this point, was a problem in developing high quality construct measures for two aspects of relational norms; "communication" and "conflict harmonisation". As a result, hypotheses concerning these two relational norms are not presented.

1.1. Hypotheses Related to the Collaborative Interest Model

In this study, self-interest is operationalised as the economic goal of the firm in the target market. This is a measure distinct from that of relationship performance in the target market. Relationship performance recognises the results of joint action, whereas economic goal is focused on the intention of the firm in entering the relationship. Thus, the economic goals of the firm reflect the self-interest motive of the firm in entering a relationship, while performance is a measure of relationship outcome. As a result of these operationalisations it is possible to present specific hypotheses for testing the propositions related to the collaborative interest model. This is done in two parts to reflect the three stages within the model.

1.1.1. Sub-model A

In this sub-model of the collaborative interest model (see figure 5.1), the hypotheses are concerning the dependent variable, relationship performance. Table 5.1 presents the propositions and the related specific hypotheses for examining the structure of Sub-model A.

Figure 5.1 Collaborative Interest Model – Sub-model A

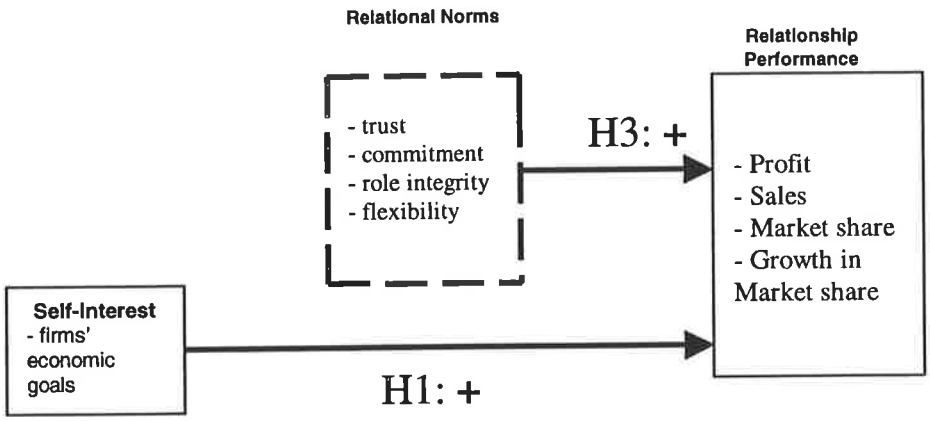


Table 5.1 Propositions and Hypotheses for the Collaborative Interest Model - Sub-model A

Hypotheses	Independent variable	Predicted Relationship	Dependent Variable
Proposition 1	**Self-interest**		**Relationship performance**
Hypothesis 1	Economic goals	+	Relationship performance
Proposition 3	**Relational Norms**		**Relationship performance**
Hypothesis 3a	Trust	+	Relationship performance
Hypothesis 3b	Commitment	+	Relationship performance
Hypothesis 3c	Flexibility	+	Relationship performance
Hypothesis 3d	Role Integrity	+	Relationship performance
Hypothesis 3e	Trust, Commitment, Flexibility, Role Integrity	+	Relationship performance

1.1.2. Sub-model B

In this sub-model of the collaborative interest model (see figure 5.2), the hypotheses are those concerning the relational norm constructs as dependent variables. Table 5.2 presents the propositions and related hypotheses for examining the structure of Sub-model B.

Figure 5.2 Collaborative Interest Model – Sub-model B

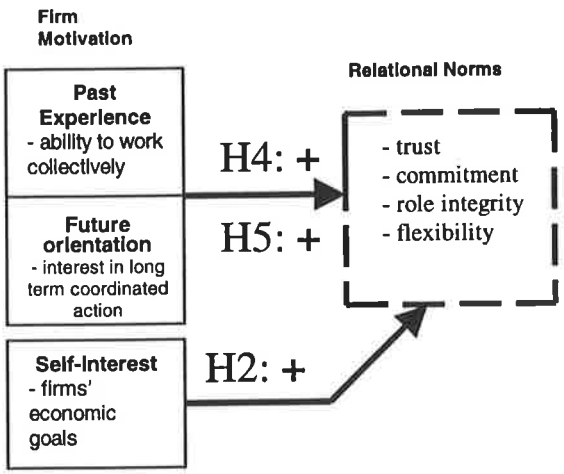


Table 5.2 Propositions and Hypotheses for the Collaborative Interest Model - Sub-model B

Hypotheses	Independent variable	Predicted Relationship	Dependent Variable
Proposition 2	**Self Interest**		**Relational Norms**
Hypothesis 2a	Economic goal	+	Trust
Hypothesis 2b	Economic goal	+	Commitment
Hypothesis 2c	Economic goal	+	Role Integrity
Hypothesis 2c	Economic goal	+	Flexibility
Proposition 4	**Past Experience**		**Relational Norms**
Hypothesis 4a	Past experience	+	Trust
Hypothesis 4b	Past experience	+	Commitment
Hypothesis 4c	Past experience	+	Role Integrity
Hypothesis 4d	Past experience	+	Flexibility
Proposition 5	**Future Orientation**		**Relational Norms**
Hypothesis 5a	Future Orientation	+	Trust
Hypothesis 5b	Future Orientation	+	Commitment
Hypothesis 5c	Future Orientation	+	Role Integrity
Hypothesis 5d	Future Orientation	+	Flexibility

In the next section the hypotheses related to the dyadic model are presented.

1.2. Dyad Level Hypotheses

Actor bond structure is operationalised, in this study, as the magnitude (ie sum) and asymmetry (ie difference) of dyad member perceptions of relational norms, collective interest and self-interest constructs. Thus, the propositions in chapter four with regard to the effects of actor bond structure on relationship performance and dissonance result in the following testable hypotheses (see table 5.3).

Table 5.3 Propositions and Hypotheses for Actor Bond Structure Dyad Model

Hypotheses	Independent variable	Predicted Relationship	Dependent Variable
Proposition 6	**Self-interest Structure**		**Relationship Dimensions**
Hypothesis 6a	Economic Goal Magnitude	+	Relationship performance
Hypothesis 6b	Economic Goal Asymmetry	-	Relationship performance
Hypothesis 6c	Economic Goal Magnitude	-	Relationship Dissonance
Hypothesis 6d	Economic Goal Asymmetry	+	Relationship Dissonance
Proposition 7	**Relational Norm Structure**		**Relationship Dimensions**
Hypothesis 7a-1	Trust Magnitude	+	Relationship performance
Hypothesis 7a-2	Commitment Magnitude	+	Relationship performance
Hypothesis 7a-3	Flexibility Magnitude	+	Relationship performance
Hypothesis 7b-1	Trust Asymmetry	-	Relationship performance
Hypothesis 7b-2	Commitment Asymmetry	-	Relationship performance
Hypothesis 7b-3	Flexibility Asymmetry	-	Relationship performance
Hypothesis 7c-1	Trust Magnitude	-	Relationship Dissonance
Hypothesis 7c-2	Commitment Magnitude	-	Relationship Dissonance
Hypothesis 7c-3	Flexibility Magnitude	-	Relationship Dissonance
Hypothesis 7d-1	Trust Asymmetry	+	Relationship Dissonance
Hypothesis 7d-2	Commitment Asymmetry	+	Relationship Dissonance
Hypothesis 7d-3	Flexibility Asymmetry	+	Relationship Dissonance
Proposition 8	**Past Experience Structure**		**Relational Norm Structure**
Hypothesis 8a-1	Past Experience Magnitude	+	Trust Magnitude
Hypothesis 8a-2	Past Experience Magnitude	+	Commitment Magnitude
Hypothesis 8a-3	Past Experience Magnitude	+	Flexibility Magnitude
Hypothesis 8b-1	Past Experience Asymmetry	-	Trust Magnitude
Hypothesis 8b-2	Past Experience Asymmetry	-	Commitment Magnitude
Hypothesis 8b-3	Past Experience Asymmetry	-	Flexibility Magnitude
Hypothesis 8c-1	Past Experience Magnitude	-	Trust Asymmetry
Hypothesis 8c-2	Past Experience Magnitude	-	Commitment Asymmetry
Hypothesis 8c-3	Past Experience Magnitude	-	Flexibility Asymmetry
Hypothesis 8d-1	Past Experience Asymmetry	+	Trust Asymmetry
Hypothesis 8d-2	Past Experience Asymmetry	+	Commitment Asymmetry
Hypothesis 8d-3	Past Experience Asymmetry	+	Flexibility Asymmetry
Proposition 9	**Future Orientation Structure**		**Relational Norm Structure**
Hypothesis 9a-1	Future Orientation Magnitude	+	Trust Magnitude
Hypothesis 9a-2	Future Orientation Magnitude	+	Commitment Magnitude
Hypothesis 9a-3	Future Orientation Magnitude	+	Flexibility Magnitude
Hypothesis 9b-1	Future Orientation Asymmetry	-	Trust Magnitude
Hypothesis 9b-2	Future Orientation Asymmetry	-	Commitment Magnitude
Hypothesis 9b-3	Future Orientation Asymmetry	-	Flexibility Magnitude
Hypothesis 9c-1	Future Orientation Magnitude	-	Trust Asymmetry
Hypothesis 9c-2	Future Orientation Magnitude	-	Commitment Asymmetry
Hypothesis 9c-3	Future Orientation Magnitude	-	Flexibility Asymmetry
Hypothesis 9d-1	Future Orientation Asymmetry	+	Trust Asymmetry
Hypothesis 9d-2	Future Orientation Asymmetry	+	Commitment Asymmetry
Hypothesis 9d-3	Future Orientation Asymmetry	+	Flexibility Asymmetry
Proposition 10	**Self-interest Structure**		**Relational Norm Structure**
Hypothesis 10a-1	Economic Goal Magnitude	+	Trust Magnitude
Hypothesis 10a-2	Economic Goal Magnitude	+	Commitment Magnitude
Hypothesis 10a-3	Economic Goal Magnitude	+	Flexibility Magnitude
Hypothesis 10b-1	Economic Goal Asymmetry	-	Trust Magnitude
Hypothesis 10b-2	Economic Goal Asymmetry	-	Commitment Magnitude
Hypothesis 10b-3	Economic Goal Asymmetry	-	Flexibility Magnitude
Hypothesis 10c-1	Economic Goal Magnitude	-	Trust Asymmetry
Hypothesis 10c-2	Economic Goal Magnitude	-	Commitment Asymmetry
Hypothesis 10c-3	Economic Goal Magnitude	-	Flexibility Asymmetry
Hypothesis 10d-1	Economic Goal Asymmetry	+	Trust Asymmetry
Hypothesis 10d-2	Economic Goal Asymmetry	+	Commitment Asymmetry
Hypothesis 10d-3	Economic Goal Asymmetry	+	Flexibility Asymmetry

The next part presents the hypotheses concerning relationship classes based upon different sets of active actor bond structures.

1.3. Hypotheses for Relationship Classes

As differences between dyad partners are important in the formation of actor bond structures, different types of relationships will exist. As was argued in chapter three, all dyads will not necessarily exhibit every one of the actor bond structures. Rather, each relationship type is likely to exhibit a different mixture of actor bond structures and these should lead to variations on the dimensions of relationship performance and dissonance.

Hypothesis 11: Mutual-performing relationships will be associated with higher levels of magnitude and lower levels of asymmetry on relational norms, economic goals, future orientation and past experience.

Hypothesis 12: Mutual and inert relationships will be associated with higher levels of magnitude on relational norms, but higher levels of asymmetry on economic goals, future orientation and past experience.

Hypothesis 13: Disconnected and inert relationships will be associated with higher levels of asymmetry on relational norms, economic goals, future orientation and past experience.

Hypothesis 14: Disconnected and performing relationships will be associated with higher levels of asymmetry on relational norms, future orientation and past experience, but high levels of magnitude on self-interest.

The hypotheses presented in the last two parts of this section require a method to sample firms associated with each other in a dyad level of organisation. The next section describes such a method.

2. Methodology

The methodology chosen to examine the hypotheses was a survey of computer software firms engaged in international relationships with distributors or agents selling their business software applications. The study was undertaken on relationships

involving Australian and New Zealand principals and distributor/agents in Malaysia, Singapore, Australia and New Zealand.

This study has two units of analysis. The propositions related to the collaborative interest model of relationship performance (figure 4.1) are tested on the firm as a member of a dyad. However, for propositions linked to actor bond structure and relationship types (figure 4.6) the dyad is the unit of analysis, with data generated from indicators reported by both parties. Given that respondents were asked to report on firm and supra-firm level constructs, careful selection of key-informants (Campbell 1955) was essential. The informants were chosen for their role as co-ordinators of a business relationship. As the choice of key-informant is critical to this research, the selection process for informants is discussed in more detail below.

The definition of a business relationship as "a working relationship between two firms, on a continuing basis" (Larson 1992) was used to screen inter-firm alliances. This definition encompassed principal/distributor arrangements, principal/agent arrangements and gentlemen agreements. All of these relationships were formed by mutual agreement, with no aid or direction from a parent company or other party. Thus, forms of hierarchical coordination are removed as factors in the formation of these relationships. As a result, the sample contains no joint ventures. Joint Ventures were excluded as they represent highly formalised arrangements with major capital investment, where hierarchical structures were likely to intervene in relationship governance.

2.1. Sampling Criteria

The specific industry that forms the context of this study was chosen for several reasons. First, an international study provided many opportunities to control for extraneous variables. For example, firms would not be able to easily access legal redress. Thus, relationships structured as contractual hierarchies were, to all intents and purposes, removed from the sample. In addition, an international sample meant that no firm had an imbalance of knowledge that would allow development of hierarchical coordination. The agent/distributor firm was knowledgeable in local market conditions, while the principal was an expert in the software. Thus, the sample partially controls for power asymmetry based on authority. A further benefit of this sample was the ease

of measurement of relationship performance, the key dependent variable, as market boundaries were clear to all respondents.

A second reason for choosing the software industry was its network nature, which meant that relationships were the common modus operandi (Coviello, Ghauri et al. 1998). Copyright breaches and pirating in the computer software industry mean that principals generally seek to establish long terms relationships with known and trusted partners. Opportunistic and short term strategies would be highly discouraged in a situation where providing the software immediately exposes the principal to the risk of intellectual property theft. A third, but less important reason, was that the innovative nature of the computer software industry combined with the education level of participants meant that country culture would be less important in explaining partnership interaction. In addition, by conducting the study with relationships across a cultural divide the effect of participants' own cultural and social norms on the way a relationship was conducted might be reduced in significance. Finally, the firms in Malaysia and Singapore also use English as the main business language, avoiding the need of translating the survey instrument.

A final reason was that focusing on one industry has the effect of controlling for industry culture. This is consistent with the approach undertaken in previous business relationship studies. Consequently, and since they operate in a similar industry environment, the firms are more likely to reveal relative strengths/weaknesses in relation to their competitors than would firms operating in a number of different industrial sectors. In addition, the use of a single industry leads to more robust empirical results, as firms would rely on similar skills in order to perform.

2.2. Sampling Frame

A list of 512 exporting Australian software firms was initially obtained from the Kompass Pacific Database (33rd Edition). A single page facsimile (see appendix A) was sent by automated computer software to these firms, to ascertain those involved in relationships with Malaysian and/or Singapore firms. These facsimiles were addressed by personal name to the Marketing Manager, Export Manager, or Managing Director of the firm, in recognition that this was likely to increase the response rate (Kanuk and Berenson 1975). Where a personal name was not available, the addressee was simply

the title. Facsimile questionnaires have been shown to have faster response speed and low costs than mail surveys (Nebenzahl and Jaffe 1995). Where facsimile numbers were out-of-date, a letter was dispatched. Firms that did not respond to either of these methods were subsequently contacted by telephone.

This process resulted in a final list of 85 Australian firms having relationships with Malaysian/Singaporean distributor/agent firms. Each firm in this group was then contacted and the person responsible for managing the Malaysian/Singapore relationships was identified. The ability of the manager to be a key informant was established and a strict screening process applied to collectively nominate the partner firm in the other country. Details of the manager on the other side of the relationship were also obtained. Surveys were then mailed to the key informants in both firms and extensive follow-up was conducted to ensure the completion of the questionnaire.

When it became apparent that sample size would present a problem the decision was made to extend the sample frame to include New Zealand firms with relationships in Australia, Malaysia and/or Singapore. As a result a list of 373 exporting New Zealand software firms was obtained from the Kompass Pacific Database (33rd Edition). The same filtering procedure was followed as with the Australian firms.

However, with the New Zealand firms the opportunity to use a World Wide Web (WWW) survey arose through Ngee Ann Polytechnic in Singapore. In addition, previously contacted firms were also offered the opportunity to complete the WWW survey, rather than the mail survey. Many reminders by telephone and email followed. In addition, a number of Malaysian and Singapore firms were contacted and completed the survey during an interview. The variation in response rates between the mail and WWW survey has been reported elsewhere (Medlin, Roy et al. 1999). (This paper is contained in appendix B).

Eventually complete details of 83 relationships were ready for analysis. Response rates are shown in table 5.4. The four firms not detailed in table 5.4 are Malaysian/Singapore firms whose Australian principal did not respond. Most non-participants invoked a lack of time, although six of these firms stated they had a policy of not responding to research requests. In two further instances, the questionnaires received were incomplete, precluding the inclusion of these firms in the analysis.

Table 5.4 Population and Sample Details

	Firms in Database	Population (after filter)	Number of Respondents	Response Rate	Number of Dyad Responses	Dyad Response Rate
Australian	512	85	45	32%	34	24%
New Zealand	373	55				

3. Data Collection

Qualitative and quantitative methodologies were used in this study. Information from the literature review was tested using qualitative in-depth interviews with managers from both sides of business relationships in Australia, Singapore and Malaysia. Data to test the conceptual model was then collected by mail distribution of a self-administered questionnaire, and later by the World Wide Web.

3.1. Exploratory In-Depth Interviews

The embeddedness of relational norms in culture presented a dilemma, which previous studies of relational norms had ignored. Thus, exploratory research on managers' perceptions of the way cross-cultural relationships were managed was undertaken. Five dyads were identified in the software industry with the Australian firm representing the principal and the agent/distributor being in Malaysia or Singapore. Dyads were chosen on the basis of longevity (three long-term and two short-term) so that variations in relational norm development would be apparent. In-depth interviews were conducted with managers of both sides, using as a basis questions suggested by Larson (1992).

These interviews suggested that business relationships were viewed slightly differently from either side of the dyad as a result of culture. This exploratory study has been reported elsewhere (Medlin and Quester 1997) (see appendix C).

3.2. Self-Report Questionnaire

Quantitative data was collected via a self-administered questionnaire. The cross-cultural nature of the study suggested that scales developed for the US and Western countries might be inappropriate. Thus, a number of different established scales were used for each construct. New scales were developed where established scales did not exist.

After development, the questionnaire was pre-tested on Australian and Malaysian managers of relationships. Apart from questions concerning time orientation the questionnaire was adopted without change.

The questionnaire was divided into seven sections and for the paper version comprised eleven pages. The choice of seven sections followed a logical sequence for the respondent, while allowing questions for each construct to be sequenced in an indiscriminate manner. This meant that response bias was not generated by the impact of one question on the next.

A World Wide Web version of the questionnaire was also prepared. The WWW questionnaire consisted of 38 screens, with the seven sections separated into sub-sections of between 5 and 56 questions. To reduce the likelihood of differences in response between the two formats, the layout of the WWW questionnaire was prepared using the criterion that it should look as much like the paper questionnaire as possible.

The paper questionnaire was sent with a cover letter that explained the purpose of the research and offered the respondent the opportunity to receive a report of the findings. appendix D contains the covering letter and the questionnaire. The organisation of the constructs in the questionnaire is shown in table 5.5. The questionnaire began with instructions and definitions of relevant terms, such as "focus relationship" and "other relationship" so that respondents would clearly appreciate their role as an informed observer of the business relationship. Section One of the questionnaire made it clear that the questionnaire concerned a specific focus relationship, with respondents asked to write down the names of the two parties. Section Two of the questionnaire focused on the way the respondent firm approached relationships in general, before then seeking information about the strategic nature and goals of the focus relationship. Together the Introduction and Section One clearly focused the mind of the respondent on the purpose of the questionnaire: to collect data on a specific relationship.

Table 5.5 Organisation of Questionnaire

(Indicators are in bold, italics)

	Construct	Source - Questions
Section One: Firm Details	Focus Relationship	Details of relationship - 1.1, 1.2, 1.3, 1.4, 1.5
Section Two: Planning and Goals	Locus of Control by Firm	Adapted from Rotter (1966); Srinivasan and Tikoo (1992) - 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10
	Firm Planning Horizon	Developed for this study - 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18
	Firm Interaction Style (***Past Experience***)	Developed for this study - 2.19, 2.20, ***2.21***, 2.22, 2.23, ***2.24***, 2.25, 2.26
	Focus Relationship Interaction Style (***Future Orientation***)	Ganesan (1994) – ***2.29***, ***2.30***, 2.32, Developed for this study - 2.27, 2.28, 2.31, 2.33, 2.34, 2.35, 2.36
	Focus Relationship – Strategic Importance	Developed for this study - 2.37, 2.38, 2.39, 2.40, 2.41, 2.42, 2.43, 2.44, 2.45, 2.46
	Focus Relationship – Dependence Level	Adapted from Ganesan (1994) – 2.47, 2.48, 2.49, 2.50, 2.51, 2.52, Developed for this study - 2.53, 2.54
	Firm's ***Economic Goal*** with Focus Relationship	Developed for this study - 2.55, 2.56, 2.57, ***2.58, 2.59***, 2.60, 2.61
Section Three: Inter-firm Relation	***Commitment***	Aulakh, et al. (1997) – 3.2, 3.3, 3.4, 3.5, ***3.10***, Holm, et al. (1996) - ***3.6***, 3.12, 3.7, 3.11, ***3.14***,
	Role Integrity	Kaufmann and Stern (1988) - 3.1, 3.8, 3.9, ***3.13***, 3.15, 3.16, 3.17, 3.18, ***3.19***, ***3.24***, Developed for this study - 3.20, 3.21, 3.22,
	Flexibility	Heide and John (1992) - ***3.23, 3.25, 3.26***, 3.27, Developed for this study - 3.28, 3.29
	Connectedness	Anderson, et al. (1994) - 3.30, 3.31, 3.32, 3.33, 3.34, 3.35,
	Trust	Larzelere and Huston (1980) - 3.36, 3.37, 3.38, 3.39, 3.40, ***3.41, 3.42***, 3.44, 3.45, Zaheer and Venkatraman (1995) - 3.43, Ganesan (1994) - 3.46, 3.52, 3.53, Rodriguez and Wilson (1995) - 3.47, 3.49, 3.50, ***3.51***, Developed for this study - 3.48, 3.54, 3.55
	Time Horizon	Developed for this study - 3.56
Section Four: Communications	Open Communication	Heide and John (1992) - 4.1,, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, Aulakh (1997) - 4.2, 4.3 Developed for this study - 4.13, 4.14, 4.15, 4.16

Table 5.5 (Continued)

(Indicators are in bold, italics)

Section Five: Resolving Disagreement	Conflict Harmonisation	Kaufmann and Dant (1992) - 5.1, 5.2 Mohr, et al. (1996) - 5.17 Mohr et al. (1994) - 5.3, Developed for this study - 5.1, 5.2, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15, 5.16
Section Six: Performance	Firm Relationship Ability	Developed for this study - 6.1, 6.2, 6.3, 6.4, 6.5
	Connectedness	Anderson, et al. (1994) - 6.6, 6.7, 6.8, 6.9
	Relationship Performance	Holm, et al. (1996) and Aulakh, et al. (1996) - 6.10, 6.11, 6.12, 6.13, 6.14, 6.15, 6.16, 6.17, 6.18, 6.19, ***6.20, 6.21***
Section Seven: Respondent Details	Respondent Personal Details	7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11,
	Individualism Index and Long-term Orientation Index Cultural Values	Hofstede (1994) - 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19,
	Respondent Locus of Control	Adapted Rotter (1966); Srinivasan and Tikoo (1992) - 7.20, 7.21, 7.22, 7.23, 7.24, 7.25, 7.26, 7.27, 7.28, 7.29, 7.30, 7.31
	Respondent time Horizon	Developed for this study - 7.32

Section Three of the questionnaire focused on the mode of interactions between the parties and contained questions that examined the trust, commitment, flexibility and role integrity constructs. Section Four examined the mode of communications within the focus relationship, while Section Five asked questions on the role of power in the focus relationship. Section Six measured the performance of the firm in past and present relationships and sought data on the performance of the focus relationship relative to competitors and expectations. Finally, Section Seven asked the personal details of the respondent and collected cultural data.

Almost all questions asked the respondent to answer on a nine-point interval scale from "strongly agree" to "strongly disagree". The selection of a nine-point scale provided a high level of potential discrimination between the polar descriptives, while allowing respondents to choose a central point indicating neither agreement nor disagreement. However, this mid-point was not labelled so that the scale remained a true interval scale with good psychometric properties.

3.3. Limitations

The main limitation of this methodology results from the need to sample both parties in a relationship. Thus, it was clearly not possible for respondents to remain anonymous.

This restriction of dyadic methodology partially explains some reluctance by respondents to participate and may have resulted in a bias towards more "open communicative" relationships. Qualitative evidence is mixed on this problem; with some "troubled" relationships using involvement to increase interaction with a partner and others in delicate negotiations refusing to be involved. However, this problem is inherent in dyadic research and no perfect solution exists. Researchers must present a professional façade and continually monitor the effects of lack of anonymity to ensure higher response rates. The qualitative evidence in this research seems to suggest that lack of anonymity was not a major problem and the final response rate compares favourably with reported studies of this kind, suggesting a good potential for generalising to the business software industry.

Collection of dyadic data will continue to present enormous problems for researchers. Even with the use of the WWW this study suffers from sample size problems. However, final sample sizes were achieved that allow use of statistical methods.

4. Sample Characteristics

This section briefly summarises the characteristics of the final sample firms and their key informant.

The sample was composed of 34 dyads (ie paired principal and agent/distributor) and 15 additional firms reporting on a further 15 relationships. Thus, a total of 49 relationships were reported from 83 sides. These 83 responses were obtained from 77 firms, with 6 firms responding on two relationships.

In the final sample of relationships 45 firms were principals and 38 were agents or distributors. Of the firms, 52 were based in Australia or New Zealand and 31 were from either Malaysia or Singapore.

The sample reflects the nature of the software industry with many small firms and a few large firms. The 77 firms were from two to seventy years of age, with a mean age of 13 years. The vast majority of the firms (approximately 75%) had no parent company, reflecting the sampling criterion of selecting firms solely responsible for their relationship decisions. These firms had operations in an average of three countries, with the range extending from 1 to 25 countries. On the other hand, the 19

firms who were subsidiaries, had parent companies that were involved in an average of 20 countries, with a range from 2 to 35 countries. Approximately 30% of the sample had less than 10 employees, while 50% had less than 20 employees and 15% had more than 100 employees.

The 49 business relationships reported here, in various ways, range in length from 6 months to 21 years. The firms in the sample had between one and hundreds of business relationships with median reported success at 66%, within a range from 5% to 100%.

The respondents' roles extended from middle to top management: managing directors or directors (37%), managers and area managers (42%) and finally operational managers (21%). The period of time that respondents had been in their position ranged from 3 months to 24 years. However, those respondents with only a short relationship management responsibility had all been with their firm and groomed for at least 12 months and so were judged capable of acting as key informants.

A majority of respondents (80%) had completed secondary education, while 60% had also completed tertiary education. A half of all Malaysian/Singaporean respondents had lived in Western countries for a period of time, with the mean period being 3.5 years. A third of the Australian/New Zealand respondents had lived overseas for a mean period of 4 years. Overall, this suggests a highly literate and internationally aware group of key-informants, who are familiar with cultural differences. Thus, cultural differences were unlikely to impede relationship development.

5. Statistical Analysis

As hypotheses have been presented at two levels (ie firm and dyadic), statistical analysis of data was conducted in two stages. The remainder of this section is divided into two parts that describe the steps and procedures in each stage. In the first stage, the data from all 83 relationships was analysed to test the collaborative interest model of relational coordination by individual firms. In the second stage, dyadic data was used to test hypotheses concerning actor bond structure and relationship types.

5.1. The Collaborative Interest Model

The purpose of this first stage is the development of a collaborative interest model of relationship coordination. However, as the sample represents firms who are principals and agent/distributors across the cultural groups of Australia/New Zealand and Malaysia/Singapore, a critical question to be resolved is whether data from these different groups may be aggregated to prepare a collaborative interest model.

5.1.1. Testing for Equality of Variance Across Sample

Whether firms with different roles (eg principals and distributor/agents) and from dissimilar cultures maybe treated equivalently in analysis depends upon the theory being examined. In this study, provided empirical data does not suggest otherwise, there are two reasons why all firms may be examined together.

First, while different roles have been shown to vary paths between relational norm constructs for distributors and manufacturers (cf Anderson and Narus 1990), this study follows a significantly different theoretical direction. Here, the collaborative interest model is developed to explain relationship performance as the outcome of interaction, whereas Anderson and Narus (1990) were concerned with the effect of role on cooperation.

Second, actor bonds develop within, and are a characteristic of, the relationship so that differences in culture are exogenous, rather than endogenous, to actor bonds. Thus, cultural difference may lead to some differences in the initial approach to relationships and while relationships are very young, but the impact on the form of actor bonds over the long-term should be minimal.

Levene's test for equality of variance will be used to examine the suitability of treating all data in aggregate to prepare a collaborative interest model.

5.1.2. Testing the Collaborative Interest Model

The collaborative interest model was examined in two stages. First, regression methodology was used to examine hypotheses one to five. Next, Structural Equation Methodology (SEM) was used to examine the interactions between the relational norm constructs in Stage II of the collaborative interest model. SEM is particularly

appropriate for examining multi-stage models such as the collaborative interest model (Steenkamp and Baumgartner 2000).

5.1.2.1. Hypotheses One to Five

These hypotheses were examined using ordinary least squares regression methodology according to either sub-model A, with relationship performance as the dependent variable (see figure 5.1); or sub-model B, with relational norms as the dependent variable (see figure 5.2). The exception is hypothesis 3e, which is tested using stepwise-multiple regression so that the association between the combined influences of the relational norms on relationship performance may be tested.

The results of regression analyses based on the hypotheses for Sub-models A and B are reported in chapter six.

While ordinary regression analysis is able to confirm the significant relationships between the main measurement constructs in the collaborative interest model, it does not allow testing of the complex interactions between the relational norm constructs. In addition, the multi-stage nature of the collaborative interest model means that structural equation modelling is a viable option (Steenkamp and Baumgartner 2000). Thus, structural equation modelling was undertaken to achieve a more definitive understanding of the dynamics of interaction between the relational norm constructs and how this relates to the other main constructs in the collaborative interest model. The next section describes the methodology used for this purpose.

5.1.2.2. Structural Equation Modelling

Since the research seeks a parsimonious model, a stepwise strategy was used to progressively simplify from a complex model (Kaplan 1990). This process involves using modification indices and expected parameter change statistics, in conjunction with substantive theory, to assess a number of embedded models in decreasing order of complexity. This process results in the removal of less important theoretical relationships so that a more parsimonious model is achieved, while retaining a reasonable fit. The process is stopped when a goodness-of-fit criterion, corrected for complexity, does not improve substantially when further simplification is considered. The Expected Cross Validation Index (ECVI) used in this analysis is based on

Akiake's (1987) seminal information criterion (AIC) which accounts for sample size (Akiake 1987; Bozdogan 1987). Information theory based criteria are measures of fit adjusted for complexity and so they are useful tools for comparing embedded models.

The results of the structural equation modelling analysis are also presented in chapter six. In the next section the method used to develop a dyadic model based upon the collaborative interest model is discussed.

5.2. The Dyadic Model

The discussion in this section is composed of three parts. First, a brief overview of past attempts to analyse dyadic data is made so as to highlight some of the inherent difficulties. Next, the methodology for testing the model of actor bond structure on relationship performance and dissonance are presented. Finally, possible methodologies for examining relationship types are discussed and a chosen methodology is presented.

5.2.1. Analysing Dyadic Data

There is a growing body of literature suggesting ways to conduct and analyse quantitative dyad research (cf Campbell 1955; Seidler 1974; Phillips 1981; Anderson 1985; Kumar, Stern et al. 1993; Zaheer, McEvily et al. 1998).

A number of studies have examined differences in relational norms between partner types. For example, Anderson and Narus (1990), using prior segmentation according to role, found manufacturers and distributors to follow different interaction models at the role level. This suggests that variation in network location leads to differences in the way actors coordinate relationships. However, as the two parties were modelled separately, the nature of the link between specific dyad partners was not made. Thus, it is not clear from this study whether each relationship has the same actor bond constructs interacting and whether the parties have complementary or similar structures for these constructs.

A number of studies have attempted to measure actor level and actor bond constructs from both sides of the dyad (cf John and Reve 1982; Heide and John 1992; Gundlach, Achrol et al. 1995; Kim 2000).

John and Reeve (1982), using structural equation modelling, examined dyadic data and found that key informants provided reliable and valid data about structural components of their dyads. However, with regard to sentiment constructs dyad partners did not report equivalently, with neither convergent or discriminant validity achieved across the dyad. The study was conducted in such a way that John and Reeve (1982) were able to eliminate all reasons for lack of convergence except divergence in partners "real" perceptions. John and Reeve (1982) then concluded that the theory for aggregation of dyadic data was inadequate. Heide and John (1992) faced the same problem and as a result only reported one side of the dyad, even though they had a dyad sample of sixty.

The lack of quantitative analysis of dyads often results from the difficulty of data collection. For example, Heide and John (1992) started with 1157 buying firms, from whom they selected 579 informants on the basis of telephone contact. These informants were surveyed to arrive at 155 usable questionnaires. Next, the informants identified their opposite number in the selling firm and 96 respondents were contacted to verify suitability. Finally 60 surveys from buyer firms were accepted as suitable for use. This illustrates the difficulty of collecting dyadic data.

More recently Kumar et al. (1993) suggested averaging responses across a dyad. However, these authors were concerned about the problem of measurement imprecision that results from such averaging across a dyad. Their solution was to have respondents negotiate in order to remove excessive differences of opinion. However, as was argued in chapter three, this methodology removes an important aspect of reality, specifically: members of a dyad can have different views of the relationship.

To date, only three studies have successfully used averaged dyadic data (Gundlach and Cadotte 1994; Gundlach, Achrol et al. 1995; Kim 2000). In each of these studies dyad level constructs were operationalised as either the magnitude (ie sum) or asymmetry (ie difference) of the parties' perceptions of a construct. Kim (2000) used an un-weighted average rather than a summation for magnitude, but these measures are empirically equivalent. These three studies demonstrate that even with the problems of averaging across a dyad, measurement of dyad level constructs is possible and that results can be achieved with regression analysis techniques.

Another possible solution is to use SEM to conduct the averaging across dyad respondents (Anderson 1985). However, this only means that the weighting used in the averaging process is determined from the structure of the covariance matrix of the indicators. While this seems to remove the arbitrariness of simple averaging, it relies totally on the efficiency and effectiveness of the filtering process used to determine the key-informants. In addition, using SEM to average across a dyad would require a very large sample size. Thus, it appears SEM methodology must be left for future research. The next section explains the methodology in this study to test the Dyad Model.

5.2.2. Methodology for Analysing the Dyad Model of Actor Bond Structures

The model of Actor Bond Structure is a result of aggregating the firm level collaborative interest model. This results in structure being composed of the firm level perceptions of relational norms, collective interest and self-interest constructs. The use of an empirically determined firm level model to form the dyadic actor bond structure model represents a strength of this research. There are two important implications. First, structure can be operationalised as the magnitude (ie sum) and asymmetry (ie difference) of the parties' perceptions of a construct. Thus, both aspects of structure are considered. Second, the regression analysis of the dyadic model may be compared with the firm level model. This comparison is important for it allows some conclusions to be made about the effects of interaction, for the distinction between the collaborative interest model and the actor bond structure model is the specific matching of dyad members.

The limitation of this methodology is that structure is not correctly portrayed as the simultaneous difference and actual level of each firm's perception of a structural component in the dyad: for while asymmetry correctly measures difference, magnitude effectively results in an average of the two firms' perception of a structural component. However, methodologies to achieve such analysis have yet to be fully developed. This area is elaborated in chapter eight.

The results of regression analyses of the actor bond structure model are presented in chapter seven.

5.2.3. Relationship Classes

Different mixtures of actor bond structures should lead to variations on the dimensions of relationship performance and dissonance. This means it should be possible to segment the dyads into groups and to examine which actor bond structures are active in the dyad model that operates in each segment.

The major issue with this methodology is deciding the means to determine groups. This question has been resolved in the field of segmentation studies (Saunders 1994; Wedel and Kamakura 1997). Four segmentation methodologies can be described based upon whether the techniques are descriptive or predictive and whether the grouping is conducted according to a priori rule or post hoc (see figure 5.3). Predictive techniques rely on a model of dependent and independent variables to investigate segmentation groupings, while descriptive techniques analyse associations across a set of variables without dependent relationships.

Figure 5.3 Segmentation Methodologies

	A-priori	**Post hoc**
Descriptive	Contingency tables, log-linear models	Clustering methods: non-overlapping, overlapping, fuzzy techniques, mixture models
Predictive	Cross-tabulation, regression, logit and discriminant analysis	Automatic interaction detection, classification and regression trees, clusterwise regression, artificial neural network, mixture models

Source: (Wedel and Kamakura 1997)

Each of the four groups of segmentation techniques has benefits and problems. A priori methods may be suitable where theory provides clear reason for the segmentation rule. However, where this is not so, the rule becomes arbitrary and so results are liable to vary according to the rule chosen. Alternatively, descriptive techniques suffer from an inability to explain the groupings formed because the relationships between variables are unspecified. Thus, the best segmentation techniques appear to be those based upon post hoc determination of groups, with the segmentation rule founded upon a predictive model (Wedel and Kamakura 1997). In these techniques, segments are formed on the basis of a model between a dependent variable and predictors, so that groups are homogenous with regard to the dependent variable and also homogeneous with respect to the predictive model. However, large samples are required for such analytic techniques (Wedel and Kamakura 1997).

Thus, in this study, an a priori decision rule is used to segment the dyad data into relationship types. However, so that predictive models of these relationship types may be constructed, the dyadic data is segmented according to variations in the dependent variables of the dyadic actor bond structure model: relationship performance and dissonance. For hypotheses testing, the dyad sample was partitioned into four groups using a median split on the two dimensions of relationship performance.

This approach is sound because activity in a relationship is generated by the combination of two firms working to influence final performance. In addition, the self-interest nature of firms and the collective nature of relationships focuses the attention of managers on the resultant relationship performance. Consequently, it is the differences and combination of the relationship performance dimension across a dyad that will allow categorisation of relationships into classes.

The limitation of the proposed technique is that results will necessarily vary according to the a priori rule chosen for segmentation. This problem also reflects a subsidiary limitation of segmentation techniques, in that a researcher must eventually decide between different possible segments. Even with post hoc predictive methods this potential problem can arise. Thus, criteria for deciding the optimal basis for segmentation are required. The solution proposed here is a variant on minimising the sum of squared error across and within potential segments (Aurifeille 2000). Thus, segmentation using the mean of relationship performance and dissonance must result in a lower sum of squared error for the aggregate of the four resulting segments, compared to the un-segmented solution.

The results of the segmentation of dyad data are presented in chapter seven. The next section outlines the procedure for scale development.

6. Scale Construction

This section describes the process of scale construction in two parts. First, the scales for the collaborative interest model are developed. Next, a description of the process for preparing dyadic level data is presented.

6.1. Constructs for the Collaborative Interest Model

Table 5.6 presents the theoretical and final measurement constructs for the collaborative interest model, the number of items and their source.

Table 5.6 Theoretical and Measurement Constructs

Theoretical Construct	Measurement Construct	Number of items	Source
Collective Interest	Past experience	2	Developed for present study
	Future orientation	2	Ganesan (1994)
Self-interest	Economic goal	2	Developed for present study
Relational Norms	Trust	3	Larzelere and Huston (1980) and Rodriguez and Wilson (1995)
	Commitment	2	Aulakh et al. (1997) and Holm et al. (1996)
	Role integrity	3	Kaufmann and Stern 1988
	Flexibility	2	Heide and John 1992
Relationship Performance	Performance	2	Adapted Aulakh et al. (1997) and Holm et al. (1996)

Generally, previously published scales were used to operationalise relational norm constructs. While scales exist to measure all, except two, of the measurement constructs present in the collaborative interest model and these items were highly reliable in their original studies (coefficient alpha of 0.7 or greater), there was no certainty that they would perform as well outside of their original context. As all of these items had been prepared for Western studies, this was considered an important issue given the proposed cross-cultural sample. As a result, a wide number of scales were incorporated in the survey instrument, after adapting wording to suit the specific sample. This approach minimised the risk of finishing with poor quality indicators of constructs.

After data collection, high quality construct measures were prepared by conducting factor analysis using the Maximum Likelihood method. During these analyses the constructs for "communication" and "conflict harmonisation" were found un-admissible, as they did not meet the requirements of multi-normal distribution required for structural equation modelling. This follows the proposed two-step methodology (ie regression analyses followed by structural equation modelling), which requires the same indicators be used for each method. The analyses involved in preparation of measurement constructs are presented in chapter six.

6.2. Dyad Level Constructs

Constructs for the attributes of actor bond structure were conceptualised as the combination and difference on corresponding firm level indicators. Thus, measures for dyad constructs were generated by calculating the sum of scores, and the absolute difference between scores, for each construct in the collaborative interest model. Thus, the constructs for attributes of actor bond structure were formed as outlined in table 5.7.

Table 5.7 Measurement Construct for Actor Bond Structure

Structure Attributes	Actor Bond Structure	
	Dyad Magnitude	**Dyad Asymmetry**
Past experience	PEp + PEa*	|PEp – PEa|
Future orientation	FOp + FOa	|FOp – FOa|
Economic goal	EGp + EGa	|EGp – EGa|
Trust	Tp + Ta	|Tp – Ta|
Commitment	Cp + Ca	|Cp – Ca|
Role Integrity	Rp + Ra	|Rp-Ra|
Flexibility	Fp + Fa	|Fp – Fa|
* The subscripts refer to Principal (p) and Distributor/Agent (a)		

Likewise, summing and finding the absolute difference across the dyad of relationship performance formed the indicators for dyadic relationship performance and dissonance, respectively (see table 5.8).

Table 5.8 Measurement Constructs for Performance Dimensions

Relationship Dimensions	
Relationship Performance	**Relationship Dissonance**
Pp + Pa*	|Pp – Pa|
* The subscripts refer to Principal (p) and Distributor/Agent (a)	

6.3. Conclusion

The rigorous preparation of measurement constructs and indicators in this study has resulted in the removal of "open communication" and "conflict harmonisation" from further analysis. However, the t-values and high convergent validity of the final constructs (presented in chapter six) provide a sound basis for further analysis that will, in part, overcome the problems of sample size.

7. Conclusion

This chapter has described the final set of hypotheses, the research design, and the research methodology. First, the hypotheses for testing the propositions outlined in chapter four were presented. Next, the choice of sample was explained and the technique for finding suitable relationships and willing respondents was discussed. The methods for statistical analysis of data were discussed. Finally, the methods for preparation of measurement constructs were presented.

Chapter six presents the results of analysis of the collaborative interest model of relationships, while dyad level results are discussed in chapter seven.

Chapter Six – Collaborative Interest Model of Relational Coordination: Empirical Results

This chapter presents the results of the firm level analysis of the collaborative interest model. The outcome of this analysis is intrinsic to the dyadic model reported in chapter seven. In this chapter, results are presented in three parts. First, preliminary analyses are presented to ascertain whether the data may be aggregated and construct measures are prepared. Second, regression analysis is reported for hypotheses one to five, to ensure that only significant constructs are retained for the collaborative interest model. Determination of constructs for this model is essential for correct modelling of the complex interactions between norms. Third, structural equation modelling is used to elucidate the complex interaction between relational norms. The use of a collaborative interest model is designed to overcome weaknesses of past research, which has failed to examine relational constructs in an appropriate cause-effect situation.

1. Preliminary Analyses

1.1. Levene's Test of Equality of Variance

Levene's test for equality of variances found no significant differences across respondents by culture (table 6.1). That no significant difference in variance was found in this case suggests that data from respondents of different culture can be further analysed in an aggregate manner.

With regard to the role of the firm (ie principal or intermediary) Levene's test for equality of variances found no significant differences for constructs across respondents, except for trust (table 6.2). That there is a significant difference in variance on the trust construct according to the role of the respondent firm is, however, interesting. In aggregate, this would suggest that agent/distributors are more trusting of the principal than vice versa. However, further analysis of the scales for measurement of trust shows that only one indicator out of three (see table 6.3) exhibited a significant difference of variance according to respondents' firm position. Thus, this difference may simply be the result of chance. That difference in variance

Table 6.1 Levene's Test of Variance by Cultural Background of Firm

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
P_EXP	Equal variances assumed	2.171	.144	1.679	81	.097	1.18	.71	-.22	2.59
	Equal variances not assumed			1.669	62.111	.100	1.18	.71	-.23	2.60
F_ORIENT	Equal variances assumed	1.499	.224	1.275	81	.206	.92	.73	-.52	2.37
	Equal variances not assumed			1.380	77.707	.172	.92	.67	-.41	2.26
GOAL	Equal variances assumed	.606	.439	.321	81	.749	.28	.88	-1.46	2.03
	Equal variances not assumed			.324	65.370	.747	.28	.87	-1.45	2.01
COMM	Equal variances assumed	.247	.621	1.270	81	.208	1.11	.87	-.63	2.85
	Equal variances not assumed			1.232	57.329	.223	1.11	.90	-.69	2.92
R_INT	Equal variances assumed	.032	.859	1.290	81	.201	1.87	1.45	-1.01	4.75
	Equal variances not assumed			1.293	63.621	.201	1.87	1.45	-1.02	4.75
FLEX	Equal variances assumed	1.996	.162	-.021	81	.984	-1.24E-02	.60	-1.21	1.18
	Equal variances not assumed			-.019	48.651	.985	-1.24E-02	.65	-1.32	1.30
TRUST	Equal variances assumed	5.977	.017	1.806	81	.075	2.14	1.18	-.22	4.49
	Equal variances not assumed			1.929	75.799	.057	2.14	1.11	-6.90E-02	4.35
PERF	Equal variances assumed	.185	.669	1.603	81	.113	1.58	.99	-.38	3.55
	Equal variances not assumed			1.583	60.760	.119	1.58	1.00	-.42	3.58

was found, in general, not to be significant according to firm role suggests that data from respondents of different role may also be aggregated for further analyses.

As all data may be aggregated, it becomes possible to test the collaborative interest model using all 83 relationships. The next section describes the process of scale construction.

1.2. Scale Construction

Preparation of measurement scales was conducted as a first step before analysis, following the two-step approach suggested by Anderson and Gerbing (1988). First, factor analysis was conducted using the Maximum Likelihood method to reduce the number of indicators for each construct (table 6.4 displays final indicators

Table 6.2 Levene's Test of Variance by Role of Firm (Principal versus Distributor)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
P_EXP	Equal variances assumed	2.157	.146	1.628	81	.107	1.12	.69	-.25	2.48
	Equal variances not assumed			1.629	78.768	.107	1.12	.69	-.25	2.48
F_ORIENT	Equal variances assumed	2.845	.095	1.379	81	.172	.97	.70	-.43	2.37
	Equal variances not assumed			1.426	76.942	.158	.97	.68	-.38	2.33
GOAL	Equal variances assumed	.574	.451	-.067	81	.947	-5.73E-02	.85	-1.75	1.64
	Equal variances not assumed			-.068	80.390	.946	-5.73E-02	.85	-1.74	1.63
COMM	Equal variances assumed	.155	.695	1.621	81	.109	1.37	.84	-.31	3.05
	Equal variances not assumed			1.610	76.080	.112	1.37	.85	-.32	3.06
R_INT	Equal variances assumed	.258	.613	1.269	81	.208	1.78	1.41	-1.01	4.58
	Equal variances not assumed			1.280	80.606	.204	1.78	1.39	-.99	4.56
FLEX	Equal variances assumed	1.053	.308	.354	81	.724	.21	.58	-.95	1.37
	Equal variances not assumed			.347	69.872	.729	.21	.59	-.98	1.39
TRUST	Equal variances assumed	7.082	.009	2.164	81	.033	2.47	1.14	.20	4.74
	Equal variances not assumed			2.217	79.926	.029	2.47	1.11	.25	4.68
PERF	Equal variances assumed	.176	.676	1.791	81	.077	1.71	.96	-.19	3.61
	Equal variances not assumed			1.799	79.879	.076	1.71	.95	-.18	3.60

Table 6.3 Levene's Test for Trust Indicators

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q9.41	Equal variances assumed	.621	.433	1.666	81	.100	.70	.42	-.14	1.54
	Equal variances not assumed			1.677	80.248	.097	.70	.42	-.13	1.54
Q9.42	Equal variances assumed	7.049	.010	2.438	81	.017	1.03	.42	.19	1.87
	Equal variances not assumed			2.498	79.855	.015	1.03	.41	.21	1.85
Q9.51	Equal variances assumed	8.846	.004	1.864	81	.066	.74	.39	-4.97E-02	1.52
	Equal variances not assumed			1.925	77.194	.058	.74	.38	-2.51E-02	1.50

Table 6.4 Factor Analysis Results

Construct	Indicator	Item	Loading
Past Experience	1	In our firm's past relationships, the parties have treated problems as joint rather than individual responsibilities.	0.810
	2	In the past we participated in relationships where the parties are willing to owe each other favours.	0.810
Future Orientation	1	We believe that over the long term our relationship with this partner will be profitable.	0.942
	2	Maintaining a long-term relationship with this partner is important to our firm.	0.942
Economic Goal	1	For each goal (Market Share) indicate the relative importance to your firm's overall strategy with regard to the focus relationship.	0.975
	2	For each goal (Market Share Growth) indicate the relative importance to your firm's overall strategy with regard to the focus relationship.	0.975
Trust	1	The other party is truly sincere in their promises.	0.926
	2	The other party can be trusted to meet their obligations to the partnership.	0.940
	3	Our partner is perfectly credible.	0.907
Commitment	1	Our firm and the partner firm are very committed to each other.	0.944
	2	The partner firm is very committed to our firm.	0.944
Role Integrity	1	The exchange relationship with the partner firm has created a complex web of interactions over all kinds of issues.	0.939
	2	The exchange relationship with the other party is extremely complicated.	0.887
	3	The exchange relationship with the partner firm has created a complex web of interactions between us.	0.937
Flexibility	1	The parties expect to be able to make adjustments in the ongoing relationship.	0.980
	2	The parties expect to be able to make adjustments to cope with changing circumstances.	0.980
Relationship Performance	1	Consider all the costs and revenues with the focus relationship. Relative to your firm's expectations in the focus market, what has been the performance of the inter-firm relation on Market Share.	0.985
	2	Consider all the costs and revenues with the focus relationship. Relative to your firm's expectations in the focus market, what has been the performance of the inter-firm relation on Market Share Growth.	0.985

and loadings). As the factors were considered independent no rotation was used (Iacobucci 1994). Appendix E contains the initial scree plots, the Kaiser-Meyer-Olkin Measures of Sampling Adequacy, Bartlett's Test of Sphericity and initial factor loadings for each construct. During these analyses, the constructs of "communication" and "conflict harmonisation" were found un-admissible, as they represented more than one factor and did not meet the requirement of a multi-normal distribution (Jöreskog and Sörbom 1996). In this step it became necessary to re-scale the second indicator of past experience, the two future orientation indicators and the second indicator of economic goals. These indicators exhibited non-normal distributions, skewed towards agreement as a result of social bias (Skewness and Kurtosis measures are displayed in appendix F), and so were re-scaled to meet the requirement of multi-normal distribution (Jöreskog and Sörbom 1996). Re-scaling these indicators changed their scale properties from interval to ordinal, implying that further analysis should be based upon Kendall's Tau correlation matrix (Jöreskog and Sörbom 1996).

However, given the various relative strengths and weaknesses of different correlation procedures on factor loadings and goodness-of-fit criteria (Babakus, Ferguson et al. 1987) it was decided to apply a Pearson's correlation matrix using the Maximum Likelihood method to reduce the range of indicators, within the context of each causal level. That the re-shaped scales were not intervening variables or a final dependent variable also provided support for the decision to use a Pearson's correlation matrix (Hulland, Chow et al. 1996). This led to three measurement models of the resulting latent variables. These latent variables were then analysed together within the collaborative interest measurement model (appendix G contains the Lisrel output for the Measurement Model).

In keeping with the two-step methodology proposed (ie regression analyses followed by structural equation modelling) the same indicators are used for both methods. However, regression analyses were conducted upon data that had not been re-scaled, while structural equation modelling was completed with re-scaled data.

The remainder of this section is with reference to the re-scaled data, except for one specific reference to un-scaled data.

Conforming to the concern for controlling biases arising from the sample size, all of the selected items have large t values and a high convergent validity (see table 6.5). Although, the chi-square of the collaborative interest measurement model was unreliable for this sample size (145.36 with 107 degrees of freedom p=0.0081), Steiger's (1989) Root Mean Square Error of Approximation (RMSEA) was acceptable (RMSEA = 0.066). Steiger considers any value less than 0.1 as a "good" fit and less than 0.05 as "very good". Steiger's (1989) RMSEA is an appropriate measure of goodness-of-fit in this study because, as a population-based index, it is relatively insensitive to small sample size (Loehlin 1992).

Table 6.5 Collaborative Interest Measurement Model

Construct	Item	Lambda	t-value	R^2
Past experience	1	0.90	7.00	0.81
	2	0.60	5.05	0.36
Future orientation	1	0.89	7.20	0.80
	2	0.76	7.56	0.58
Economic goal	1	0.95	9.69	0.90
	2	0.90	9.02	0.80
Trust	1	0.90	10.23	0.81
	2	0.91	10.54	0.84
	3	0.85	9.40	0.72
Commitment	1	0.92	10.07	0.84
	2	0.85	9.07	0.73
Role integrity	1	0.94	11.02	0.89
	2	0.79	8.33	0.62
	3	0.90	10.21	0.81
Flexibility	1	0.97	11.18	0.94
	2	0.96	10.93	0.91
Performance	1	0.95	11.15	0.90
	2	0.99	11.91	0.97

Although the number of indicators for each measurement construct has been reduced to two, for all except trust and role integrity, this is not regarded as a problem. This is so for two reasons. First, because the quality of the t values suggests that these indicators very ably represent their underlying latent variables. This is so for all except the past experience construct, where the second indicator suggests a low reliability. Second, use of two indicators was acceptable as the correlations between constructs within each causal level are low. The final correlation matrix for un-scaled data is shown as table 6.6a, while the correlation matrix of re-scaled data for structural equation modelling is shown as table 6.6b. Future studies with a larger sample, however, should seek to have more items per measure.

Table 6.6a Correlation Matrix of Final Indicators (Regression analyses)

		P_EXP	F_ORIENT	GOAL	TRUST	COMM	R_INT	FLEX	PERF
P_EXP	Pearson Correlation	1.000	.294 **	-.033	.200	.381 **	.057	.227 *	.082
	Sig. (2-tailed)	.	.007	.765	.070	.000	.609	.039	.461
	N	83	83	83	83	83	83	83	83
F_ORIENT	Pearson Correlation	.294 **	1.000	.374 **	.430 **	.537 **	.075	.449 **	.461 **
	Sig. (2-tailed)	.007	.	.001	.000	.000	.498	.000	.000
	N	83	83	83	83	83	83	83	83
GOAL	Pearson Correlation	-.033	.374 **	1.000	.093	.183	.282 **	.232 *	.287 **
	Sig. (2-tailed)	.765	.001	.	.404	.097	.010	.035	.009
	N	83	83	83	83	83	83	83	83
TRUST	Pearson Correlation	.200	.430 **	.093	1.000	.539 **	-.146	.180	.491 **
	Sig. (2-tailed)	.070	.000	.404	.	.000	.188	.103	.000
	N	83	83	83	83	83	83	83	83
COMM	Pearson Correlation	.381 **	.537 **	.183	.539 **	1.000	.057	.242 *	.504 **
	Sig. (2-tailed)	.000	.000	.097	.000	.	.606	.027	.000
	N	83	83	83	83	83	83	83	83
R_INT	Pearson Correlation	.057	.075	.282 **	-.146	.057	1.000	-.056	-.022
	Sig. (2-tailed)	.609	.498	.010	.188	.606	.	.616	.845
	N	83	83	83	83	83	83	83	83
FLEX	Pearson Correlation	.227 *	.449 **	.232 *	.180	.242 *	-.056	1.000	.261 *
	Sig. (2-tailed)	.039	.000	.035	.103	.027	.616	.	.017
	N	83	83	83	83	83	83	83	83
PERF	Pearson Correlation	.082	.461 **	.287 **	.491 **	.504 **	-.022	.261 *	1.000
	Sig. (2-tailed)	.461	.000	.009	.000	.000	.845	.017	.
	N	83	83	83	83	83	83	83	83

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 6.6b Correlation Matrix of Final Indicators (Structural Equation Method)

	PE1	PE2	FO1	FO2	EG1	EG2	Trust 1	Trust 2	Trust 3	Com1	Com2	Role Int 1	Role Int 2	Role Int 3	Flex 1	Flex 2	Perf1	Perf2
PE1	1.00																	
PE2	0.54	1.00																
FO1	0.28	0.24	1.00															
FO2	0.28	0.27	0.68	1.00														
EG1	-0.06	-0.01	0.26	0.38	1.00													
EG2	-0.08	-0.12	0.24	0.30	0.85	1.00												
Trust 1	0.36	0.20	0.42	0.19	0.10	0.04	1.00											
Trust2	0.34	0.15	0.40	0.22	0.02	0.02	0.83	1.00										
Trust 3	0.33	0.11	0.43	0.27	0.08	0.14	0.77	0.77	1.00									
Com1	0.49	0.31	0.46	0.55	0.17	0.22	0.46	0.46	0.51	1.00								
Com2	0.45	0.32	0.45	0.37	0.08	0.14	0.47	0.46	0.46	0.78	1.00							
Role Int 1	0.03	-0.09	0.03	0.08	0.27	0.23	-0.14	-0.16	-0.10	0.09	0.05	1.00						
Role Int 2	-0.06	-0.13	-0.02	-0.08	0.22	0.19	-0.10	-0.26	-0.19	-0.04	-0.01	0.74	1.00					
Role Int 3	0.0.8	-0.04	0.09	0.07	0.29	0.26	-0.02	-0.12	-0.02	0.08	0.11	0.85	0.72	1.00				
Flex 1	0.15	0.28	0.53	0.37	0.20	0.15	0.19	0.05	0.19	0.29	0.16	-0.08	-0.04	0.02	1.00			
Flex 2	0.14	0.26	0.51	0.36	0.25	0.20	0.24	0.07	0.25	0.29	0.16	-0.13	-0.08	0.01	0.93	1.00		
Perf1	0.24	0.12	0.42	0.40	0.27	0.23	0.45	0.44	0.44	0.47	0.45	-0.02	-0.07	0.07	0.26	0.27	1.00	
Perf2	0.19	0.11	0.46	0.39	0.27	0.28	0.42	0.44	0.45	0.49	0.46	-0.04	-0.11	0.04	0.22	0.26	0.94	1.00

2. Collaborative Interest Model of Relational Coordination

This section presents the results of tests conducted in relation to hypotheses one through to five. First, hypotheses one to five, as presented in chapter five, are examined using ordinary least squares regression. For these analyses the indicators for each construct are summed to provide a single measure. In the second part of this section, the results of structural equation modelling are presented.

2.1. Regression Results

The results of examining hypotheses one to five using regression analyses are presented in table 6.7 along with the relevant R^2, standardised beta and significance (significant results are shaded). While a discussion of the general implications of these results is provided in chapter eight, the results of hypothesis tests and their impact on the derivation of a collaborative interest model are discussed here under headings for sub-models A and B. This discussion of specific results also sets the scene for the structural equation model results, presented in the final section.

2.1.1. Sub-model A

The tests of hypotheses reported in this section examine direct associations with the dependent variable: relationship performance. As a result, the hypotheses are discussed in a different order than originally proposed.

2.1.1.1. Hypothesis One

Hypothesis One examines the association between economic goals and relationship performance. A significant result was found: economic goals explaining 8.2% of variance in relationship performance (p=0.009). Thus, self-interest plays, as expected, some part in explaining relationship performance. Exactly how self-interest is associated with relationship performance may be elucidated by later results.

Table 6.7 Regression Analyses results of Hypotheses One to Five

Sub Model A *					
Hypotheses	**Dependent Variable**	**Independent Variable/s**	**R^2**	**Standardised ß**	**Signif**
Hypothesis 1	Relationship performance	Economic goals	0.082	0.287	0.009
Hypothesis 3a	Relationship performance	Trust	0.241	0.491	0.000
Hypothesis 3b	Relationship performance	Commitment	0.254	0.504	0.000
Hypothesis 3c	Relationship performance	Role Integrity	-0.012	-0.022	0.845
Hypothesis 3d	Relationship performance	Flexibility	0.068	0.261	0.017
Hypothesis 3e	Relationship performance	Trust	0.305	0.310	0.006
		Commitment		0.337	0.003
		Role Integrity		0.004	0.965
		Flexibility		0.132	0.166
Sub Model B *					
Hypotheses	**Dependent Variable**	**Independent Variable/s**	**R^2**	**Standardised ß**	**Signif**
Hypothesis 2a	Trust	Economic goal	-0.004	0.093	0.404
Hypothesis 2b	Commitment	Economic goal	0.034	0.183	0.097
Hypothesis 2c	Role Integrity	Economic goal	0.080	0.282	0.010
Hypothesis 2d	Flexibility	Economic goal	0.054	0.232	0.035
Hypothesis 4a	Trust	Past experience	0.028	0.200	0.070
Hypothesis 4b	Commitment	Past experience	0.135	0.381	0.000
Hypothesis 4c	Role Integrity	Past experience	0.003	0.057	0.609
Hypothesis 4c	Flexibility	Past experience	0.040	0.227	0.039
Hypothesis 5a	Trust	Future Orientation	0.175	0.430	0.000
Hypothesis 5b	Commitment	Future Orientation	0.280	0.537	0.000
Hypothesis 5c	Role Integrity	Future Orientation	0.006	0.075	0.498
Hypothesis 5d	Flexibility	Future Orientation	0.191	0.449	0.000
* Hypotheses are considered according to dependent variable: Model A – Relationship Performance, Model B – Relational Norms					

2.1.1.2. Group Three Hypotheses

The third group of hypotheses deals with the way relational norms are connected with relationship performance. Regression analyses shows that trust and commitment (hypotheses 3a, 3b) explained 24.1% and 25.4% of relationship performance respectively (p=0.000 and p=0.000). This is consistent with past research (Ganesan 1994; Morgan and Hunt 1994; Håkansson and Snehota 1995).

The result concerning hypothesis 3c is interesting: no association was found between role integrity and relationship performance. This is contrary to Macneil's (1980) theory of relational norms and, as such, is worthy of note. There are three important points to be made concerning this result. First, as there is no direct relationship, one of the other relational norms or some other unknown variable must mediate role integrity's influence on relationship performance. However, as role integrity is not correlated with either trust, commitment or flexibility (see table 6.6a) this only leaves communication and conflict harmonisation as possible contenders. Second, it may be that role integrity is not a required relational norm for achieving relationship performance measured in an economic sense. Rather, role integrity may be related to another relationship outcome such as long-term relationship adaptability. However, if role integrity was linked to long-term adaptability, one would also expect some association with relationship performance, as a link between long-term relationship adaptability and economic performance could be reasonably expected. Third, it may be that the measurement of role integrity was not faithful to Macneil's (1980) interpretation. If this is the case, much of the governance literature needs to be re-examined as role integrity has often been used as part of a composite indicator of relational coordination.

That role integrity is not significantly associated with trust, commitment, flexibility or relationship performance (see table 6.6a) means that it may not play a part in our collaborative interest model of relational coordination.

The association between flexibility and relationship performance (hypothesis 3d) was found to be positive and significant. However, only 6.8% of relationship performance variance was explained by flexibility. Given that flexibility is correlated with economic goals and commitment (table 6.6a), this result suggests that flexibility is likely to

influence relationship performance through some other mediating variable. The result concerning hypothesis 3e further supports this inference.

Hypothesis 3e examines how the relational coordination constructs, in aggregate, explain relationship performance. This was tested using stepwise-multiple regression, with variables added and removed from analysis in steps according to their probability of F statistic (Coakes and Steed 1999). The result of this analysis was the removal of role integrity and flexibility, so that trust and commitment remained to explain 30.5% of the variance in relationship performance (p=0.006 and p=0.003 respectively). Thus, trust and commitment together explained more variation in relationship performance, than either of the two alone (see table 6.7). Furthermore, the removal of flexibility adds weight to the argument that its impact upon relationship performance is mediated by other variables.

In conclusion with regard to proposition 3, it appears that higher levels of relational norm development in the case of trust, commitment and flexibility lead to higher relationship performance. Role integrity must be removed from the collaborative interest model, unless it is associated in a more complex linkage through other mediating variables. The influence of flexibility upon relationship performance is likely to be only felt through other mediating relational norms.

2.1.2. Sub-model B

Hypotheses discussed in this section examine associations between the antecedents of relational norm development and relational norms as the dependent variable.

2.1.2.1. Group Two Hypotheses

These hypotheses examine the role of economic goals upon the relational norm constructs.

Testing for Hypothesis 2a finds that economic goals do not have a significant effect upon the development of trust in a relationship (p=0.404). Thus, hypothesis 2a is not supported. Likewise, economic goals have no influence upon the development of commitment (p=0.097). Thus, hypothesis 2b is not supported. Together these two

results are important for they indicate that self-interest does not directly influence the development of these two central constructs of relational coordination.

Testing of Hypothesis 2c found a significant association between economic goals and role integrity (p=0.010). However, economic goals only explained 8% of variance of role integrity. This, in conjunction with previous results, suggests that the role integrity construct and/or related theory require further examination. That role integrity is associated with the self-interest of the firm, may also suggest that integration is only carried as far as needed to achieve the firm's ends. If this is so, then role integrity is not part of relational coordination. These issues will be addressed further in chapter eight.

With regard to the association between economic goals and flexibility (Hypothesis 2d) a significant result is found (p=0.035), but with only 5.4% of variance explained. That this association is significant is important, however, for it appears to indicate that flexibility is aligned with self-interest. Thus, firms are flexible when they need to be, rather than as a means of pursuing joint interest.

In summary, the proposition that self-interest has a positive influence on relational norm development received mixed support in this study as economic goals are not associated with either trust or commitment: rather, there is a weak linkage with role integrity and flexibility. That economic goals are not associated with trust and commitment is noteworthy, for if these relational norms are intrinsic to the operation of relational coordination then self-interest is not. Two possibilities exist with regard to the impact of self-interest on relational coordination. First, self-interest may play a more complex role in shaping relational coordination, with economic goals leading to the development of greater levels of role integrity and flexibility. However, if this is the case, some other variable, such as long-term relationship adaptability, is required to explain how role integrity and flexibility relate to relationship performance. The second possibility is that self-interest has more to do with other forms of coordination and is only important in the initial decision to rely on relational coordination, rather than as an on-going determinant of how relational coordination proceeds. In either case, it seems that Macneil's (1980) theory of relational norms needs closer examination to account for the difference between self and collective interest.

2.1.2.2. *Group Four Hypotheses*

These hypotheses examine the role of past experience with joint action upon the development of relational norm.

Testing of Hypothesis 4a found that past experience did not have a significant effect upon the development of trust in a relationship (p=0.070), with only 2.8% of variance explained. Thus, Hypothesis 4a was unsupported. Past experience with joint action does not lead to trust in the present relationship.

On the other hand, testing of Hypothesis 4b found a significant and positive association between past experience and commitment to the present relationship, with 13.5% of variance being explained (p=0.000). Thus, Hypothesis 4b is supported and empirical evidence is provided for Wilson's (1995) suggestion that level of experience influences the ability of parties to form relationships.

Testing of Hypothesis 4c found no significant association between past experience and role integrity. Thus, it appears that experience with past joint action, contrary to theoretical expectations, does not lead to higher levels of integration in the present relationship.

With regard to the association between past experience and flexibility (Hypothesis 4d) a significant result was found (p=0.039) with experience in past joint action explaining 4% of variance in flexibility. Thus, Hypothesis 4d was supported, but the strength of the relationship was very weak. This result suggests that past experience with joint activity in other relationships has only a marginal influence on flexibility in the current relationship.

In conclusion, the proposition that past experience with joint action leads to higher levels of relational norm development is only strongly supported with regard to the development of commitment. However, this is an important result for it is known that commitment is central to relational coordination (Morgan and Hunt 1994). It is important for two reasons. First, the past experience construct is easily operationalised by management, so choosing partners with more experience can lead to a greater commitment to the relationship. Second, this opens a clear path for future research into one antecedent of relationship commitment.

2.1.2.3. Group Five Hypotheses

These hypotheses examine the role of future orientation (ie the strategic importance of the relationship) upon the relational norm constructs.

Hypothesis 5a is supported with 17.5% of variance in trust explained by future orientation (p=0.000). The importance of future orientation upon the development of commitment is also significant (p=0.000), with 28% of variance in commitment being explained. Thus, Hypothesis 5b is supported.

Testing of Hypothesis 5c found no significant association between future orientation and role integrity. This is surprising for one would expect the importance of a relationship strategy to lead to higher levels of role integrity between two firms. This is an important result, especially given the strength of the measurement model and the association with economic goals. It suggests that the role integrity construct and the related theory deserve closer attention. One possibility is that role integrity is associated with forms of hierarchical coordination.

With regard to the association between future orientation and flexibility (Hypothesis 5d) a significant result was found (p=0.000) with 19.1% of variance explained. Thus, Hypothesis 5d was supported. This is interesting when considered in conjunction with the previously discussed association between economic goals and flexibility. Together, these results suggest that flexibility is a consequence of self-interest and the importance of the relationship to the firm.

In conclusion, the proposition that future orientation leads to higher levels of relational norm development is supported with regard to development of trust, commitment and flexibility. This is an important result: future orientation is clearly found to be an antecedent of the two known relational coordination variables: trust and commitment. However, as flexibility is not associated with trust and the association with commitment is significant, but not strong, this result in conjunction with support for Hypothesis 3c tends to suggest that flexibility is linked more closely with self-interest or is an antecedent of relational coordination. If flexibility is more closely aligned with self-interest, and this is in line with the argument of chapter two, then it is an element of either market or hierarchical coordination.

2.2. Summary

The results of our tests for hypotheses one to five suggest that role integrity and flexibility are not essential elements of relational coordination. Rather, these constructs may be more closely aligned with market and/or hierarchical coordination mechanisms at work within the relationships sampled for this study. While these results deserve close attention and discussion, it is enough to note here, that role integrity is not significantly associated with either commitment or trust, whereas flexibility is significantly associated with commitment (p=0.027), but not trust (p=0.103).

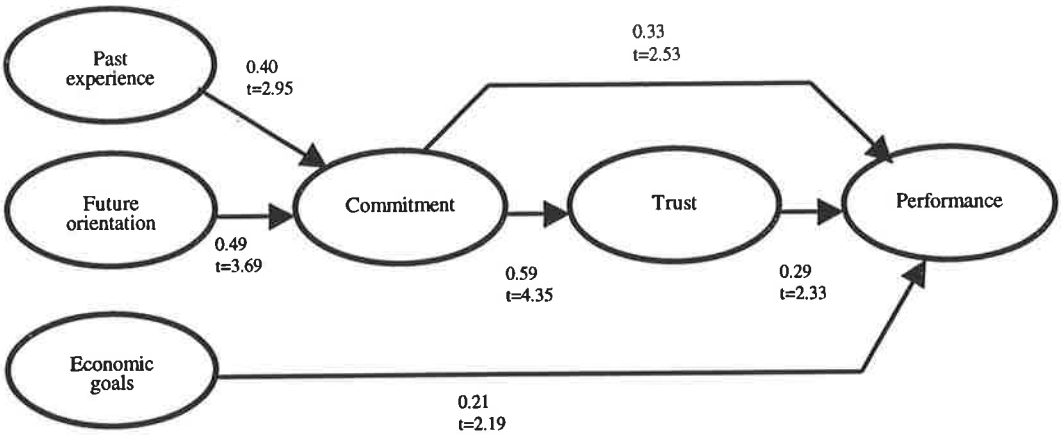
An important point, worth re-iterating, is that interpretation of these results in this way has only been possible because of the collaborative interest model, which attributes causality across two levels of aggregation. Within this causal framework, and applying the concept of high order coordination mechanisms, it appears that the function of role integrity and flexibility in relational coordination is unclear. Given these uncertainties, and in-order to address the remaining issue of interaction between relational norm constructs, the next section reports on the use of structural equation modelling to examine relational norm constructs in a collaborative interest setting. This analysis results in the identification of a collaborative interest model that may be used to test hypotheses concerning both parties to a relationship (ie hypotheses six to fifteen).

3. Structural Equation Model Results and Discussion

A stepwise strategy was used to seek a parsimonious collaborative interest model (Kaplan 1990). Thus, constructs and paths were reduced in number as a more complete model was sought that explained the correlation matrix of indicators. The importance of Trust and Commitment in past research suggested that these two constructs should be retained. On the other hand, role integrity was removed from analysis as suggested by the modification indexes and expected parameter change statistics. The previous regression analysis also strongly supported the removal of role integrity as many fewer significant associations were found with other variables. Finally, flexibility was also removed from analysis as a result of the modification indexes and expected parameter change statistics. The final Lisrel output is contained in appendix H.

The RMSEA of the final global model (see figure 6.1) is 0.049 with a 90% confidence interval extending from 0.000 to 0.088. The Chi-square statistic (67.06) with 56 degrees of freedom is also acceptable (p = 0.15). These measures suggest that the model has a "correct fit". That is, the hypotheses constraining the parsimonious model comply with the observed phenomena. Moreover, as indicated by the R^2 of the performance equation, the collaborative interest model predicts 40% of the relationship performance. Although 60% remains to be predicted, this can be considered a satisfactory result given the parsimony of the model. Finally, it is noteworthy that the t values of the parameters are also significant at the 95% level of confidence (see table 6.8). This suggests that a larger sample would result in higher significance levels.

Figure 6.1 Final Paths



3.1. Discussion

In the final collaborative interest model, two main paths explain relationship performance. The first is the *relational coordination* path, which contains the constructs of relationship experience, future orientation, commitment and trust. In this relational coordination path to performance, past relationship experience and the strength of future orientation to the relationship explain commitment (R^2=0.55); while commitment leads, either directly or via trust to performance. The second path, hereafter-coined *market coordination*, contributes 18.6% to the variance of performance according to the squared parameters.

Table 6.8 Structural Model Results

	Item	Lambda	t-value	R^2
Past experience	1	0.90	6.94	0.81
	2	0.60	5.04	0.36
Future orientation	1	0.78	7.52	0.60
	2	0.87	8.54	0.76
Economic goal	1	0.96	9.49	0.81
	2	0.89	8.69	0.79
Commitment	1	0.93	7.64	0.86
	2	0.84	7.38	0.71
Trust	1	0.90	9.57	0.81
	2	0.91	9.66	0.83
	3	0.85	8.88	0.72
Performance	1	0.96	10.93	0.92
	2	0.97	10.91	0.94
Note: Interfactor correlations are as follows: Past experience and Future orientation: ϕ=0.39 (t=3.21) Past experience and Economic goal: ϕ=-0.08 (t=-0.61) Future orientation and Economic goal: ϕ=0.41 (t=3.81)				

As might be expected, future orientation is slightly more important than past relationship experience in explaining commitment (β=0.49 and β=0.40 respectively). In addition, future orientation was more important than past experience in explaining the indirect effects on trust (0.29 and 0.24 respectively) and performance (0.25 and 0.20 respectively). These results reflect the nature of the construct measures with future orientation focused on the present relationship, whereas past experience reflects joint action with other relationships. That commitment precedes trust in the relational coordination pathway, contrary to the findings of Morgan and Hunt (1994), stems from the importance of future orientation and past experience upon commitment relative to trust. Such a statement can only be made within the causal framework of the collaborative interest model. Further discussion of this issue is presented in chapter eight.

4. Limitations

The results reported in this chapter suffer from a number of limitations.

First, the sample size of 83 relationships may be considered a limitation, for this constrained the number of constructs that could be examined. Thus, while these results would be replicated with a larger sample, it would also be possible to examine associations with other constructs. In this sense, these results must be considered as tentative and subject to further replication.

A second limitation was inherent in the conceptualisation of the performance variable. Relationship performance was conceptualised in terms of economic performance by the

relationship and it was finally measured in terms of market share and market share growth of the relationship within the home market for the distributors/agents and the export market for the principals. While this measure accounts for the interaction effects between the parties in that the outcome of relational coordination is measured at the relationship level, it does not necessarily measure the success of a relationship in strategic terms from the firm's perspective. In addition, it does not measure the effect of the relationship with regard to network positioning. Yet many relationships are continued simply for their strategic gain (Håkansson and Snehota 1995). This may, in part, explain the relative unimportance of economic goals as antecedents of relationship performance, for economic goals may be more closely aligned with the strategic outcomes of relationships at a firm and network level.

It is possible to argue in a similar fashion that the measurement of self-interest as the economic goals of a firm may also be a limitation of the research. Thus, self-interest extends beyond economic goals to include strategic considerations such as access to resources or customers. However, in a sense this limitation is mitigated by the situation of the sample firms who are all directly engaged in relationships for either access to customers for economic gain (ie the principals), or for access to resources for economic gain (ie distributors/agents seek software resources).

5. Conclusion

The results of the regression and structural equation modelling analyses suggest a parsimonious collaborative interest model that is now available for testing the dyadic level hypotheses. Chapter seven presents the results of the examination of the dyadic hypotheses. However, the analyses leading to the collaborative interest model are noteworthy and are, therefore, discussed with reference to past literature and future research in chapter eight.

Chapter Seven – Dyadic Model and Dyadic Classes: Empirical Results

This chapter presents the results of testing hypotheses six to fourteen. The first section addresses hypotheses six to ten. These hypotheses are based on dyadic level constructs and they examine the model of actor bond structures and their effects on relationship performance and dissonance. The second section of the chapter reports on regression analysis used to test hypotheses eleven to fourteen. These hypotheses examine different relationship classes as determined by a segmentation of the dyads based on the variables of relationship performance and dissonance.

1. Actor Bond Structures Results

This first section presents the results of testing hypotheses six to ten. These hypotheses examine the form of the actor bonds structures as they relate to each other and to the dimensions of relationship performance and dissonance. Table 7.1 presents the results of regression analyses undertaken to test hypotheses six to ten, using dyadic data. Significant results have been shaded so they may be quickly distinguished from non-significant results.

In each sub-section below, apart from discussing the results of the regression analyses, comment is also made about the change in variance explained as the analysis is moved to the dyadic level. Dyadic analysis, based on summed (ie averaged) data, not only subsumes, and therefore reflects, firm level analysis; but in addition provides an indication of the interaction effect between a pair of firms. Thus, the difference in variance explained, between firm and dyadic level analyses, gives an indication of the importance of the effects of interaction between the two parties as well as the relative importance of a construct at each level of analysis.

1.1. Group Six Hypotheses

Hypotheses in this group examine direct associations between self-interest structure and the relationship dimensions of performance and dissonance.

Table 7.1 Regression Analyses Results of Hypotheses Six to Ten

Hypotheses	Dependent Variable	Independent Variable/s	R^2	ß (stand)	Signi f
Hypothesis 6a	Relationship performance	Economic Goal Magnitude	0.115	0.339	0.050
Hypothesis 6b	Relationship performance	Economic Goal Asymmetry	0.004	-0.067	0.708
Hypothesis 6c	Relationship Dissonance	Economic Goal Magnitude	0.000	0.003	0.293
Hypothesis 6d	Relationship Dissonance	Economic Goal Asymmetry	0.000	0.003	0.986
Hypothesis 7a-1	Relationship performance	Trust Magnitude	0.395	0.692	0.000
Hypothesis 7a-2	Relationship performance	Commitment Magnitude	0.387	0.622	0.000
Hypothesis 7a-3	Relationship performance	Flexibility Magnitude	---		
Hypothesis 7b-1	Relationship performance	Trust Asymmetry	0.109	0.330	0.056
Hypothesis 7b-2	Relationship performance	Commitment Asymmetry	0.045	0.212	0.229
Hypothesis 7b-3	Relationship performance	Flexibility Asymmetry	---		
Hypothesis 7c-1	Relationship Dissonance	Trust Magnitude	0.030	0.172	0.331
Hypothesis 7c-2	Relationship Dissonance	Commitment Magnitude	0.128	0.358	0.037
Hypothesis 7c-3	Relationship Dissonance	Flexibility Magnitude	---		
Hypothesis 7d-1	Relationship Dissonance	Trust Asymmetry	0.000	-0.018	0.918
Hypothesis 7d-2	Relationship Dissonance	Commitment Asymmetry	0.025	0.157	0.376
Hypothesis 7d-3	Relationship Dissonance	Flexibility Asymmetry	---		
Hypothesis 8a-1	Trust Magnitude	Past Experience Magnitude	0.042	0.204	0.247
Hypothesis 8a-2	Commitment Magnitude	Past Experience Magnitude	0.270	0.520	0.002
Hypothesis 8a-3	Flexibility Magnitude	Past Experience Magnitude	---		
Hypothesis 8b-1	Trust Magnitude	Past Experience Asymmetry	0.000	-0.014	0.938
Hypothesis 8b-2	Commitment Magnitude	Past Experience Asymmetry	0.079	0.281	0.108
Hypothesis 8b-3	Flexibility Magnitude	Past Experience Asymmetry	---		
Hypothesis 8c-1	Trust Asymmetry	Past Experience Magnitude	0.019	0.137	0.441
Hypothesis 8c-2	Commitment Asymmetry	Past Experience Magnitude	0.024	0.153	0.386
Hypothesis 8c-3	Flexibility Asymmetry	Past Experience Magnitude	---		
Hypothesis 8d-1	Trust Asymmetry	Past Experience Asymmetry	0.027	0.163	0.357
Hypothesis 8d-2	Commitment Asymmetry	Past Experience Asymmetry	0.014	0.120	0.499
Hypothesis 8d-3	Flexibility Asymmetry	Past Experience Asymmetry	---		
Hypothesis 9a-1	Trust Magnitude	Future Orientation Magnitude	0.460	0.678	0.000
Hypothesis 9a-2	Commitment Magnitude	Future Orientation Magnitude	0.419	0.647	0.000
Hypothesis 9a-3	Flexibility Magnitude	Future Orientation Magnitude	---		
Hypothesis 9b-1	Trust Magnitude	Future Orientation Asymmetry	0.269	0.518	0.002
Hypothesis 9b-2	Commitment Magnitude	Future Orientation Asymmetry	0.258	0.508	0.002
Hypothesis 9b-3	Flexibility Magnitude	Future Orientation Asymmetry	---		
Hypothesis 9c-1	Trust Asymmetry	Future Orientation Magnitude	0.132	0.363	0.035
Hypothesis 9c-2	Commitment Asymmetry	Future Orientation Magnitude	0.045	0.212	0.229
Hypothesis 9c-3	Flexibility Asymmetry	Future Orientation Magnitude	---		
Hypothesis 9d-1	Trust Asymmetry	Future Orientation Asymmetry	0.050	0.224	0.203
Hypothesis 9d-2	Commitment Asymmetry	Future Orientation Asymmetry	0.075	0.274	0.116
Hypothesis 9d-3	Flexibility Asymmetry	Future Orientation Asymmetry	---		
Hypothesis 10a-1	Trust Magnitude	Economic Goal Magnitude	0.019	0.139	0.432
Hypothesis 10a-2	Commitment Magnitude	Economic Goal Magnitude	0.015	0.123	0.488
Hypothesis 10a-3	Flexibility Magnitude	Economic Goal Magnitude	---		
Hypothesis 10b-1	Trust Magnitude	Economic Goal Asymmetry	0.001	-0.038	0.830
Hypothesis 10b-2	Commitment Magnitude	Economic Goal Asymmetry	0.005	-0.070	0.695
Hypothesis 10b-3	Flexibility Magnitude	Economic Goal Asymmetry	---		
Hypothesis 10c-1	Trust Asymmetry	Economic Goal Magnitude	0.003	-0.053	0.767
Hypothesis 10c-2	Commitment Asymmetry	Economic Goal Magnitude	0.023	-0.151	0.394
Hypothesis 10c-3	Flexibility Asymmetry	Economic Goal Magnitude	---		
Hypothesis 10d-1	Trust Asymmetry	Economic Goal Asymmetry	0.014	-0.120	0.498
Hypothesis 10d-2	Commitment Asymmetry	Economic Goal Asymmetry	0.007	0.081	0.648
Hypothesis 10d-3	Flexibility Asymmetry	Economic Goal Asymmetry	---		

The only hypothesis supported in this group relates to the association between economic goal magnitude and relationship performance (ie Hypothesis 6a). In total, 11.5% of the variance in relationship performance is explained by the magnitude of economic goals in the dyad (p=0.050). This result is no surprise: it is a reflection, at a dyadic level, of the firm level collaborative interest model.

That relationship performance was not explained by asymmetry of economic goals and that relationship dissonance was not explained by either economic goal magnitude or asymmetry indicates that differences in perspective across a dyad may not be important, at least for economic goals. However, the significant result for economic goal magnitude suggests that self-interest plays some part in either beginning or supporting the interaction that leads to relationship performance.

The level of difference in variance of relationship performance explained by economic goals as the analysis moves from the firm to the dyadic level is negligible. At the firm level, economic goals explained 8.2% of variance in relationship performance; whereas 11.5% of variance was explained when dyadic analysis was conducted. This suggests that self-interest structure is not very important as an element of relational coordination and that interaction between the self-interest of the parties does not determine the self-interest structure of the dyad.

1.2. Group Seven Hypotheses

The hypotheses in this group examine direct associations between relational norm structures and the relationship dimensions of performance and dissonance. The only attributes of relational norm structure examined are those related to trust and commitment. Flexibility was removed from further analysis as an outcome of the preliminary analysis presented in chapter six.

The first two hypotheses in this group were supported (ie Hypotheses 7a-1, 7a-2), with relationship performance being explained by trust magnitude (p=0.000) and commitment magnitude (p=0.000). Trust magnitude explained 39.5% of variation in relationship performance, while commitment magnitude explained 38.75% of variation in relationship performance. These results suggest a strong association between a dyad's performance and the relational norm structure's aspects of trust magnitude and

commitment magnitude. Importantly, when compared to the firm level analysis, where variance explained was 24.1% and 25.4% respectively, these results indicate that magnitude of trust and commitment are important elements of relational coordination and that the interaction effect between the parties is important in explaining relationship performance.

With regard to relationship dissonance, only one hypothesis in this group was supported (Hypothesis 7c-2). A reasonably strong association was found between commitment magnitude and relationship dissonance, with 12.8% of variance explained (p=0.037). Thus, dyads with high levels of commitment magnitude are more likely to disagree on relationship performance. This seems to indicate that when both parties are committed they are willing to accept differences in relationship performance, at least in the short-term.

Overall, the propositions that higher magnitudes of relational norm structure leads to a higher level of relationship performance is accepted, in the case of trust and commitment; while higher magnitudes of relational norms leading to larger relationship dissonance is accepted only in the case of commitment. It appears that asymmetry in relational norm structure does not play a part in explaining relationship performance or dissonance, with neither asymmetry of trust or commitment related to relationship performance or dissonance. In part, this reflects the nature of the sample, which is composed of continuing relationships, where one would expect fewer dyads with high levels of asymmetry on trust and commitment.

1.3. Group Eight Hypotheses

The hypotheses in this group look at the association between past experience and relational norm structures.

Only one hypothesis is supported in this group (Hypothesis 8a-2). Thus, the magnitude of past experience in joint activity within a dyad explains 27% of the commitment magnitude evident within relational norm structure (p=0.002). This compares with 13.5% of variance explained at the firm level of analysis, suggesting that the length and nature of past experience is an important variable in determining relational norm structure and that the interaction between parties' past experience can lead to stronger relational norm structure.

Hypothesis 8a-1, which was not supported, replicates the firm level analysis, which demonstrated that past experience with joint activity in other relationships had no significant influence on trust in the present relationship. This suggests that trust is not based on all past experience, but centres on experience in the current relationship. In addition, this suggests that interaction between firms' past experience is not a factor in trust formation. That trust is limited, and does not arise from a firm's past experience with other firms, offers support for Rempel's (1986) hypothesis that trust is limited and must be discussed within specific contexts.

What is interesting is that past experience asymmetries do not appear to explain relational norm structure (magnitude and asymmetry) at all. Thus, differences in past experience with joint activity across the dyad do not appear to influence development of relational norm structure in the present relationship. This is a noteworthy result, especially when considered alongside the influence of past experience magnitude upon commitment magnitude, as it indicates differences in past experience are not important to the development of actor bonds. This suggests that an experienced partner can contribute significantly to the formation of sound actor bonds by compensating for the inexperienced party's lack of skills. This result, however, does not allow any inference to be made about the long-term results of compensatory behaviour upon power balance, which naturally remains contingent in nature.

1.4. Group Nine Hypotheses

This group of hypotheses examines the association between future orientation and relational norm structure. There are three sets of interesting results in this group.

First, Hypotheses 9a-1 and 9a-2 are both found to be significant (p=0.000 and p=0.000 respectively). Thus, the magnitude of future orientation present in a dyad leads to higher levels of trust and commitment magnitude. The level of total future orientation in a dyad explains 46% of trust magnitude and 41.9% of commitment magnitude in a dyad, whereas at the firm level of analysis, the variance explained was 17.5% and 28% respectively. This indicates that the magnitude of future orientation is important in the development of relational norm structure and that the quality of interaction between parties' future orientation is also important in generating relational norm structure.

In addition, the difference in the relative variance explained in trust and commitment magnitude as the analysis shifted from firm to dyadic level seems to indicate a central role for the interaction of firms' future orientations in forming trust magnitude at the dyad level. While this increase in the explained variance reflects the close and intertwined nature of relational constructs, it more importantly highlights the variation in results that occurs according to level of analysis. This opens an interesting area in dyadic research, for that there are differences according to level of analysis suggests a need to examine both firm and dyad level constructs to explain relationships.

Second, examination of Hypotheses 9b-1 and 9b-2 found significant results. As expected, as future orientation asymmetry increased, the level of trust and commitment magnitude decreased. The asymmetry of future orientation explained 26.9% of the variance in the magnitude of trust ($p=0.002$) and 25.8% of commitment magnitude ($p=0.002$). A comparison of this result with firm level analysis is not possible directly. However, the level of explained variance compares favourably with other firm level associations between constructs. This suggests that interaction between the parties' levels of future orientation is important in explaining relational norm structure.

Third, support was found for Hypothesis 9c-1: future orientation magnitude explained 13.2% of variance in asymmetry of trust ($p=0.035$). Thus, dyads where both firms focus upon maintaining the relationship exhibited low levels of trust asymmetry. Conversely, where there is an asymmetry of future orientation, a lack of trust between the parties results as suspicions of opportunism arise.

This is an important finding: in conjunction with the previous results in this group it suggests that the future orientation structure, composed of magnitude and asymmetry, is more important in the formation of trust as a relational norm, than it is in the formation of commitment. This is in direct contrast to the findings of the firm level analyses reported in chapter six. This is a critical conclusion, which indicates that the firm level analysis is incomplete, as it does not account for the interaction effects between parties. Dyadic research on the role of future orientation, its dyadic structure and how it influences both trust and commitment clearly requires further attention.

1.5. Group Ten Hypotheses

This group of hypotheses examined the association between economic goal structure and relational norm structure. Testing of Proposition 10, in all forms, resulted in no significant support for any hypotheses. This indicates that the dyadic self-interest structure is not associated with the development of relational norm structure in continuing relationships. However, as flexibility was not examined, it should be noted that, a more complex association might be present between self-interest structure and relational norm structure development.

1.6. Conclusion

While many of the hypotheses examined in this section were not supported, enough key hypotheses were supported to contend that actor bond structures interact to explain elements of relationship performance and dissonance.

In addition, the supported hypotheses together offer evidence of the need to account for differences between parties when studying business dyads. That is, testing of Hypotheses 9b-1 and 9b-2 shows that asymmetry of future orientation influences magnitude of trust and commitment, while conversely, testing of Hypothesis 9c-1 shows that magnitude of future orientation influences the asymmetry of trust. These are significant findings: the evidence that the asymmetry of structure can influence the magnitude of another structure, and vice versa, vindicates the importance of studying the difference between parties when examining dyads.

A third, and very important, conclusion that may be inferred from these results is the importance of dyadic research in accounting for the effects of interaction between specific partners. Past research that reports on only one side of a dyad incompletely accounts for interaction effects. Yet, hypotheses supported in group seven, eight and nine all show marked improvement in the variance explained of the dependent variable, compared to the firm level models. This warrants a continuing pressure to conduct dyadic research.

Finally, the greater relative importance of future orientation in explaining trust magnitude at the dyadic level, as compared to commitment magnitude, suggests that

future research should be directed at understanding how constructs are associated differently at various levels of aggregation.

The next section reports the testing of the remaining hypotheses, which examine relationship classes.

2. Hypotheses Examining Relationship Classes

Since not all actor bond constructs are necessarily active in any given dyad, it is possible to identify classes of relationships. This section reports on the segmentation of the dyadic data according to a mean split of the two dyadic performance dimensions: relationship performance and dissonance. This resulted in the formation of four segments (see figure 7.1). As the number of independent variables explaining each relationship dimension was only likely to be one or two, the limited number of cases in each segment allowed the use of regression analysis (Coakes and Steed 1999). However, as the number of dyads is low (34), the results in this section must be considered as tentative.

Figure 7.1 Membership of Dyad Classes

		Relationship Dissonance	
		Mutual	**Disconnected**
Relationship Performance	**Inert**	8	9
	Performing	11	6

The regression models within the four segments thus created are displayed in table 7.2 and 7.3. Table 7.2 displays the regression models when performance dimensions are the dependent variables. Table 7.3 displays the subsidiary regression models for mutually performing relationships, where magnitude of trust and commitment are the dependent variables. There are no subsidiary regression models for the other relationship classes as economic goal structure is an independent variable in the dyadic model.

In the dyadic model reported in section one of this chapter, using relationship performance as the dependent variable, the sum of squares error was 742.646 and R^2 was 0.477. However, when a four-segment approach is taken, the global sum of square error over the four models is reduced to 245.598 and the global R^2 improves to 0.827. Such a reduction in the sum of squared error and improvement in variance explained was to be expected with smaller segments. For the dyadic model, using relationship dissonance as its dependent variable, the sum of squares error was 195.264 and R^2 was

Table 7.2 Summary of Segments – Relationship Dimensions as Dependent Variables

Relationship Class	Active Constructs Dependent Variable	Independent Variable	Beta	Significance	Sum of Squared Error	Adjusted R^2
Mutual Performing	Relationship Performance	Trust Magnitude	0.665	0.026	99.500 $_1$	0.380
	Relationship Dissonance	Commitment Magnitude	0.685	0.020	6.761 $_2$	0.410
Mutual Inert	Relationship Performance	Economic Goal Asymmetry	-0.710	0.049	73.869 $_1$	0.421
	Relationship Dissonance	No model found			15.880 $_2$	
Disconnected Inert	Relationship Performance	No model found			68.220 $_1$	
	Relationship Dissonance	Economic Goal Asymmetry	-0.779	0.013	13.357 $_2$	0.551
Disconnected Performing	Relationship Performance	Economic Goal Magnitude	0.829	0.041	4.009 $_1$	0.610
	Relationship Dissonance	No model found			4.830 $_2$	
1 – Global Sum of Squares Error for Model with dependent variable Relationship Performance is 245.598 2 – Global Sum of Squares Error for Model with dependent variable Relationship Dissonance is 40.828						

Table 7.3 Mutual Performing – Trust and Commitment Structure as Dependent Variables

Relationship Class	Active Constructs Dependent Variable	Independent Variable	Beta	Significance	Sum of Squared Error	Adjusted R^2
Mutual Performing	Trust Magnitude	Future Orientation Asymmetry	0.794	0.003	116.111	0.590
	Commitment Magnitude	Future Orientation Magnitude	0.765	0.000	103.628	0.540

0.128, while with four segments the global sum of squares error was reduced to 40.828and R^2 improves to 0.818.

Together these results indicate that a four-segment solution provides far greater explanation of the dyadic data than does a global treatment. The next part of this chapter discusses the results of this segmentation with regard to hypotheses eleven to fourteen.

2.1. Results of Hypotheses Tests

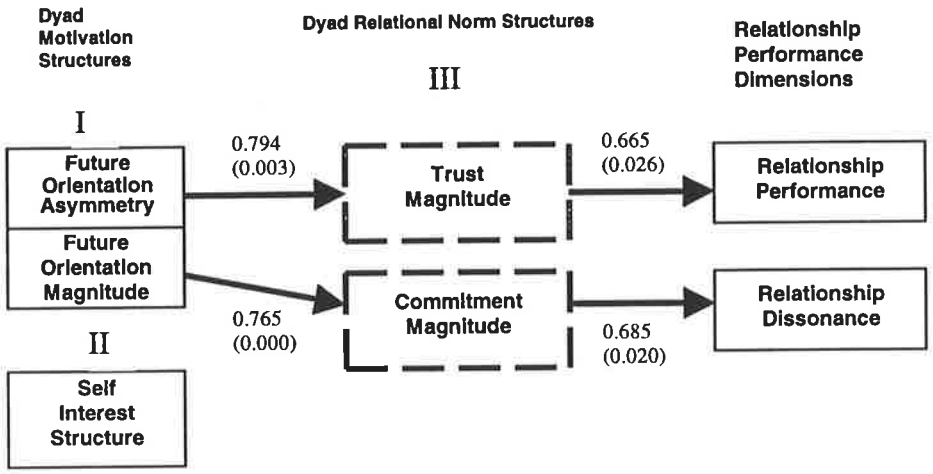
2.1.1. Mutual Performing Relationships

For mutual performing dyads, Hypothesis 11 is supported: 38% of variance in relationship performance is explained by trust magnitude (p=0.026) and 41% of the variance in relationship dissonance is explained by commitment magnitude (p=0.020). Furthermore, 59% of the variance in trust magnitude is explained by the asymmetry of future orientation (p=0.003) and 54% of the variance in commitment magnitude is explained by the magnitude of future orientation (p=0.000). Figure 7.2 summarises these associations. It is noteworthy that, for mutually performing relationships, the structure of self-interest plays no part whatsoever in explaining either relationship performance or dissonance. This indicates that, as a process, relational coordination moves beyond the self-interest required to initiate the relationship. This is consistent with our discussion of group ten hypotheses and suggests that the varying role of self-interest at the firm and dyadic levels deserves attention in future research.

Thus, it appears that the performance and the degree of concord about performance in mutually performing relationships are best explained by the magnitude of trust and commitment present in a relationship. This result reflects past research at the firm level, which placed trust and commitment as central constructs in relational coordination. However, this research extends past findings as it shows that the magnitude of trust and commitment in a dyad is also important in explaining performance and degree of dissonance respectively. That is, firms with mutual high levels of commitment tend to work together and even accept a level of dissonance in performance, while yet achieving high relationship performance through mutual trust. Furthermore,

relationships in this segment seem to accept differences in the importance placed upon the future of

Figure 7.2 Regression Model of Mutual Performing Dyads



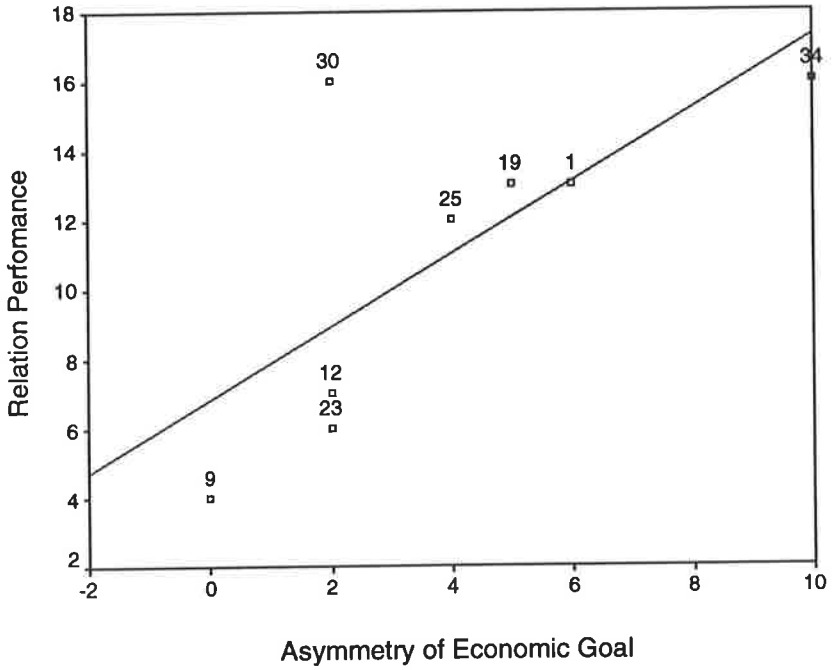
the relationship by relying upon trust, while high levels of future orientation lead to mutual commitment.

2.1.2. Mutual and Inert Relationships

For mutual and inert dyads, partial support was found for Hypothesis 12. While no association was found between trust and commitment magnitude and relationship dissonance, or between asymmetry of relational norm structure and relationship performance, asymmetry of economic goals explained 42.1% of variance in relationship performance (p=0.049).

However, asymmetry of economic goals was found to be negatively associated with relationship performance (β= -0.710). Thus, as agreement on economic goals improved the rating of relationship performance fell (see figure 7.3). This appears counter-intuitive, but as mutual and inert dyads are generally in agreement that their performance is low, it seems likely that ratings of performance suffer accordingly. This suggests that the existence of a strong structural view, evident by the high degree of concord, leads to a halo effect so that performance is rated more strongly in the direction of expectation.

Figure 7.3 Mutual Inert Relationships: Scatter Plots of Economic Gaol Asymmetry and Relationship Performance



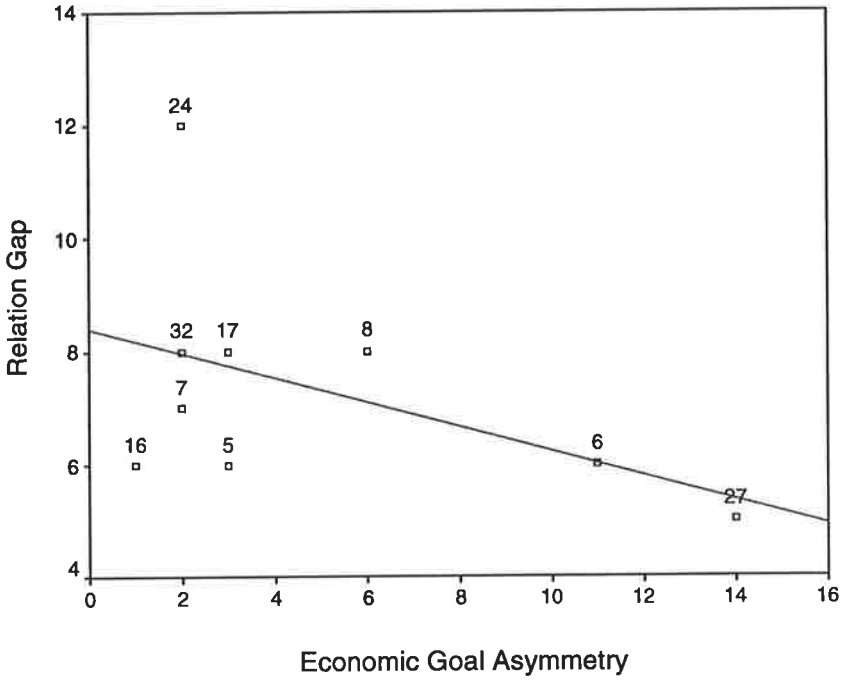
2.1.3. Disconnected and Inert Relationships

In the case of disconnected and inert dyads, partial support was found for Hypothesis 13. While no association was found between trust and commitment magnitude and relationship performance, or asymmetry of relational norms and relationship dissonance, asymmetry of economic goals explained 55.1% of variance in relationship dissonance (p=0.013).

However, asymmetry of economic goals was found to be negatively associated with relationship dissonance (β= -0.779) (see figure 7.4). Thus, as agreement on economic goals improved the rating of relationship dissonance became worse. This, again, seems counter-intuitive, but as this segment represents parties who disagree about performance and also rate performance as low, the different ratings of performance may reflect an unrealistic rating by one party or the existence of opportunistic behaviour by the other party.

An alternate explanation is that the result suffers from the sample size. Thus, cases 6, 24 and 27 may be outliers whose influence on the regression analysis would be reduced as sample size increases.

Figure 7.4 Disconnected Inert Relationships: Scatter Plots of Asymmetry in Economic Goals and Relation Gap



2.1.4. Disconnected and Performing Relationships

For disconnected and performing dyads, partial support was found for Hypothesis 14. While no association was found between trust and commitment structure and relationship dissonance, nor trust and commitment structure or asymmetry of economic goals and relationship performance, magnitude of economic goals explained 61% of variance in relationship performance (p=0.041). Thus, as might be expected, strong self-interest explained the outcome of good performance when both parties agreed that performance was high.

2.2. Conclusion

Examination of a four-segment typology of dyadic data provided evidence that activity of structural bonds varied according to relationship types. Furthermore, these four types of relationship classes explained the dyadic data to a greater degree than did a single global model. However, the results must be considered as tentative given the sample size.

In mutually performing relationships, the more important role of trust in compensating for asymmetry of future orientation and the role of trust and commitment magnitude in explaining performance adds further weight to the findings of group nine hypotheses which showed that interaction between parties' trust is important in explaining performance. An additional finding, deserving close attention, was the non-significant result for self-interest in mutually performing relationships. This is consistent with the results found when examining group ten hypotheses. Significantly, it seems to indicate that self-interest acts at the individual firm level only, while group seven to ten hypotheses and the analysis of the mutually performing segment seem to indicate that relational coordination occurs at the dyadic level of aggregation. This juxtaposition of self and collective interest at different levels of aggregation offers a means of continuing further research into dyadic organisation.

3. Limitations

The results presented in this chapter suffer from a number of limitations.

The first and major limitation is the small sample size (34), which suggests that these results must be treated with caution and are subject to further verification.

A second limitation, present in the dyadic model, is the imprecision in the measures for magnitude constructs. As magnitude is defined as the summation (ie empirically equivalent to the un-weighted average) of the principal and distributor/agent scores on the construct indicators, these constructs suffer from averaging effects. A more precise method of considering jointly the individual and asymmetric measures on a construct is not currently available, but such a technique would remove the imprecision of averaging. Still, the use of magnitude and asymmetry in this study enables a reasonable first examination of actor bond structure.

A third set of limitations is bound within the segmentation section of this study. The small sample size in each segment means that outliers easily influence results. A second issue is the arbitrary use of a mean split, for a decision to segment the sample on another basis would result in a wholly different result. Solutions to this problem are considered in chapter eight.

4. Summary

A dyad model of actor bond structures (composed of self-interest, collective interest and relational norm constructs) interacting to explain relationship performance and dissonance has been proposed and tested. In addition, segmentation of the dyadic model demonstrated that different components of actor bond and motivation structure are active in relationship types based upon relationship performance and dissonance.

Many important results have been identified. The next chapter examines these findings within the context of past research and provides directions for future research.

Chapter Eight – Discussion and Future Research

This chapter discusses the results of this study in relation to the two research problems initially presented in chapter one. Thus, the first section of this chapter considers the implications of the collaborative interest model of relational coordination tested in this thesis. In addition, the contributions of our findings to the relationship literature are considered and a future research agenda is proposed.

The second section of this chapter examines the results of the dyadic study, which accounted for the interaction effect between dyadic firms. No previous study had quantitatively considered the effects of interaction between relational constructs upon relationship performance. This section also discusses the impact of actor bond structure upon the development of relationship classes. Finally, future research of a theoretical and methodological nature is proposed, as dyadic studies will require new research tools.

1. Collaborative Interest Model

The collaborative interest model of firm relational coordination and relationship performance represents a first quantitative attempt at accounting for both self and collective interest in the structuring of business relationships. In addition, this is the first time that relationship performance, explicitly measured as the outcome of both parties, has been employed quantitatively for examining simultaneously the relational constructs of trust, commitment and flexibility. The model and the results of the research presented in this thesis have a number of important implications for the relationship literature on jointly structured business relationships in a network environment.

The empirical results reported here support past research in terms of the importance of trust and commitment as essential elements of relational coordination (Morgan and Hunt 1994; Håkansson and Snehota 1995). However, the collaborative interest model offers new points of view on the process of relational coordination. This is a result of the way the collaborative interest model embeds relational coordination constructs within a process perspective of relationships. This technique results in a wholly new

viewpoint, which complements the current relationship literature and adds significantly to our understanding of relationship theory and method. Thus, the first two parts of this section discuss the strengths of the collaborative interest model, as a preamble to a discussion of the implications of the results.

1.1. Embedding Relational Constructs

The collaborative interest model embeds relational constructs in a relationship context in three ways.

First, most past quantitative studies have not considered explicitly the outcome of relationships as joint economic performance. To measure relationship performance from the perspective of only one firm is to regard a relationship as a means to an end, when in fact a relational strategy is a jointly determined emergence of ways to constructively handle change in the firms or the network (Håkansson and Snehota 1995). Thus, by using joint performance of the relationship as the final dependent variable, the collaborative interest model unambiguously embeds relational constructs within a relationship perspective. The only past studies to have examined relationship performance as a joint outcome, as conceptualised here, have been those based upon the IMP perspective of business markets (cf Holm, Eriksson et al. 1996; Aulakh, Kotabe et al. 1997; Holm, Eriksson et al. 1999; Wilkinson and Wiley 2000).

The second means of embedding relational constructs is to explicitly recognise the dual levels of organisation within relationship dyads. This is achieved by accounting for self and collective interest. Thus, this compound model comprehends relational coordination processes happening within a more complex organisation than has been envisaged in past research. Including both self and collective interest in relational coordination is an important theoretical step: for it recognises the paradox, inherent in any relationship strategy, of pursuing self-interest through collective interest (cf Young and Wilkinson 1997).

The third means of embedding relational constructs within a relationship context is to account for the processual nature of relationships by including different time perspectives within the model.

1.2. Time Perspectives

The embedding of the collaborative interest model within different perspectives of time is an important innovation in this research area. While the longitudinal simulation studies of Gundlach and Caddotte (1994) and Gundlach et al. (1995) have been important in identifying reciprocity between structural and firm level constructs, this study is the first to consider three layers of time in the relational coordination process. This is achieved in two ways. First, the causal steps between each stage of the model represent a process viewed through time, with motivation leading to relationship coordination and then onto relationship performance. This is essentially a dynamic perspective of relationship coordination. Second, the motivation stage, which accounts for the current drivers of relationship continuance, is composed of elements that arise from different viewpoints in time. Thus, motivation is shaped by past experience with other relationships as well as by future orientation towards the specific relationship.

The embedding of relational coordination within the time perspective of a relationship is important in this study for two reasons. First, such an approach recognises that relationships are by their nature bound in time (Halinen and Törnroos 1995). Thus, the past history of each party and their view of the future are present (Halinen and Törnroos 1995) in shaping the nature of relational coordination.

Second, this approach shows that it is possible to examine different time perspectives without having to collect data over different points in time. Thus, this study shows how different time perspectives may be examined using cross-sectional survey methodologies.

1.3. Discussion

Given these points of view offered by this study, the remainder of the discussion is organised along these perspectives.

1.3.1. Embedded Relational and Market Coordination

The results pertaining to the hypotheses derived from the collaborative interest model may be usefully discussed with reference to the two coordination mechanisms: relational coordination representing collective interest and market coordination

representing self-interest. The importance of the relational coordination pathway in explaining variation in relationship performance, over and above market coordination, in this sample of firms is noteworthy for a number of reasons.

First, these results indicate for the first time the relative importance of relational coordination vis-à-vis market coordination in the structuring of relationships. In the structural equation version of the collaborative interest model, the relational coordination path contributed 81.4% to the variance of performance explained according to the squared parameters, while the market coordination path contributed 18.6%. This finding directly implicates trust and commitment as important aspects of the inter-firm interaction process which results in relationship performance.

Arguably, this result may be directly attributed to the use of joint relationship performance as the final dependent variable. Thus, when the final dependent variable is joint performance, the form of coordination found to be most important is that which is inherently mutual. Conversely, when relationship performance is measured from a firm's perspective only, market coordination would naturally feature more significantly. This argument has interesting implications for past quantitative research that has examined the effects of relational coordination on firm performance (cf Brown 1979; Heide and John 1988; Gundlach and Cadotte 1994; Lusch and Brown 1996; Doney and Cannon 1997; Cannon, Achrol et al. 2000), for it suggests that the role of relational coordination in structuring relationships must necessarily have been understated.

The evidence found in this study of the strong influence of trust and commitment in structuring relationships seems to indicate that two different perspectives must be examined simultaneously in future research: the firm and the relationship. This reflects the more complex view of relationships, as merging competing and cooperative behaviour, presented by Young and Wilkinson (1997) and Bengtsson and Kock (1999). In addition, the results of this study indicate that the continuing focus of future research should remain on the role of trust and commitment in enabling complex interaction between firms to proceed to emergent strategy, and hence greater relationship performance. Thus, the question of how trust and commitment result in greater relationship performance remains to be answered. Future studies must look to the ways

that trust and commitment allow resource ties and activity links, as forms of collaboration, to be structured to achieve relationship performance.

The converse of this argument, namely that self-interest is also important in relationships, should not be ignored and will be considered below in discussing the complex role of flexibility indicated by this study.

1.3.2. Time Perspective

An additional aspect of the relational coordination path evident in this sample of firms is the direction of causality between trust and commitment. Past studies report trust to precede commitment (Morgan and Hunt 1994; Kalafatis and Miller 1997). Of course it can be argued that the association between commitment and trust is reciprocal and complex (following Scanzoni 1979), however no reciprocal association was found in this study. Rather, commitment preceded trust.

The explanation of this reversal of causality direction may reside in the use of a collaborative interest model, the specific sample or the sample size. That sample size may result in reversal of causal order of constructs is a result of the increasing influence of extraneous variables. However, structural equation models are negatively sensitive to sample size (Bentler and Freeman 1983), suggesting that extraneous variables only become a problem as sample size becomes large. In addition, as no correlation was found between remaining error terms, the influence of extraneous variables may be ruled out (Hughes, Price et al. 1996).

That the sample chosen for this study explains a reverse order of causality may lie in either the different industry or the international setting. Either difference may result in principals or distributors having an altered ability to switch their partner and so lead to variations in causal path. For example, in a national context where partner switching costs are relatively lower, commitment may only eventuate when trust has been developed: while in international partnerships a commitment is required immediately as limited resources often mean an inability to choose more than one distributor. Trust is then developed after commitment has been displayed. Establishing that the order of trust and commitment is due to industry and international context will only be possible by replicating the study in a different industrial context.

However, an alternate explanation based on the nature of the collaborative interest model seems quite strong. Thus, the close theoretical link between future orientation towards the relationship and commitment, along with the placement of future orientation at the motivation level of the model, results in commitment preceding trust in the relational coordination level of the model. Furthermore, the use of relationship performance, rather than the final dependent variables of cooperation, acquiescence, propensity to leave and functional conflict (cf Morgan and Hunt 1994; Kalafatis and Miller 1997) may also be an explaining factor, for relationship performance is at a wholly different level of aggregation than are these relational constructs. Thus, there are theoretical grounds supporting the argument that commitment must precede trust. However, the argument on the order of causality requires a replication of this study with a larger sample and in another industry.

Regardless of the continuing question of causality direction, it is important to note that the collaborative interest model has allowed some disentangling of complex reciprocal associations. Thus, in this study, two relational coordination paths explain relationship performance (ie commitment versus commitment and trust). This intricate pattern of relational coordination illustrates the inherent complexity of this area.

1.3.3. Other Relational Constructs

The partial and non-significant results occurring with a number of relational constructs in this study also point to areas for future research and require additional comments.

It is interesting that role integrity was not found to play a significant part, for this seems to suggest that either the construct is not valid and so relational norm theory must be re-examined, or that the measurement of the construct was not appropriate. Another possibility is that role integrity is linked more closely to other forms of non-market coordination. This possibility deserves attention, for Macneil (1980) was only concerned with separating market from non-market coordination. Thus, role integrity may be a facet of classes of hierarchical coordination, where use of power allows integration to proceed to varying levels of complexity. In any case, there appears to be a need to re-examine the results of the governance literature, which has relied upon role integrity as part of a composite measure of relational coordination.

One of the most interesting results in relation to testing the collaborative interest model is the more complex association between flexibility and the constructs for self-interest, future orientation and relationship performance. First, that the level of a firm's future orientation to a relationship, and economic goals, lead to greater flexibility seems to indicate that flexibility results from a balancing of self and collective interest. Further, that a greater proportion of variance in flexibility is explained by future orientation than by economic goals (19.1% compared to 5.4%) seems to suggest that flexibility is more closely related to self-interest that is embedded within collective interest. Yet, flexibility does not add significantly to the explanation of relationship performance when included in a regression analysis alongside commitment and trust. This would seem to indicate that flexibility might be related to some other aspect of relationship performance, possibly at a firm or strategic level. This points to a need for future research to account for a firm and relationship perspective, where self and collective interest provide two complementary elements of relational coordination. This compound view of relational coordination is discussed further in the future research section.

In conclusion to this section, it appears that the collaborative interest model makes a substantial contribution to the literature on relational coordination and has, in so doing, significantly changed the ways that future research of relational coordination must proceed.

1.4. Future research

It is apparent that this study, using the collaborative interest model, must be replicated with a larger sample of firms engaged in national and international relationships. It would also be useful to conduct research with firms in contract-hierarchical relationships to determine how the significance of relational norm constructs might vary. However, replications should also be conducted in other industries.

Such replications of this study should be strengthened by improving the measure for open communication, and by further elaborating a theory and measurement for the constructs of role integrity and conflict harmonisation in situations of relational coordination, as opposed to contract hierarchy. In this way, it may be possible to increase our understanding of the complex relational coordination pathways to

relationship performance found in this study. In the present structural equation study the commitment versus the commitment-to-trust sub-paths are of equal importance in explaining relationship performance. Whether these pathways results from length of relationship or other factors, however, cannot be determined without a larger sample.

A further research issue is the development of a theory and methodology to measure strategic performance of firms and of relationships (cf Jüttner 1995; Jüttner and Schlange 1996). Such a development would complement the economically defined relationship performance construct used in this study. This stream of research is suggested by the ambiguous role of flexibility in the present study. While flexibility appears to influence relationship performance measured in economic terms only marginally, its variation as a result of both future orientation and economic goal suggests that it may operate to balance self and collective interest. This balancing of perspectives equates, at a strategic level, to firm versus relationship strategic performance. The question of whether and how relationship economic performance, including market share, differs from strategic performance remains unclear. Alternately, how a firm's or a relationship's strategic performance, relative to their relationship or networks respectively, differ from economic performance in an industry composed of many different networks also remains unclear.

This area of research is naturally composed of two inter-locking issues: self-interest and collaborative interests. The first issue should see the market coordination path of relationships developed beyond the simple association between economic goals and relationship performance portrayed in this study. This would involve elucidation of the ways that resource ties and activity links respond to different sets of actor intentions and actor bonds. In addition, the market coordination aspect of relationships may also involve the conflict harmonisation construct as the mediator of self and collective interest. This follows from the IPS model, which suggests that power use must be balanced along the market to relation dimension, as that dimension also exists as the zero point of the hierarchy axis. The second issue will extend collaborative analysis by viewing strategy as a multi-level construct whose nature varies according to the frame of reference: firm, relationship, or various networks.

Within the above research an additional facet requiring attention is the interface between trust and commitment and the formation of resource ties and activity links. For

it seems that interaction between these relationship elements must explain relationship performance. However, the argument and research evidence presented here suggests that resource ties and activity links must be examined on the basis of both self and collective interest, if their interaction is to be understood. Thus, the strategy of one firm must coordinate with that of another in a form of collaborative strategy within the network. This facet of inter-firm interaction is further elaborated in the next section of this chapter.

The possibilities suggested by this program of future research suggest that the concepts of self and collective interest within a collaborative interest model of relationships, where performance is conceptualised at a dyadic and also firm level, may offer important insights into the operation and management of business relationships.

2. Dyadic Study

The dyadic study in this thesis rests upon the interaction possibility space model presented in chapter four. This model elaborates the nature of interaction between parties according to their preferred coordination modes. Thus, the IPS model suggests that for relational coordination a dyadic model may be represented as an aggregation of two firms' perspectives of their interaction.

The dyadic study in this thesis represents only the third attempt at modelling both sides of a business relationship (see Gundlach, Achrol et al. 1995; Kim 2000). However, this study represents the first to be concerned with only dyadic issues. Past studies have only been concerned with using dyad level constructs to explain firm behaviour in relationships, whereas in this study dyad constructs are used to examine dyadic level constructs: relationship performance and dissonance. Importantly, this is achieved by aggregating an empirically determined model of firms seeking performance in a relationship. This approach is a significant departure from past studies, which results in the modelling of actor bond structure being both theoretically and empirically sound. As a result, this technique offers the optimum means for extending our understanding of relationship structure for joint performance.

While the use of magnitude and asymmetry to measure actor bonds allows separating structure into two components and so makes possible use of regression analysis, this

methodology incorrectly measures structure. Asymmetry correctly measures the difference component of structure, but magnitude does not capture the true nature of similarity in structure. Magnitude measures the total amount of a structural component present within a dyad, rather than the level of similarity across dyad parties. Methods to overcome this problem are discussed in the final section.

However, as a first step in analysis of dyads, the use of magnitude as a measure has the advantage of allowing some conclusions to be drawn about interaction between relationship parties, while the use of asymmetry allows comments to be made about differences between parties. In addition, that the dyadic model is based on the aggregation of an empirically established model of single firms cooperating, allows a direct comparison to be made between dyad and firm level analysis. The ability to compare levels of analysis becomes a key strength in interpreting the results of this study. Thus, with the provision that current methods do not allow a true analysis of structure, a number of conclusions may still be drawn concerning the implications of testing the actor bond model and the resultant relationship classes on relationship literature.

The next part of this section discusses the implications of the actor bond structure study, while the final part discusses directions for future research.

2.1. Discussion

This discussion is conducted in two parts. The first part examines the implications of the actor bond structure model for relational coordination theory, while the second part discusses the implications of the study of relationship classes.

2.1.1. Actor Bond Structure

There are a number of implications of the present actor bond structure results for relational coordination theory.

First, and in a way the most important result of this research, is the confirmation of the interaction effects between firms upon relationship performance, at least in the business software industry. The interaction effect has long been discussed in the IMP qualitative research stream (cf Håkansson 1982; Turnbull 1987; Ford 1990; Möller and Wilson

1995) and has been considered widely in theory (Rose 1962; Singlemann 1972; Wilson 1978; Layder 1981; Geser 1992), but this dyadic research represents the first quantitative evidence that quality of interaction on relational constructs may effect relationship performance. Here interaction effects between partners are evident with regard to trust and commitment on relationship performance and past experience on commitment magnitude in a relationship. Thus, it is the interaction between two firms that results in far greater explanation of the dependent variable, as compared to the single firm collaborative interest model. This is an important finding for it indicates that future research of relational coordination must have a dyadic element, or in some other fashion account for interaction between firms in relationships, if it is to be meaningful.

Second, that the relational coordination pathway became more important than economic goals in explaining relationship performance when the level of analysis shifted from the firm to the dyad supports the earlier discussion that there is an important distinction between self and collective interest in relationships (following Young and Wilkinson 1997). It appears, as was argued with regard to the firm level collaborative interest model, that a firm level analysis leads to self-interest explanations based on competitive market coordination: while dyadic analysis results in collective interest explanations based on relational coordination. This lends further support to the call for continuing dyadic research, but also demonstrates the need to account for firm level analysis simultaneously.

Third, the importance of future orientation structure (ie magnitude and asymmetry) in the formation of trust and commitment magnitude and trust asymmetry indicates a central role for this construct in explaining interaction between firms involved in relational coordination (ie dyadic analysis). Importantly, there are indications that the structure of future orientation is more important in the formation of dyadic trust than in dyadic commitment, for trust asymmetry is explained while commitment asymmetry is not. This is in direct contrast to the findings at the firm level, where future orientation was more closely linked to commitment. The explanation for this switch can only be the interaction effects between the dyad firms, for the strength and unique feature of the dyadic model is that it partially accounts for interaction between partner firms. There are two implications of this result.

First, there is much to be gained in future research by contrasting a firm and dyadic perspective. This suggests that the principle of basing a dyadic model upon the aggregation of a firm model is a sound method to further relational coordination research. In fact, given the variation in results by level of analysis found in this study, it is imperative that contrasting dyadic and firm level analysis be continued in future research.

Second, it would appear that the dyadic structure of trust might be more important than commitment, at least in the case of the business software industry. If this is the case generally, then relational coordination at the dyadic level may be viewed as trust formation. This would suggest that the continuing research emphasis on commitment (cf Hunt and Morgan 1994; Morgan and Hunt 1994; Gundlach, Achrol et al. 1995; Holm, Eriksson et al. 1996; Kim and Frazier 1997; Holm, Eriksson et al. 1999; Wilkinson and Wiley 2000) would need to be matched by an equal emphasis on trust in relational coordination,

Finally, the results of the dyadic study indicate that actor bond structure (ie magnitude and asymmetry) is an important area for future research on relational coordination as it appears that asymmetry of one structure may influence magnitude of another structure and vice versa. However, present methods do not allow joint modelling of the magnitude and asymmetry elements of structure. The implications for research of structure are considered later in this chapter.

2.1.2. Relationship Classes

From the discussion in earlier parts of this chapter, it is evident that future dyadic research will require analysis to be undertaken simultaneously at the firm and dyad level. The analysis of different classes of relationships illustrates this future research direction.

Although this study is limited by its small sample size, it also has the strength of indicating the potential research opportunity in segmentation studies of relationships. Furthermore, it allows the identification of some limitations of segmentation techniques and so provides directions for future research.

The arbitrary segmentation of the dyads in this study according to the mean of relationship performance and dissonance allowed the use of regression analysis to determine the existence of dyad level models of organisation. Thus, for mutually performing dyads, it was found that magnitude of trust and commitment were important in explaining relationship performance and dissonance respectively, while asymmetry and magnitude of future orientation explained trust and commitment magnitude respectively. These regression models provide a deeper understanding of the dynamics of mutually performing firms as compared to disconnected and performing dyads, which are driven to performance by their strong economic goal magnitude. While one might speculate about the different regression models for each relationship class, the exploratory nature of the study strongly calls for replication studies to be undertaken with larger samples.

However, a number of conclusions can already be made at a more general level of analysis based on present results. First, it is worth noting that mutually performing relationships rely strongly on a relational coordination pathway to performance and low dissonance, while disconnected performing relationships seem to rely upon self-interest as their mode of operation. This, again, indicates the potential in pursuing the dual levels of interest within dyad organisation, for one cannot assume that all relationships exhibit low dissonance. In fact, the argument in chapter three suggests that forms of dissonance might be the norm, as firms and networks are necessarily different.

Second, that variation in relationship dissonance acts to provide different regression models of dyad operation indicates that the concept of "contextual shifts" in preferred coordination modes may be an important explanation of dissonance in actor bond structures. If this is the case, a whole area of dyadic research must develop, based upon measures of dissonance between firms. Such research would answer the questions of when and where asymmetry or similarity would be important to the success of relationships. This area of research will require new methodologies that allow true representation of dyadic structure to be analysed. These methodologies are considered in the next section.

Third, the occurrence of relationship classes based on different models of dyad organisation provides evidence that analysis of dyad data in an aggregate manner would lead to significantly different and quite likely inaccurate or misleading

implications for theory development. This is an important conclusion, for the mode of relationship coordination is not a physical attribute that allows a researcher to analyse data in strata; rather analysis must follow segmentation.

The next section examines the possibilities for future research in this area.

2.2. Future Research

The program of research emerging as a result of the actor bond structure and relationship class study fall within the following areas:
(1) actor bonds and actor intentions as mediators of activity links and resource ties in relationships,
(2) self and collective interest as mirrored by the operation of firm and dyad level models of organisation, and
(3) various segmentation methods to elucidate the above research programs.

The following sections elaborate upon each of these research areas in turn.

2.2.1. Actor Mediation

That actor bonds and actor intention remain central to understanding long-term business relationships is evident from the nature of the different classes of relationships found in this study. However, understanding actor mediation in a network environment that is constantly adapting represents a major challenge, for interaction is by its nature a processual phenomenon (Giddens 1979; Håkansson 1982; Ford 1990; Håkansson and Snehota 1995). This indicates that future research should continue to seek explanations of the dynamics of the relationship process.

The "interaction possibility space", developed in chapter three as an extension of Alajoutsijärvi et al's. (1999) coordination context framework, offers a means for conceptualising the reciprocal influence of actor bond structure upon interaction. Future research should seek to elaborate this model. This will require four areas of related research.

First, the structure of the interaction possibility space must continue to be refined. Thus, the issues of coordination space and interaction zone must be addressed. With regard to the coordination space a series of questions must be addressed. For example:

Are three dimensions enough to incorporate all coordination modes? Must other contextual shifts be included? How do contextual shifts overlap to create even more complex forms of coordination? For example, what is the essence of a contractual-relational coordination mode?

With regard to the interaction zone much theoretical work remains to be completed. The present conceptualisation is based upon a possibility space, so as dyads preferred coordination mode becomes relational the zone inflates. However, dyads do not have to use all aspects of the possibilities that are open to them. Thus, it is likely that dyads will be attracted to specific modes of interaction within the possibility space. Considerable empirical work will be required to examine this matter. Potential methods for this work are considered in the final part of this section.

Second, what coordination constructs are at work in each dimension and how are they transformed across contextual shifts? It seems clear that role integrity may be more closely aligned with hierarchical coordination where power use might allow greater integration. Certainly, the ideal conception of hierarchical coordination represents complete integration of functions within one firm. On the other hand, while it appears that flexibility is associated with the market-relation dimension, there remains the question of how flexibility is re-shaped by hierarchical coordination. Presumably, under hierarchical influence, flexibility changes to forms of acquiescence and control as power is applied (cf Morgan and Hunt 1994).

Each of these mutations of relational constructs under different coordination modes suggests that considerable research and theory development is required in this area. The coordination space of the IPS model can provide a framework for this research. It should be possible to consider constructs along their dominant dimension and then compare this with the way the constructs mutate as the influence of the other dimensions is increased.

Third, how do different mixtures of coordination constructs explain interaction between parties and how does interaction create coordination structures? The interaction zone between firms remains the most difficult to comprehend, for interaction is forever indeterminate, based on process and subject to emergence. Thus, this area of research

will remain the most elusive, yet the most intriguing. A number of issues must be resolved before interaction may be elaborated.

First, an important issue is that of the process nature of interaction. However, this is fraught with a number of difficulties. In addition to those discussed in chapter one, it is worth mentioning here the problem of time in the dynamic of a relationship (Halinen and Törnroos 1995), for time binds all interaction including the complex links between levels of organisation. Thus, actor intentions shift through time, as does the dynamic of the network structure in which they are participating. Environmental changes may be either incremental or radical (Cooper 2000), so that different modes of relationship operation must eventuate to deal with these circumstances. This area will require longitudinal research of actor intention and actor bond structure so that the role of time in interaction may be determined. An alternate methodology would rely upon determining relationship classes, according to coordination modes, and then addressing variations in the way firm's coordination models interact according to relationship length. This option follows Anderson's (1995) suggestion that cross-sectional survey methodology may be all that is required if means can be found to separate relationship types. This alternative is elaborated in the next part of this section.

Another issue in the dynamics of relationships is the role of power in the ability of firms to achieve their intentions. The discussion in chapter two highlighted the intrinsic nature of power use in distinguishing between relational and contract-hierarchical coordination. Thus, whether power derives from the firm's resources, including its relationships, or position in the network, the existence of power is likely to be an important means of differentiating coordination modes and the resultant interaction possibilities. In addition, however, one must also distinguish the way that the available power is used (Frazier 1999), as modes of power use also affect coordination modes and, thus, interaction between firms.

Given these difficulties, researchers have a number of analytical tools that may be useful. First, while the normative nature of actor bonds and their context within social environments presents a problem for research, it also opens opportunities for studying relational coordination mechanisms in different settings. Thus, apart from interaction occurring in different structural contexts, future research may find cultural factors a usefully way of comprehending relationship classes. Thus, the extension of IMP

research across cultural groups is likely to uncover interesting results (Wilkinson and Wiley 2000).

At a more specific level, future research can also gain by contrasting the effects of analysis at different levels: firm and relationship. The present study has highlighted the different role played by future orientation at the firm and dyad level of analysis. This distinction in the role of constructs that arise from different levels of analysis deserves further attention in future research.

Finally, that coordination constructs have different roles at the firm and dyad level raises the intriguing concept that further difference might be apparent at the network level. Knowing that such differences occur and what they are unlocks the potential for network theory to make prescriptive recommendations that would aid in policy decision-making.

2.2.2. Models of Dyad Organisation

The collaborative interest model examined in this thesis was based upon a mixture of firm and dyad level constructs. The actor bond structure model was based upon dyad level constructs, but these were disaggregated into structural components for the purpose of analysis. This allowed contextual shift, in the form of relationship dissonance, to appear as a characteristic of some relationships. In addition, it allowed mutuality to be evident in other relationships, where coordination mode perspective was similar across a dyad. However, underlying both of these models is an assumption about the way firms relate to being in a dyad. That is, it is assumed that two separate models of firm behaviour are interacting with a structural model at the dyad level. Qualitative research by the IMP Group (Håkansson 1982; Ford 1990; Håkansson and Snehota 1995) suggests that this is a reasonable assumption for relational coordination; however extending this assumption across the whole "interaction possibility space" is unlikely to be justified. Furthermore, it may be that this assumption is not even justified for all types of relational coordination.

Thus, a number of configurations of organisation models potentially exist. For example with relational coordination, it may be that some relationships never develop an actor bond structure so that the way to represent these dyads would be two self-interest models interacting. Another possibility is that two self-interest models may be

interacting with two collective interest models. This significantly contrasts with the actor bond structure model presented here, and with the current IMP view, where one collective model interacts with firm models.

When other coordination contexts are considered within the IPS, the nature of the collective model must logically change. Thus, with market coordination, each firm follows its self-interest model in interaction with the collective model as represented by the industry and society model. However, as each firm necessarily has different knowledge of the collective model and different ability to interact (following Giddens 1979) many forms of interaction must result. By contrast, in the contract hierarchy situation, it seems likely that there would be two self-interest models interacting with a collective model controlled by the more powerful firm. However, in this situation, it is probable that variations in perceptions of the collective model and the ability of each firm to interact must lead to many forms of interaction.

There are three immediate suggestions from the above discussions. First, as suggested previously, it is necessary to build on the theoretical discussion of chapter two and to determine the active and inactive coordination constructs in each context as well as how these constructs change across contextual shifts. Second, until this theoretical work is more complete, it is not advisable to treat relationship data or, more generally, dyad interaction data in too aggregate a form. Thus, segmentation methods must be explored to disaggregate data. Third, it is also necessary to develop techniques that allow simultaneous analysis of the two components of dyadic data (ie similarity and asymmetry of structure).

2.2.3. Segmentation Techniques

Segmentation offers means to disaggregate relationship and dyadic data. As the purpose is prediction, two groups of techniques are available. The first involves a priori and arbitrary segmentation based upon theoretical grounds. For example, in this study segmentation was conducted on relationship performance and dissonance. Other basis for segmentation would include:
(1) coordination mode of the firms (market, hierarchy, contractual hierarchy, relational, relational-contract, etc),

(2) industry, or network purpose (ie network boundary),
(3) actor resource levels and culture.

However, segmentation on theoretical grounds informs on the factors distinguishing between the bases for segmentation, rather than leading to the discovery of organisation models of how firms are interacting. Thus, a priori segmentation leads to an improved understanding of the ideal coordination mechanisms and the factors affecting them, rather than to an elucidation of the reality of coordination mechanisms at work in relationships. That is to say, in another way, a priori segmentation provides information on the horizontal planes of the Interaction Possibility Space, while what is required is elaboration of all dimensions.

The second option is to rely upon post hoc predictive segmentation, where firm and collective models are determined after data collection. Thus, these methods provide models of firm and relationship behaviour that are positioned within all dimensions of the Interaction Possibility Space. There are essentially two groups of techniques that may provide the solutions required: clusterwise regression (Wedel and Kamakura 1997) and genetic algorithms (Goldberg 1991). In addition, these techniques have the ability to analyse multiple models of a dyad concurrently (Wedel 1998; Aurifeille 2000), so that the similarity and difference of dyadic structure may be examined simultaneously.

However, both of these techniques are also fraught with weaknesses, which are beyond the scope of this thesis to discuss. Thus, the search for new segmentation techniques must continue. However, in the matter of relationship models, it is likely that both a priori and post hoc segmentation techniques should be used, depending on the theoretical direction of the study. In fact, given contextual shifts, it may be that a priori and post hoc segmentation techniques will be used in the one study.

3. Conclusion

The research program suggested in this last chapter, based on the IPS model, has the potential to contribute to the network perspective of business-to-business marketing. Thus, the view of markets as networks (Reingen and Kernan 1986; Easton and Hakansson 1996; Jüttner and Schlange 1996) and of firms as linked by institutional and

hierarchical networks (Sjoberg 1995; Achrol 1997) may be encompassed by a network theory; where actors, as mediators of complex actor bond structures composed of various coordination modes, shape business transactions in the present and the future.

Such a program of quantitative research will require significantly larger samples of dyadic data. This is a phenomenal task. However, electronic data collection via the Internet, as was pre-tested in this thesis, should significantly reduce data collection costs (Watt 1997; Medlin, Roy et al. 1999).

This thesis has pursued the twin aims of understanding relational coordination constructs, and how these are embedded within a relationship context to explain relationship performance, as well as examining actor bond structure formed by interaction and the resulting impact on relationship classes. As a result of bringing the IMP view of actor bonds into a quantitative arena, a number of significant new perspectives have been added to qualitative studies of relational coordination. Several questions have also been proposed about other market and non-market coordination mechanisms. Furthermore, the role of actors with intent, who are involved with each other through interaction within contexts, has lead to empirical research which has highlighted the importance of compound models of relational coordination based upon self and collective interest within the two levels of dyadic organisation represented by relationships.

In addition, innovations in method were also introduced so that the research was conducted with relational coordination processes embedded within a relational context that recognised the role of past and present, as well as with economic performance at an aggregate relationship level. Moreover, the use of a dyadic model aggregated from an empirically derived firm model allowed a measurement of interaction effects in the dyad, for the first time, by comparing the difference in R^2 between different level models.

In conclusion, while the research presented in this thesis has not fully revealed the complexity of relational coordination mechanisms, nor the complexity of dyad organisation, it has added significant new perspectives to the literature on business-to-business marketing.

Appendix A – Facsimile Qualifying Survey

School of Commerce
University of Adelaide
Australia 5005

To: Chris Medlin	From: Chris Medlin
Fax #:	Fax #:
Company: University of Adelaide	Tel #:
Subject: Research	Email:
Sent: 17/04/99 at 13:06:20	Pages: 1 (including cover)

REMARKS: ☐ *Urgent* ☐ *For your review* ☐ *Reply ASAP* ☐ *Please Comment*

Dear Sir / Madam

I am a Phd student and lecturer at The University of Adelaide. To complete the empirical section of my study I am seeking computer software firms that are involved in strategic alliances with firms in Malaysia and/or Singapore.

Strategic alliances are defined as inter-business working arrangements where two firms pursue a particular product in a specific market (excluding Joint Ventures).

Please respond to the questions below by circling your answers.

1. Does your firm sell software for business use? Yes / No

2. Does your firm undertake work in Malaysia / Singapore? Yes / No
   If No please go directly to number 4 below.

3. If Yes, is the work obtained and managed by:
   (a) direct approach from Australia, Yes / No
   (b) your subsidiary in Malaysia / Singapore, Yes / No
   (c) Joint Venture, Yes / No
   (d) via a strategic alliance with a firm in Malaysia / Singapore? Yes / No

   Please print your name below

   .....

4. Please return this completed form by facsimile (Swap the words TO and FROM).

Thanking you in anticipation of your reply.

Yours sincerely

Chris Medlin

Medlin, C., Roy, S., and Chai, T.H., (1999) World wide web versus mail surveys: a comparison and report.
Marketing in the third millennium : proceedings of ANZMAC99, Australian & New Zealand Marketing Academy Conference, School of Marketing, University of New South Wales, 28 November - 1 December 1999.

Medlin, C.J., and Quester, P.G., (1997) An exploratory study into the effect of culture on cooperative alliances.
Proceedings of the 1997 World Marketing Conference, pp. 520-525.

Appendix D - Questionnaire

School of Commerce
University of Adelaide

19 July 1999

Address details

Dear ...

Please find enclosed a questionnaire and reply paid envelope. As we discussed, the questionnaire focuses on your firm's strategic alliance with a Malaysian firm.

The questionnaire takes approximately 30 minutes to complete. The questions seek information of an abstract and general nature and your answers are confidential. The research will only ever be reported in aggregate so that it will not be possible to identify your company or its partner.

As you will appreciate, there are a limited number of software firms that are involved in strategic alliances. I will be providing a management report of my findings into management of strategic alliances. To receive the report, tick the box at the end of the questionnaire.

The nature of my research requires that both sides of working relations complete a questionnaire. Thus, I would appreciate it if you would advise the other firm's partnership manager of the questionnaire I am about to send to them. I am aware from experience that your request of the partner firm to aid my data collection will significantly increase the response rate.

Upon completion of the questionnaire please check you have answered all questions and then use the Reply Paid envelope.

If you have any questions you may contact me.

Yours sincerely

Chris Medlin

School of Commerce
University of Adelaide
AUSTRALIA 5005

Telephone:
Facsimile:
Email:

Managing Inter-firm Business Relations

Definitions

An **inter-firm relation** is defined as a working relationship between two firms, on a continuing basis.
The **focus relationship** refers to the inter-firm relation identified as the topic for this survey.
Partner firm refers to the opposite firm in the focus relationship.
Other firm(s) refers to a firm, or firms, outside of the focus relationship.

Instructions

This questionnaire should take about 30 minutes to complete. To answer a question either fill the space as required or place an X in a box.
Questions relate to the **focus relationship** between your firm and the nominated **partner firm**, with occasional references to **other firms**. The questionnaire requires you to take the role of informed consultant regarding your firm and the nominated partner firm. If another person in your firm is more qualified please pass the questionnaire to them.
The questions are of a general nature so that no commercial insight is sought. In any case, answers will be strictly held in confidence and only be reported in an aggregate manner so that no firm, or its business relations, will be identifiable.
Upon completion please use the Reply Paid envelope to return the questionnaire. Returning the questionnaire within two weeks would be greatly appreciated. My contact details are on the last page.

Section One: FIRM DETAILS

1. This questionnaire relates to the **focus relationship** between our firm (name): _____
_____ and (2.) our **partner firm** (name): _____
_____
3. How many employees does your firm have? _____
4. What is the general nature of your firm's business? _____
_____
_____
5. What legal arrangement operates between the firms in the focus relationship? _____
_____

Section Two: PLANNING AND GOALS

The following statements represent a variety of opinions about the beliefs acted upon in a firm. Please indicate how closely these apply to your firm (no answer is right or wrong).

	Strongly Agree 1	2	3	4	5	6	7	8	Strongly Disagree 9
1. Our firm believes that what happens is a result of our own doing.	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Getting a lucrative sale seems to be largely a matter of being lucky enough to be in the right place at the right time.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. It isn't wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyway.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. When things are going well for this firm it is considered due to hard work, rather than good luck.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. This firm operates on the premise that what is going to happen will happen, regardless of its actions.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. When this firm makes plans, it is certain that it can make them work.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
7. Success in dealing with firms seems to be more a matter of our firm's actions, rather than the attitude of the other firm at the time.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. There is little use in worrying about things; what will be, will be.	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. Our firm operates on the belief that most misfortune is the result of lack of ability, ignorance, laziness, or all three.	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. Many times our firm believes it has little influence over the things that happen to it.	☐	☐	☐	☐	☐	☐	☐	☐	☐

The following statements relate to your firm's view of planning and goals in general.

11. Our firm is mainly concerned with monthly or quarterly results.	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. Our firm is willing to wait for results.	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. Success in the future is more important than present success to this firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. Our firm is willing to invest for returns in the distant future.	☐	☐	☐	☐	☐	☐	☐	☐	☐

15. With inter-firm relations our firm is willing to wait _____ years for results.
16. How far into the future does your firm's planning horizon extend? _____
17. How far into the future does your firm look when considering potential consequences to a major business change? _____

The next series of statements looks at your firm's preferred way to arrive at goals in business relationships.

	Strongly agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
18. Our firm prefers joint agreement on future objectives with partners.	☐	☐	☐	☐	☐	☐	☐	☐	☐
19. In our past relationships this firm has not attempted to jointly coordinate the goals of the parties.	☐	☐	☐	☐	☐	☐	☐	☐	☐
20. Our firm prefers the assignment of a future objective to be the responsibility of the party with the required expertise.	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. In our firm's past relationships, the parties have treated problems as joint rather than individual responsibilities.	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. Our firm prefers to work out solutions to problems that benefit the relationship as a whole, and not only the individual parties.	☐	☐	☐	☐	☐	☐	☐	☐	☐
23. In business relationships our firm often has looked after joint interests to its immediate detriment.	☐	☐	☐	☐	☐	☐	☐	☐	☐
24. In the past we have participated in relationships where the parties are willing to owe each other favours.	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. In the past most of our business relations have been with firms willing to look after joint interests to their own immediate detriment.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
26. In the past most of our business relations have been with firms that look after their own interests before the concerns of our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐

The following statements relate to the <u>focus relationship</u>.

27. In this relationship our firm is mainly concerned with monthly or quarterly results.	☐	☐	☐	☐	☐	☐	☐	☐	☐
28. The partner firm is mainly concerned with monthly or quarterly results.	☐	☐	☐	☐	☐	☐	☐	☐	☐
29. We believe that over the long term our relationship with this partner will be profitable.	☐	☐	☐	☐	☐	☐	☐	☐	☐
30. Maintaining a long-term relationship with this partner is important to our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
31. We focus on immediate goals in this relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
32. We expect the partner firm to be working with us for a long time.	☐	☐	☐	☐	☐	☐	☐	☐	☐
33. In this relationship our firm is willing to wait for results.	☐	☐	☐	☐	☐	☐	☐	☐	☐
34. Success in the future in this relationship is more important than present profit.	☐	☐	☐	☐	☐	☐	☐	☐	☐
35. Our partner firm is more oriented towards success in the future than current results.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36. Our partner firm appears willing to wait for results in the future.	☐	☐	☐	☐	☐	☐	☐	☐	☐
37. This relationship was started for important strategic reasons.	☐	☐	☐	☐	☐	☐	☐	☐	☐
38. This inter-firm relation was started for its importance in creating linkages to *other firms*.	☐	☐	☐	☐	☐	☐	☐	☐	☐
39. This relationship was started for its importance in creating linkages to other institutions (eg university, professional organisation).	☐	☐	☐	☐	☐	☐	☐	☐	☐
40. This inter-firm relation was started for its importance in creating linkages to government bodies.	☐	☐	☐	☐	☐	☐	☐	☐	☐
41. This relationship was started for its importance in providing access to customers.	☐	☐	☐	☐	☐	☐	☐	☐	☐
42. This relationship was started because of its implications for the future of our firm in this market.	☐	☐	☐	☐	☐	☐	☐	☐	☐
43. This relationship was started because it was seen as essential to our firm's future in this market.	☐	☐	☐	☐	☐	☐	☐	☐	☐
44. This relationship was started, as it was believed it has long-term implications for our profit.	☐	☐	☐	☐	☐	☐	☐	☐	☐
45. This inter-firm relation was started to reduce a competitor's market power.	☐	☐	☐	☐	☐	☐	☐	☐	☐
46. This relationship was started for its long-term implications for our firm's position in this market.	☐	☐	☐	☐	☐	☐	☐	☐	☐
47. There are limited alternate partners with our firm's requirement.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
48. It would be difficult to switch to another firm to fulfil the functions completed by the partner firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
49. Finding a replacement for this partner would be very easy.	☐	☐	☐	☐	☐	☐	☐	☐	☐
50. All things considered the two parties have equal ability to influence each other.	☐	☐	☐	☐	☐	☐	☐	☐	☐
51. All things considered the other party has more ability to influence our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
52. All things considered our firm has more ability to influence the other firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐

53. What percentage of your firm's total sales do the partner's products account for? _____%

54. What proportion of your firm's total sales is reliant on the relationship with this partner? _____ %

For each goal, below, indicate its relative importance to your firm's overall strategy with regard to the <u>focus relationship</u>.

	Extremely Important								Not Important
55. Profit	☐	☐	☐	☐	☐	☐	☐	☐	☐
56. Sales	☐	☐	☐	☐	☐	☐	☐	☐	☐
57. Sales growth	☐	☐	☐	☐	☐	☐	☐	☐	☐
58. Market Share	☐	☐	☐	☐	☐	☐	☐	☐	☐
59. Market Share growth	☐	☐	☐	☐	☐	☐	☐	☐	☐
60. Reduce competitor influence in this market	☐	☐	☐	☐	☐	☐	☐	☐	☐
61. Reduce competitor influence in other markets	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section Three: INTER-FIRM RELATION

The following statements relate to the <u>focus relationship</u>.

	Strongly Agree								Strongly Disagree
1. The exchange relationship with the partner firm has created a complex web of tasks related to our commercial activity.	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. Our firm is very committed to the partner firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. If our firm could find another partner for this market segment we would be likely to switch.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. We are uncertain about how long our relationship will last with this partner firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. We have a long term orientation to the relationship with this partner firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. The partner firm is willing to invest time and money in developing this relation.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. We are only concerned with our outcomes in this relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. The exchange interaction with the partner firm includes many different areas of commercial activity beyond the buying or selling of product.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
9. The exchange relationship with the partner firm has created a complex web of interactions over all kinds of issues.	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. Our firm and the partner firm are very committed to each other.	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. The partner firm appears more concerned with their own outcomes in this relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. We consider the exchange with this partner as part of a wider relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. The exchange relationship with the other party is extremely complicated.	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. The partner firm is very committed to our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. The exchange relationship with the partner firm comprises diverse linkages.	☐	☐	☐	☐	☐	☐	☐	☐	☐
16. The exchange relationship with the partner firm has many different aspects.	☐	☐	☐	☐	☐	☐	☐	☐	☐
17. The exchange relationship with the partner firm is extremely complicated.	☐	☐	☐	☐	☐	☐	☐	☐	☐
18. The exchange interaction with the partner firm includes many other different areas of commercial activity.	☐	☐	☐	☐	☐	☐	☐	☐	☐
19. The exchange relationship with the partner firm has created a complex web of interactions between us.	☐	☐	☐	☐	☐	☐	☐	☐	☐
20. We complete tasks for the partner when required.	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. The partner firm completes tasks, for which our firm is normally responsible, when required.	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. We would not help the partner firm complete tasks for which they are responsible.	☐	☐	☐	☐	☐	☐	☐	☐	☐
23. Flexibility in response to requests for changes is a characteristic of this relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
24. The exchange relationship with the partner firm has created a complex web of tasks that extend beyond our direct commercial activity.	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. The parties expect to be able to make adjustments in the ongoing relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. The parties expect to be able to make adjustments to cope with changing circumstances.	☐	☐	☐	☐	☐	☐	☐	☐	☐
27. When an unexpected situation arises, the parties prefer to work out a new deal rather than hold each other to the original terms.	☐	☐	☐	☐	☐	☐	☐	☐	☐
28. Compared to other relationships in this industry there is more flexibility in response to requests for changes in this relationship.	☐	☐	☐	☐	☐	☐	☐	☐	☐
29. The partner firm is less willing to change procedures than are other firms in this industry.	☐	☐	☐	☐	☐	☐	☐	☐	☐
30. Our way of doing business with the partner firm has positive consequences on our activities with other customers.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
31. By working closely with the partner firm, our firm becomes more attractive to other firms.	☐	☐	☐	☐	☐	☐	☐	☐	☐
32. Institutionalising quality programs with the partner firm may make it difficult to work together with other firms.	☐	☐	☐	☐	☐	☐	☐	☐	☐
33. Too close a relationship with this particular partner firm may destroy the balance among our firm's exchange partners.	☐	☐	☐	☐	☐	☐	☐	☐	☐
34. Collaborating with the partner firm may be rewarding in some ways, but harmful to our reputation with certain other firms.	☐	☐	☐	☐	☐	☐	☐	☐	☐
35. Although working close with the partner firm will likely provide some benefits, important other customers and suppliers may not be happy about this.	☐	☐	☐	☐	☐	☐	☐	☐	☐
36. At times in this relationship the other party cannot be trusted.	☐	☐	☐	☐	☐	☐	☐	☐	☐
37. In this relationship the other party can be counted on to do what is right.	☐	☐	☐	☐	☐	☐	☐	☐	☐
38. In this relationship the other party has high integrity.	☐	☐	☐	☐	☐	☐	☐	☐	☐
39. The other party in this relationship is primarily interested in their own welfare.	☐	☐	☐	☐	☐	☐	☐	☐	☐
40. The other party can be counted on to help this firm if the need arises.	☐	☐	☐	☐	☐	☐	☐	☐	☐
41. The other party is truly sincere in their promises.	☐	☐	☐	☐	☐	☐	☐	☐	☐
42. The other party can be completely trusted to meet their obligations to the partnership.	☐	☐	☐	☐	☐	☐	☐	☐	☐
43. The other party is well known for their fair dealing.	☐	☐	☐	☐	☐	☐	☐	☐	☐
44. We are at ease in our dependence upon the other party to meet our customers' needs .	☐	☐	☐	☐	☐	☐	☐	☐	☐
45. We are highly reliant upon the partner firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
46. Any concessions we make to help the partner firm will even out in the long term.	☐	☐	☐	☐	☐	☐	☐	☐	☐
47. Our partner is perfectly honest.	☐	☐	☐	☐	☐	☐	☐	☐	☐
48. Our partner firm tries to take advantage of our cooperation for their own sake.	☐	☐	☐	☐	☐	☐	☐	☐	☐
49. Our firm can rely upon the partner firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
50. Our firm expects that the future relationship with the partner firm will be good.	☐	☐	☐	☐	☐	☐	☐	☐	☐
51. Our partner is perfectly credible.	☐	☐	☐	☐	☐	☐	☐	☐	☐
52. The partner firm has made sacrifices for our firm in the past.	☐	☐	☐	☐	☐	☐	☐	☐	☐
53. The partner firm has gone out on a limb for our firm in the past.	☐	☐	☐	☐	☐	☐	☐	☐	☐
54. Failure by the other firm to meet agreed outcomes would hurt our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
55. Our firm can rely on the other firm to meet the requirements for previously agreed resource allocations.	☐	☐	☐	☐	☐	☐	☐	☐	☐

56. How far into the future does the planning horizon between the firms in the focus relationship extend? _____

Section Four: COMMUNICATIONS

The following statements relate to the nature of communications between the firms in the <u>focus relationship</u>.

	Strongly Agree 1	2	3	4	5	6	7	8	Strongly Disagree 9
1. In this relationship it is expected that any information that might help the other party will be provided to them.	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. We hesitate to give our partner information that is not part of the contract.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. Our partner firm hesitates to give us information that is not part of the contract.	☐	☐	☐	☐	☐	☐	☐	☐	☐
4. Exchange of information in this relationship takes place frequently.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. Exchange of information in this relationship takes place informally.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. Exchange of information in this relationship takes place only according to pre-specified agreement.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. It is expected that the parties will provide proprietary information.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. It is expected that the parties will provide any information that can help the other party.	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. It is expected that we keep the other party informed about changes that may affect the other party.	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. We keep the other party informed about changes that may affect the other party.	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. The other party keeps us informed about changes that may affect our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. The other party keeps us informed about events that may affect our firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. This partner communicates more openly with our firm, than other firms in this industry.	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. Compared to other firms in the industry, this partner is less likely to inform us of changes that will affect us.	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. Sometimes our firm has to alter the facts slightly to get what it wants from the other firm.	☐	☐	☐	☐	☐	☐	☐	☐	☐
16. Sometimes it is necessary to hold back information from the other firm to get things done.	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section Five: RESOLVING DISAGREEMENT

The following statements relate to the <u>focus relationship</u>.

	Strongly Agree								Strongly Disagree
1. In this relationship, it is expected that the more powerful party should use whatever means necessary to get its own way.	☐	☐	☐	☐	☐	☐	☐	☐	☐
2. In this relationship, it is expected that each party should use what power they have over the other party.	☐	☐	☐	☐	☐	☐	☐	☐	☐
3. Both parties work together to solve problems.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
	1	2	3	4	5	6	7	8	9
4. Since the relationship developed, the partner firm has developed relationships that conflict with our interests.	☐	☐	☐	☐	☐	☐	☐	☐	☐
5. The other party has relationships with other firms that conflict with our interests.	☐	☐	☐	☐	☐	☐	☐	☐	☐
6. Our firm has relationships with other firms that conflict with our partner's interests.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. Since the relationship developed our firm has developed other relationships with conflicting interests.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. Since the relationship developed the partner firm has removed a relationship with another firm that conflicted with our interests.	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. Since the relationship developed our firm has removed a relationship that conflicted with our partner's interests.	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. Both parties understand that other relationships involving conflict of interest are not developed.	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. Disagreement between the parties is resolved as quickly as possible.	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. Rarely does open conflict arise between the parties.	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. Rarely do either party disagree with the way things should be done.	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. Disagreements between the party's intentions are not left to simmer.	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. Disagreements over the way things are done is resolved as quickly as possible.	☐	☐	☐	☐	☐	☐	☐	☐	☐
16. Disagreements over the long term direction of the firms is openly discussed.	☐	☐	☐	☐	☐	☐	☐	☐	☐
17. Our relationship with the other party is marked by a high degree of harmony.	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section Six: PERFORMANCE

These questions relate to your firm's past and present use of inter-firm relations.

1. How long has this focus relationship existed? _____ years
2. Approximately how many active inter-firm relations has your firm at present? _____
3. How long has your firm been established? _____ years
4. Over the years, how many inter-firm relations has your firm entered?
   _____ relations over _____years.
5. What percentage of these inter-firm relations would you consider to have been successful? _____ %

The following statements look at the way your firm relates to other firms, given the focus relationship.

	Strongly Agree								Strongly Disagre
	1	2	3	4	5	6	7	8	9
6. Due to our inter-firm relationships, our firm is regarded as one of the most attractive suppliers to our present and potential customers.	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. Our firm can attract the most competent other firms into relationships.	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. Our firm has the capability to influence development in our field.	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. What we gain from working with this partner firm will be useful in other relations.	☐	☐	☐	☐	☐	☐	☐	☐	☐

Consider all of the costs and revenues with the focus relationship. Relative to competitors in the focus market, what has been the performance of the inter-firm relation on the following dimensions.

	1	2	3	4	5	6	7	8	9
10. Overall performance	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. Profit	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. Sales	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. Sales growth	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. Market Share	☐	☐	☐	☐	☐	☐	☐	☐	☐
15. Market Share growth	☐	☐	☐	☐	☐	☐	☐	☐	☐

Consider all of the costs and revenues with the focus relationship. Relative to your firm's expectations in the focus market, what has been the performance of the inter-firm relation on the following dimensions.

	Extremely Strong								Not Strong
16. Overall performance	☐	☐	☐	☐	☐	☐	☐	☐	☐
17. Profit	☐	☐	☐	☐	☐	☐	☐	☐	☐
18. Sales	☐	☐	☐	☐	☐	☐	☐	☐	☐
19. Sales growth	☐	☐	☐	☐	☐	☐	☐	☐	☐
20. Market Share	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. Market Share growth	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section Seven: RESPONDENT DETAILS (confidential)

1. Your name: _____
2. E-mail address: _____
3. Male ☐, or Female ☐
4. Your role descriptor within your firm: _____
5. How long have you been with this firm?_____ years
6. How long have you been in this position? _____
7. The total number of full years of education (primary school to now): _____ years
8. Your age: _____ years
9. Name the ethnic group to which you belong (Chinese/Malay/Greek/Australian etc):

_____

10. What is your nationality?_____

11. If you have studied or worked overseas for one year or more state the total time period:

_____ years, and places _____

Please think of an ideal job - disregarding your present job. In choosing an ideal job, how important would it be to you to ..(using the key please circle one answer in each line across)

KEY	
A. of utmost importance	D. of little importance
B. very important	E. of very little or no importance
C. of moderate importance	

12. Have sufficient time for your personal or family life	A	B	C	D	E
13. Have good physical working conditions (good ventilation and lighting, adequate work space, etc)	A	B	C	D	E
14. Have security of employment	A	B	C	D	E
15. Have an element of variety and adventure in the job	A	B	C	D	E

In your private life, how important is each of the following to you? (please circle one answer in each line across)

16. Personal steadiness and stability	A	B	C	D	E
17. Thrift	A	B	C	D	E
18. Persistence (perseverance)	A	B	C	D	E
19. Respect for tradition	A	B	C	D	E

The following statements relate to your personal beliefs. There is no correct answer. Please indicate how important each belief statement is to you personally.

	Strongly Agree 1	2	3	4	5	6	7	8	Strongly Disagree 9
20. Most people do not realise the extent to which their lives are controlled by accidental happenings.	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. When I make plans, I am certain I can make them work.	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. Getting a good job depends mainly on being in the right place at the right time.	☐	☐	☐	☐	☐	☐	☐	☐	☐
23. In the long run people get the respect they deserve in this world.	☐	☐	☐	☐	☐	☐	☐	☐	☐
24. If individuals are continuously taking care of their fellow human beings, everyone's quality of life will improve.	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. Most misfortune is the result of lack of ability, ignorance, laziness, or all three.	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. Unfortunately, an individual's worth often passes unrecognised no matter how hard he or she tries.	☐	☐	☐	☐	☐	☐	☐	☐	☐
27. If individuals have maximum freedom and are given every opportunity to develop themselves, everyone's quality of life will improve.	☐	☐	☐	☐	☐	☐	☐	☐	☐
28. What happens is my own doing.	☐	☐	☐	☐	☐	☐	☐	☐	☐

	Strongly Agree								Strongly Disagree
29. Many times we might just as well decide what to do by flipping a coin.	☐	☐	☐	☐	☐	☐	☐	☐	☐
30. In the long run the good things balance the bad things that happen to us.	☐	☐	☐	☐	☐	☐	☐	☐	☐
31. Getting people to do the right things depends upon luck; ability has little or nothing to do with it.	☐	☐	☐	☐	☐	☐	☐	☐	☐

32. How far into the future does the planning of your personal life extend? _____

Section Eight: PARTNER FIRM DETAILS (confidential)

Please provide contact details for the person responsible for managing the other side of the focus relationship in Malaysia / Singapore.

Contact name: _____

E-mail: _____

Partner firm: _____

Address: _____

City: _____ Postcode: _____

Country: _____

Telephone: _____

Facsimile: _____

Finally, thank you for taking the time to complete this questionnaire.

1. Please ensure that you have responded to all questions.

2. Insert the questionnaire into the reply paid envelope and post as soon as possible.

3. If you would like a report of the study findings please tick the box. ☐

Mr Chris Medlin
School of Commerce
University of Adelaide
AUSTRALIA 5005

Telephone
Facsimile
E-mail

Appendix E – Initial Factor Analysis of Constructs

Past Experience

Correlation Matrix

		Q5.2	Q5.4	Q5.6	Q5.7	Q5.8	Q5.9
Correlation	Q5.2	1.000	-.236	.039	.078	-.036	.205
	Q5.4	-.236	1.000	.118	.313	.254	-.354
	Q5.6	.039	.118	1.000	.176	.411	-.241
	Q5.7	.078	.313	.176	1.000	.182	-.148
	Q5.8	-.036	.254	.411	.182	1.000	-.300
	Q5.9	.205	-.354	-.241	-.148	-.300	1.000

Inverse of Correlation Matrix

	Q5.2	Q5.4	Q5.6	Q5.7	Q5.8	Q5.9
Q5.2	1.118	.268	-.081	-.181	-.017	-.185
Q5.4	.268	1.332	.050	-.365	-.187	.319
Q5.6	-.081	.050	1.248	-.120	-.453	.182
Q5.7	-.181	-.365	-.120	1.166	-.068	.031
Q5.8	-.017	-.187	-.453	-.068	1.309	.211
Q5.9	-.185	.319	.182	.031	.211	1.263

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.640
Bartlett's Test of Sphericity	Approx. Chi-Square	55.495
	df	15
	Sig.	.000

Anti-Image Matrices

		Q5.2	Q5.4	Q5.6	Q5.7	Q5.8	Q5.9
Anti-image Covariance	Q5.2	.895	.180	-5.8E-02	-.139	-1.1E-02	-.131
	Q5.4	.180	.751	3.00E-02	-.235	-.107	.190
	Q5.6	-5.8E-02	3.00E-02	.801	-8.2E-02	-.277	.115
	Q5.7	-.139	-.235	-8.2E-02	.857	-4.4E-02	2.13E-02
	Q5.8	-1.1E-02	-.107	-.277	-4.4E-02	.764	.128
	Q5.9	-.131	.190	.115	2.13E-02	.128	.792
Anti-image Correlation	Q5.2	.509[a]	.220	-6.9E-02	-.158	-1.4E-02	-.156
	Q5.4	.220	.623[a]	3.87E-02	-.293	-.141	.246
	Q5.6	-6.9E-02	3.87E-02	.628[a]	-9.9E-02	-.354	.145
	Q5.7	-.158	-.293	-9.9E-02	.605[a]	-5.5E-02	2.59E-02
	Q5.8	-1.4E-02	-.141	-.354	-5.5E-02	.671[a]	.164
	Q5.9	-.156	.246	.145	2.59E-02	.164	.717[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q5.2	.105	6.041E-02
Q5.4	.249	.977
Q5.6	.199	.424
Q5.7	.143	.136
Q5.8	.236	.426
Q5.9	.208	.229

Extraction Method: Maximum Likelihood.

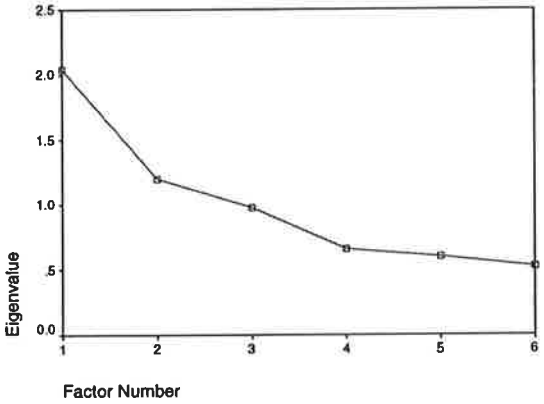
a. One or more communality estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.041	34.021	34.021	1.354	22.570	22.570
2	1.197	19.958	53.980	.898	14.974	37.544
3	.975	16.258	70.237			
4	.661	11.021	81.259			
5	.601	10.014	91.273			
6	.524	8.727	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor	
	1	2
Q5.2	-.238	6.05E-02
Q5.4	.988	-1.5E-02
Q5.6	.129	.638
Q5.7	.318	.188
Q5.8	.266	.596
Q5.9	-.364	-.311

Extraction Method: Maximum Likelihood.

a. Attempted to extract 2 factors. More than 25 iterations required. (Convergence=3.653E-02). Extraction was terminated.

Future Orientation

Correlation Matrix

		Q6.1	Q6.2	Q6.3	Q6.4	Q6.5	Q6.6	Q6.7	Q6.8	Q6.9
Correlatic	Q6.1	1.000	.587	-.016	-.053	.587	-.145	-.291	-.069	.104
	Q6.2	.587	1.000	.067	.050	.404	.012	-.053	.050	-.215
	Q6.3	-.016	.067	1.000	.774	.195	.669	.268	.244	.034
	Q6.4	-.053	.050	.774	1.000	.131	.823	.402	.357	.060
	Q6.5	.587	.404	.195	.131	1.000	.071	-.163	-.141	-.055
	Q6.6	-.145	.012	.669	.823	.071	1.000	.394	.370	-.008
	Q6.7	-.291	-.053	.268	.402	-.163	.394	1.000	.558	.151
	Q6.8	-.069	.050	.244	.357	-.141	.370	.558	1.000	.467
	Q6.9	.104	-.215	.034	.060	-.055	-.008	.151	.467	1.000

Inverse of Correlation Matrix

	Q6.1	Q6.2	Q6.3	Q6.4	Q6.5	Q6.6	Q6.7	Q6.8	Q6.9
Q6.1	2.553	-1.234	.171	-.275	-.964	.332	.523	.061	-.677
Q6.2	-1.234	1.971	-.074	.041	-.119	.075	-.123	-.538	.817
Q6.3	.171	-.074	2.592	-1.772	-.303	-.291	.110	.055	-.077
Q6.4	-.275	.041	-1.772	4.521	-.013	-2.396	-.456	-.005	-.124
Q6.5	-.964	-.119	-.303	-.013	1.725	-.149	-.049	.327	.034
Q6.6	.332	.075	-.291	-2.396	-.149	3.423	.005	-.533	.404
Q6.7	.523	-.123	.110	-.456	-.049	.005	1.746	-.837	.068
Q6.8	.061	-.538	.055	-.005	.327	-.533	-.837	2.204	-1.014
Q6.9	-.677	.817	-.077	-.124	.034	.404	.068	-1.014	1.725

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.650
Bartlett's Test of Sphericity	Approx. Chi-Square	339.430
	df	36
	Sig.	.000

Anti-Image Matrices

		Q6.1	Q6.2	Q6.3	Q6.4	Q6.5	Q6.6	Q6.7	Q6.8	Q6.9
Anti-image Covarianc	Q6.1	.392	-.245	2.59E-02	-2.4E-02	-.219	3.80E-02	.117	1.09E-02	-.154
	Q6.2	-.245	.507	-1.5E-02	4.58E-03	-3.5E-02	1.11E-02	-3.6E-02	-.124	.240
	Q6.3	2.59E-02	-1.5E-02	.386	-.151	-6.8E-02	-3.3E-02	2.42E-02	9.56E-03	-1.7E-02
	Q6.4	-2.4E-02	4.58E-03	-.151	.221	-1.6E-03	-.155	-5.8E-02	-5.5E-04	-1.6E-02
	Q6.5	-.219	-3.5E-02	-6.8E-02	-1.6E-03	.580	-2.5E-02	-1.6E-02	8.60E-02	1.15E-02
	Q6.6	3.80E-02	1.11E-02	-3.3E-02	-.155	-2.5E-02	.292	8.97E-04	-7.1E-02	6.85E-02
	Q6.7	.117	-3.6E-02	2.42E-02	-5.8E-02	-1.6E-02	8.97E-04	.573	-.217	2.27E-02
	Q6.8	1.09E-02	-.124	9.56E-03	-5.5E-04	8.60E-02	-7.1E-02	-.217	.454	-.267
	Q6.9	-.154	.240	-1.7E-02	-1.6E-02	1.15E-02	6.85E-02	2.27E-02	-.267	.580
Anti-image Correlatio	Q6.1	.536[a]	-.550	6.66E-02	-8.1E-02	-.459	.112	.248	2.58E-02	-.323
	Q6.2	-.550	.496[a]	-3.3E-02	1.37E-02	-6.4E-02	2.88E-02	-6.6E-02	-.258	.443
	Q6.3	6.66E-02	-3.3E-02	.798[a]	-.518	-.143	-9.8E-02	5.15E-02	2.28E-02	-3.6E-02
	Q6.4	-8.1E-02	1.37E-02	-.518	.702[a]	-4.5E-03	-.609	-.162	-1.7E-03	-4.4E-02
	Q6.5	-.459	-6.4E-02	-.143	-4.5E-03	.696[a]	-6.1E-02	-2.8E-02	.168	1.98E-02
	Q6.6	.112	2.88E-02	-9.8E-02	-.609	-6.1E-02	.757[a]	2.19E-03	-.194	.166
	Q6.7	.248	-6.6E-02	5.15E-02	-.162	-2.8E-02	2.19E-03	.750[a]	-.426	3.95E-02
	Q6.8	2.58E-02	-.258	2.28E-02	-1.7E-03	.168	-.194	-.426	.600[a]	-.520
	Q6.9	-.323	.443	-3.6E-02	-4.4E-02	1.98E-02	.166	3.95E-02	-.520	.337[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q6.1	.608	.999
Q6.2	.493	.358
Q6.3	.614	.646
Q6.4	.779	.926
Q6.5	.420	.410
Q6.6	.708	.743
Q6.7	.427	.421
Q6.8	.546	.999
Q6.9	.420	.255

Extraction Method: Maximum Likelihood.

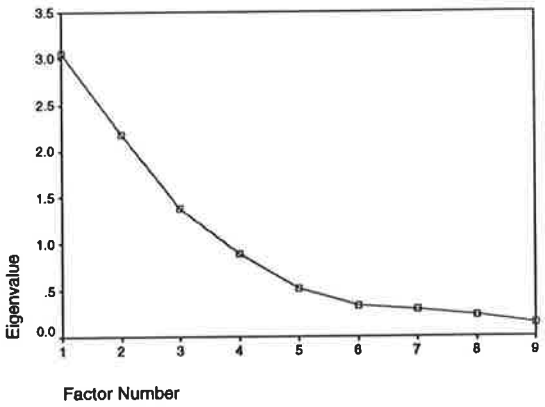
a. One or more communality estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.057	33.969	33.969	2.091	23.230	23.230
2	2.171	24.117	58.086	1.577	17.522	40.752
3	1.376	15.288	73.375	2.089	23.216	63.968
4	.888	9.869	83.243			
5	.520	5.778	89.021			
6	.331	3.679	92.700			
7	.290	3.219	95.918			
8	.223	2.482	98.401			
9	.144	1.599	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor		
	1	2	3
Q6.1	-.726	.687	5.19E-04
Q6.2	-.364	.470	6.73E-02
Q6.3	.183	.169	.764
Q6.4	.286	.225	.891
Q6.5	-.494	.331	.236
Q6.6	.357	.165	.767
Q6.7	.583	.192	.209
Q6.8	.735	.677	-6.0E-03
Q6.9	.251	.416	-.137

Extraction Method: Maximum Likelihood.

a. 3 factors extracted. 8 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
22.573	12	.032

Economic Goal

Correlation Matrix

		Q8.1	Q8.2	Q8.3	Q8.4	Q8.5	Q8.6	Q8.7
Correlation	Q8.1	1.000	.723	.588	.435	.438	.202	.116
	Q8.2	.723	1.000	.852	.638	.630	.394	.201
	Q8.3	.588	.852	1.000	.655	.711	.360	.183
	Q8.4	.435	.638	.655	1.000	.902	.630	.439
	Q8.5	.438	.630	.711	.902	1.000	.573	.394
	Q8.6	.202	.394	.360	.630	.573	1.000	.727
	Q8.7	.116	.201	.183	.439	.394	.727	1.000

Inverse of Correlation Matrix

	Q8.1	Q8.2	Q8.3	Q8.4	Q8.5	Q8.6	Q8.7
Q8.1	2.162	-1.837	.297	.031	-.183	.373	-.149
Q8.2	-1.837	5.542	-3.473	-1.117	1.059	-.687	.311
Q8.3	.297	-3.473	4.728	.616	-2.090	.339	.102
Q8.4	.031	-1.117	.616	6.293	-4.871	-.905	-.081
Q8.5	-.183	1.059	-2.090	-4.871	6.425	-.197	-.056
Q8.6	.373	-.687	.339	-.905	-.197	2.938	-1.627
Q8.7	-.149	.311	.102	-.081	-.056	-1.627	2.176

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.757
Bartlett's Test of Sphericity	Approx. Chi-Square	458.776
	df	21
	Sig.	.000

Anti-Image Matrices

		Q8.1	Q8.2	Q8.3	Q8.4	Q8.5	Q8.6	Q8.7
Anti-image Covariance	Q8.1	.462	-.153	2.90E-02	2.30E-03	-1.3E-02	5.87E-02	-3.2E-02
	Q8.2	-.153	.180	-.133	-3.2E-02	2.97E-02	-4.2E-02	2.58E-02
	Q8.3	2.90E-02	-.133	.212	2.07E-02	-6.9E-02	2.44E-02	9.96E-03
	Q8.4	2.30E-03	-3.2E-02	2.07E-02	.159	-.120	-4.9E-02	-5.9E-03
	Q8.5	-1.3E-02	2.97E-02	-6.9E-02	-.120	.156	-1.0E-02	-4.0E-03
	Q8.6	5.87E-02	-4.2E-02	2.44E-02	-4.9E-02	-1.0E-02	.340	-.254
	Q8.7	-3.2E-02	2.58E-02	9.96E-03	-5.9E-03	-4.0E-03	-.254	.460
Anti-image Correlation	Q8.1	.803[a]	-.531	9.28E-02	8.48E-03	-4.9E-02	.148	-6.9E-02
	Q8.2	-.531	.726[a]	-.679	-.189	.177	-.170	8.95E-02
	Q8.3	9.28E-02	-.679	.774[a]	.113	-.379	9.09E-02	3.19E-02
	Q8.4	8.48E-03	-.189	.113	.781[a]	-.766	-.211	-2.2E-02
	Q8.5	-4.9E-02	.177	-.379	-.766	.757[a]	-4.5E-02	-1.5E-02
	Q8.6	.148	-.170	9.09E-02	-.211	-4.5E-02	.752[a]	-.643
	Q8.7	-6.9E-02	8.95E-02	3.19E-02	-2.2E-02	-1.5E-02	-.643	.692[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q8.1	.538	.533
Q8.2	.820	.981
Q8.3	.788	.769
Q8.4	.841	.921
Q8.5	.844	.876
Q8.6	.660	.434
Q8.7	.540	.246

Extraction Method: Maximum Likelihood.

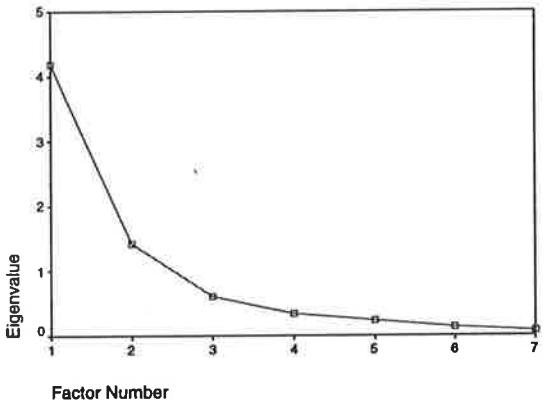
a. One or more communalitiy estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.182	59.739	59.739	3.679	52.562	52.562
2	1.426	20.376	80.115	1.080	15.426	67.989
3	.604	8.624	88.739			
4	.339	4.841	93.580			
5	.243	3.475	97.056			
6	.128	1.827	98.883			
7	7.82E-02	1.117	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor	
	1	2
Q8.1	.706	-.187
Q8.2	.973	-.185
Q8.3	.877	3.64E-03
Q8.4	.765	.580
Q8.5	.756	.552
Q8.6	.482	.449
Q8.7	.279	.410

Extraction Method: Maximum Likelihood.

a. Attempted to extract 2 factors. More than 25 iterations required. (Convergence=1.235E-03). Extraction was terminated.

Trust

Correlation Matrix

		Q9.36	Q9.37	Q9.38	Q9.39	Q9.40	Q9.41	Q9.42	Q9.43	Q9.44	Q9.45	Q9.46	Q9.47	Q9.48	Q9.49	Q9.50	Q9.51	Q9.52	Q9.53	Q9.54	Q9.55
Correla	Q9.3	1.000	-.638	-.703	.620	-.582	-.709	-.752	-.674	-.732	-.187	-.607	-.731	.678	-.767	-.615	-.690	-.388	-.249	-.303	-.568
	Q9.3	-.638	1.000	.674	-.471	.622	.579	.614	.564	.515	.183	.574	.597	-.481	.571	.490	.513	.362	.201	.231	.517
	Q9.3	-.703	.674	1.000	-.537	.582	.667	.727	.698	.648	.262	.538	.720	-.541	.689	.530	.629	.459	.361	.293	.574
	Q9.3	.620	-.471	-.537	1.000	-.479	-.544	-.610	-.521	-.458	-.344	-.561	-.602	.727	-.541	-.468	-.471	-.375	-.327	-.345	-.447
	Q9.4	-.582	.622	.582	-.479	1.000	.737	.679	.674	.572	.146	.584	.617	-.500	.679	.688	.701	.449	.259	.227	.590
	Q9.4	-.709	.579	.667	-.544	.737	1.000	.824	.789	.716	.188	.628	.730	-.587	.715	.654	.741	.449	.228	.221	.548
	Q9.4	-.752	.614	.727	-.610	.679	.824	1.000	.828	.769	.284	.682	.748	-.632	.722	.635	.778	.423	.250	.323	.629
	Q9.4	-.674	.564	.698	-.521	.674	.789	.828	1.000	.727	.269	.593	.761	-.519	.689	.568	.710	.376	.284	.227	.614
	Q9.4	-.732	.515	.648	-.458	.572	.716	.769	.727	1.000	.336	.582	.692	-.509	.657	.662	.666	.352	.200	.178	.587
	Q9.4	-.187	.183	.262	-.344	.146	.188	.284	.269	.336	1.000	.295	.239	-.247	.333	.287	.238	.412	.517	.311	.252
	Q9.4	-.607	.574	.538	-.561	.584	.628	.682	.593	.582	.295	1.000	.656	-.531	.638	.589	.632	.425	.221	.222	.531
	Q9.4	-.731	.597	.720	-.602	.617	.730	.748	.761	.692	.239	.656	1.000	-.658	.787	.650	.719	.364	.219	.124	.552
	Q9.4	.678	-.481	-.541	.727	-.500	-.587	-.632	-.519	-.509	-.247	-.531	-.658	1.000	-.609	-.455	-.522	-.409	-.293	-.259	-.521
	Q9.4	-.767	.571	.689	-.541	.679	.715	.722	.689	.657	.333	.638	.787	-.609	1.000	.735	.789	.407	.234	.330	.566
	Q9.5	-.615	.490	.530	-.468	.688	.654	.635	.568	.662	.287	.589	.650	-.455	.735	1.000	.743	.272	.123	.131	.510
	Q9.5	-.690	.513	.629	-.471	.701	.741	.778	.710	.666	.238	.632	.719	-.522	.789	.743	1.000	.353	.194	.234	.581
	Q9.5	-.388	.362	.459	-.375	.449	.449	.423	.376	.352	.412	.425	.364	-.409	.407	.272	.353	1.000	.781	.263	.414
	Q9.5	-.249	.201	.361	-.327	.259	.228	.250	.284	.200	.517	.221	.219	-.293	.234	.123	.194	.781	1.000	.215	.302
	Q9.5	-.303	.231	.293	-.345	.227	.221	.323	.227	.178	.311	.222	.124	-.259	.330	.131	.234	.263	.215	1.000	.339
	Q9.5	-.568	.517	.574	-.447	.590	.548	.629	.614	.587	.252	.531	.552	-.521	.566	.510	.581	.414	.302	.339	1.000

Inverse of Correlation Matrix

	Q9.36	Q9.37	Q9.38	Q9.39	Q9.40	Q9.41	Q9.42	Q9.43	Q9.44	Q9.45	Q9.46	Q9.47	Q9.48	Q9.49	Q9.50	Q9.51	Q9.52	Q9.53	Q9.54	Q9.55
Q9.3	4.924	1.009	.060	-.690	-.975	.177	.179	-.102	1.776	1.199	-.020	-.223	-.751	1.758	.074	.390	-.245	.732	.313	-.121
Q9.3	1.009	2.585	1.048	-.153	1.017	.092	-.193	.130	.478	-.336	-.475	-.252	-.102	.408	.077	.509	-.103	.436	.064	-.174
Q9.3	.060	1.048	3.451	.202	.359	-.063	-.644	-.169	-.425	.329	.428	-.815	-.308	-.634	.135	-.044	-.028	-.662	-.195	-.162
Q9.3	-.690	-.153	.202	2.925	.253	.077	.399	.086	-.648	.428	.486	.535	1.308	-.719	.468	-.488	-.355	.292	.415	-.209
Q9.4	-.975	1.017	.359	.253	3.774	-.883	.181	-.800	.020	.814	.028	.553	.135	-.680	1.172	-.518	-.484	-.281	-.109	-.346
Q9.4	.177	.092	-.063	.077	-.883	4.779	1.286	1.233	-.447	.354	.020	-.088	.290	-.064	-.325	-.271	-.967	.584	.046	.518
Q9.4	.179	-.193	-.644	.399	.181	1.286	6.537	1.846	1.060	-.088	-.604	.286	.608	.727	.196	1.520	-.230	.483	-.503	-.018
Q9.4	-.102	.130	-.169	.086	-.800	1.233	1.846	4.989	-.601	-.175	.125	1.404	-.783	-.258	.965	-.069	.967	-.832	.129	-.544
Q9.4	1.776	.478	-.425	-.648	.020	-.447	1.060	-.601	4.047	-.962	-.024	-.355	-.158	.793	-.859	.407	-.250	.651	.330	-.473
Q9.4	1.199	-.336	.329	.428	.814	.354	-.088	-.175	-.962	2.175	-.175	.238	.037	-.881	-.490	.027	.113	1.151	-.400	.149
Q9.4	-.020	-.475	.428	.486	.028	.020	-.604	.125	-.024	-.175	2.521	-.480	-.184	-.153	-.165	-.273	-.623	.424	.091	-.202
Q9.4	-.223	-.252	-.815	.535	.553	-.088	.286	1.404	-.355	.238	-.480	4.996	.827	1.706	-.157	-.293	.013	.137	.815	.083
Q9.4	-.751	-.102	-.308	1.308	.135	.290	.608	-.783	-.158	.037	-.184	.827	3.055	.385	-.463	-.169	.176	.005	-.175	.494
Q9.4	1.758	.408	-.634	-.719	-.680	-.064	.727	-.258	.793	-.881	-.153	1.706	.385	5.571	1.055	1.128	-.434	.724	-.697	.183
Q9.5	.074	.077	.135	.468	1.172	-.325	.196	.965	-.859	-.490	-.165	-.157	-.463	1.055	3.620	-.990	.421	.150	.456	-.198
Q9.5	.390	.509	-.044	-.488	-.518	-.271	1.520	-.069	.407	.027	-.273	-.293	-.169	1.128	-.990	4.322	.228	-.139	.045	-.244
Q9.5	-.245	-.103	-.028	-.355	-.484	-.967	-.230	.967	-.250	.113	-.623	.013	.176	-.434	.421	.228	3.753	2.699	-.120	-.127
Q9.5	.732	.436	-.662	.292	-.281	.584	.483	-.832	.651	1.151	.424	.137	.005	.724	.150	-.139	2.699	3.765	.235	-.141
Q9.5	.313	.064	-.195	.415	-.109	.046	-.503	.129	.330	-.400	.091	.815	-.175	-.697	.456	.045	-.120	.235	1.601	-.390
Q9.5	-.121	-.174	-.162	-.209	-.346	.518	-.018	-.544	-.473	.149	-.202	.083	.494	.183	-.198	-.244	-.127	-.141	-.390	2.212

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.919
Bartlett's Test of Sphericity	Approx. Chi-Square	1355.169
	df	190
	Sig.	.000

Anti-Image Matrices

		Q9.36	Q9.37	Q9.38	Q9.39	Q9.40	Q9.41	Q9.42	Q9.43	Q9.44	Q9.45	Q9.46	Q9.47	Q9.48	Q9.49	Q9.50	Q9.51	Q9.52	Q9.53	Q9.54	Q
Anti-Image Cov	Q9.3	.203	-3E-02	-1E-03	-8E-02	2E-02	-0E-03	-5E-03	-1E-03	-1E-02	-.112	-6E-03	-0E-03	-0E-02	-1E-02	-6E-03	-3E-02	-3E-02	-5E-02	-6E-02	1E
	Q9.3	-3E-02	.387	-.118	-0E-02	-.104	-7E-03	-1E-02	-1E-02	-7E-02	-0E-02	-3E-02	-9E-02	-3E-02	-3E-02	-7E-03	-6E-02	-1E-02	-8E-02	-5E-02	0E
	Q9.3	-1E-03	-.118	.290	-0E-02	-6E-02	-8E-03	-9E-02	-8E-03	-0E-02	-9E-02	-2E-02	-7E-02	-9E-02	-3E-02	-8E-02	-9E-03	-2E-03	-1E-02	-5E-02	1E
	Q9.3	-8E-02	-0E-02	-0E-02	.342	-9E-02	-1E-03	-9E-02	-2E-03	-5E-02	-3E-02	-9E-02	-6E-02	-.146	-4E-02	-2E-02	-9E-02	-2E-02	-5E-02	-6E-02	2E
	Q9.4	-2E-02	-.104	-6E-02	-9E-02	.265	-9E-02	-2E-03	-2E-02	-3E-03	-2E-02	-7E-03	-3E-02	-7E-02	-2E-02	-6E-02	-2E-02	-4E-02	-0E-02	-8E-02	1E
	Q9.4	-0E-03	-7E-03	-8E-03	-1E-03	-9E-02	.209	-1E-02	-2E-02	-3E-02	-1E-02	-6E-03	-7E-03	-8E-02	-4E-03	-9E-02	-3E-02	-4E-02	-5E-02	-7E-03	0E
	Q9.4	-5E-03	-1E-02	-9E-02	-9E-02	-2E-03	-1E-02	.153	-7E-02	-0E-02	-2E-03	-7E-02	-7E-03	-5E-02	-0E-02	-7E-03	-4E-02	-4E-03	-6E-02	-8E-02	2E
	Q9.4	-1E-03	-1E-02	-8E-03	-2E-03	-2E-02	-2E-02	-7E-02	.200	-0E-02	-6E-02	-6E-03	-6E-02	-1E-02	-3E-03	-4E-02	-2E-03	-6E-02	-4E-02	-1E-02	9E
	Q9.4	-1E-02	-7E-02	-0E-02	-5E-02	-3E-03	-3E-02	-0E-02	-0E-02	.247	-.109	-4E-03	-8E-02	-3E-02	-2E-02	-9E-02	-3E-02	-6E-02	-7E-02	-9E-02	3E
	Q9.4	-.112	-0E-02	-9E-02	-3E-02	-2E-02	-1E-02	-2E-03	-6E-02	-.109	.460	-2E-02	-9E-02	-5E-03	-3E-02	-2E-02	-0E-03	-9E-02	-.141	-.115	9E
	Q9.4	-6E-03	-3E-02	-2E-02	-9E-02	-7E-03	-6E-03	-7E-02	-6E-03	-4E-03	-2E-02	.397	-8E-02	-4E-02	-1E-02	-8E-02	-5E-02	-6E-02	-7E-02	-5E-02	6E
	Q9.4	-0E-03	-9E-02	-7E-02	-6E-02	-3E-02	-7E-03	-7E-03	-6E-02	-8E-02	-9E-02	-8E-02	.200	-1E-02	-1E-02	-7E-03	-4E-02	-3E-04	-6E-03	.102	7E
	Q9.4	-0E-02	-3E-02	-9E-02	-.146	-7E-02	-8E-02	-5E-02	-1E-02	-3E-02	-5E-03	-4E-02	-1E-02	.327	-6E-02	-2E-02	-3E-02	-3E-02	-8E-04	-6E-02	1E
	Q9.4	-1E-02	-3E-02	-3E-02	-4E-02	-2E-02	-4E-03	-0E-02	-3E-03	-2E-02	-3E-02	-1E-02	-1E-02	-6E-02	.180	-2E-02	-7E-02	-1E-02	-5E-02	-8E-02	9E
	Q9.5	-6E-03	-7E-03	-8E-02	-2E-02	-6E-02	-9E-02	-7E-03	-4E-02	-9E-02	-2E-02	-8E-02	-7E-03	-2E-02	-2E-02	.276	-3E-02	-0E-02	-0E-02	-6E-02	5E
	Q9.5	-3E-02	-6E-02	-9E-03	-9E-02	-2E-02	-3E-02	-4E-02	-2E-03	-3E-02	-0E-03	-5E-02	-4E-02	-3E-02	-7E-02	-3E-02	.231	-0E-02	-6E-03	-9E-03	6E
	Q9.5	-3E-02	-1E-02	-2E-03	-2E-02	-4E-02	-4E-02	-4E-03	-6E-02	-6E-02	-9E-02	-6E-02	-3E-04	-3E-02	-1E-02	-0E-02	-0E-02	.266	-.191	-0E-02	5E
	Q9.5	-5E-02	-8E-02	-1E-02	-5E-02	-0E-02	-5E-02	-6E-02	-4E-02	-7E-02	-.141	-7E-02	-6E-03	-8E-04	-5E-02	-0E-02	-6E-03	-.191	.266	-9E-02	7E
	Q9.5	-6E-02	-5E-02	-5E-02	-6E-02	-8E-02	-7E-03	-8E-02	-1E-02	-9E-02	-.115	-5E-02	.102	-6E-02	-8E-02	-6E-02	-9E-03	-0E-02	-9E-02	.625	-
	Q9.5	-1E-02	-0E-02	-1E-02	-2E-02	-1E-02	-0E-02	-2E-03	-9E-02	-3E-02	-9E-02	-6E-02	-7E-03	-1E-02	-9E-02	-5E-02	-6E-02	-5E-02	-7E-02	-.110	
Anti-Image Cor	Q9.3	.915[a]	.283	-5E-02	-.182	-.226	-4E-02	-5E-02	-1E-02	.398	-.366	-8E-03	-5E-02	-.194	.336	-5E-02	-5E-02	-7E-02	.170	.111	7E
	Q9.3	.283	.916[a]	-.351	-6E-02	-.326	-3E-02	-7E-02	-3E-02	.148	-.142	-.186	-0E-02	-6E-02	.107	-3E-02	.152	-3E-02	.140	-5E-02	3E
	Q9.3	-5E-02	-.351	.953[a]	-7E-02	-5E-02	-6E-02	-.136	-1E-02	-.114	.120	.145	-.196	-5E-02	-.145	-2E-02	-1E-02	-9E-03	-.184	-3E-02	9E
	Q9.3	-.182	-6E-02	-7E-02	.908[a]	-0E-02	-6E-02	-3E-02	-6E-02	-.188	.170	.179	.140	-.438	-.178	.144	-.137	-.107	-1E-02	.192	2E
	Q9.4	-.226	-.326	-5E-02	-0E-02	.921[a]	-.208	-4E-02	-.184	-1E-03	.284	5E-03	.127	-7E-02	-.148	-.317	-.128	-.129	-5E-02	-5E-02	-
	Q9.4	-4E-02	-3E-02	-6E-02	-6E-02	-.208	.961[a]	-.230	-.252	-.102	.110	-5E-03	-8E-02	-8E-02	-2E-02	-8E-02	-0E-02	-.228	.138	-8E-02	
	Q9.4	-5E-02	-7E-02	-.136	-3E-02	-4E-02	-.230	.952[a]	-.323	-.206	-3E-02	-.149	-1E-02	.136	.121	-2E-02	-.286	-6E-02	-3E-02	-.156	7E
	Q9.4	-1E-02	-3E-02	-1E-02	-6E-02	-.184	-.252	-.323	.932[a]	-.134	-3E-02	-3E-02	-.281	-.201	-9E-02	.227	-5E-02	.223	-.192	-5E-02	-
	Q9.4	.398	.148	-.114	-.188	-1E-03	-.102	-.206	-.134	.918[a]	-.324	-5E-03	-9E-02	-5E-02	.167	-.224	-3E-02	-4E-02	.167	.130	-
	Q9.4	-.366	-.142	.120	.170	.284	.110	-3E-02	-3E-02	-.324	.694[a]	-5E-02	-3E-02	-3E-02	-.253	-.175	-0E-03	-7E-02	-.402	-.214	9E
	Q9.4	-8E-03	-.186	.145	.179	-5E-03	-5E-03	-.149	-3E-02	-5E-03	-5E-02	.963[a]	-.135	-6E-02	-1E-02	-5E-02	-3E-02	-.203	.138	-1E-02	6E
	Q9.4	-5E-02	-0E-02	-.196	.140	.127	-8E-02	-1E-02	-.281	-9E-02	-3E-02	-.135	.944[a]	.212	-.323	-7E-02	-3E-02	-4E-03	-5E-02	.288	8E
	Q9.4	-.194	-6E-02	-5E-02	-.438	-7E-02	-8E-02	.136	-.201	-5E-02	-3E-02	-6E-02	.212	.924[a]	-3E-02	-.139	-6E-02	-8E-02	-9E-03	-9E-02	
	Q9.4	.336	.107	-.145	-.178	-.148	-2E-02	.121	-9E-02	.167	-.253	-1E-02	-.323	-3E-02	.923[a]	-.235	-.230	-5E-02	.158	-.233	2E
	Q9.5	-5E-02	-3E-02	-2E-02	.144	-.317	-8E-02	-2E-02	.227	-.224	-.175	-5E-02	-7E-02	-.139	-.235	.925[a]	-.250	.114	-6E-02	.189	0E
	Q9.5	-5E-02	.152	-1E-02	-.137	-.128	-0E-02	-.286	-5E-02	-3E-02	-0E-03	-3E-02	-3E-02	-6E-02	-.230	-.250	.958[a]	-5E-02	-5E-02	-1E-02	9E
	Q9.5	-7E-02	-3E-02	-9E-03	-.107	-.129	-.228	-6E-02	.223	-4E-02	-7E-02	-.203	-4E-03	-8E-02	-5E-02	.114	-5E-02	.821[a]	-.718	-9E-02	4E
	Q9.5	.170	.140	-.184	-1E-02	-5E-02	.138	-3E-02	-.192	.167	-.402	.138	-5E-02	-9E-03	.158	-6E-02	-5E-02	-.718	.678[a]	-6E-02	9E
	Q9.5	.111	-5E-02	-3E-02	.192	-5E-02	-8E-02	-.156	-5E-02	.130	-.214	-1E-02	.288	-9E-02	-.233	.189	-1E-02	-9E-02	-6E-02	.769[a]	-
	Q9.5	-7E-02	-3E-02	-9E-02	-2E-02	-.120	.159	-7E-03	-.164	-.158	-9E-02	-6E-02	-8E-02	.190	-2E-02	-0E-02	-9E-02	-4E-02	-9E-02	-.207	

a Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q9.36	.797	.711
Q9.37	.613	.482
Q9.38	.710	.652
Q9.39	.658	.455
Q9.40	.735	.605
Q9.41	.791	.758
Q9.42	.847	.821
Q9.43	.800	.726
Q9.44	.753	.660
Q9.45	.540	.295
Q9.46	.603	.554
Q9.47	.800	.741
Q9.48	.673	.494
Q9.49	.820	.739
Q9.50	.724	.585
Q9.51	.769	.719
Q9.52	.734	.679
Q9.53	.734	.999
Q9.54	.375	.110
Q9.55	.548	.488

Extraction Method: Maximum Likelihood.

a. One or more communalitiy estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.081	55.404	55.404	3.016	15.082	15.082
2	1.838	9.190	64.594	9.256	46.279	61.360
3	.974	4.870	69.464			
4	.847	4.234	73.698			
5	.799	3.995	77.693			
6	.617	3.083	80.776			
7	.565	2.827	83.603			
8	.501	2.507	86.109			
9	.460	2.301	88.410			
10	.403	2.013	90.423			
11	.357	1.787	92.210			
12	.284	1.421	93.631			
13	.233	1.164	94.795			
14	.226	1.132	95.927			
15	.176	.879	96.806			
16	.159	.796	97.603			
17	.152	.761	98.364			
18	.127	.637	99.001			
19	.104	.520	99.521			
20	9.57E-02	.479	100.000			

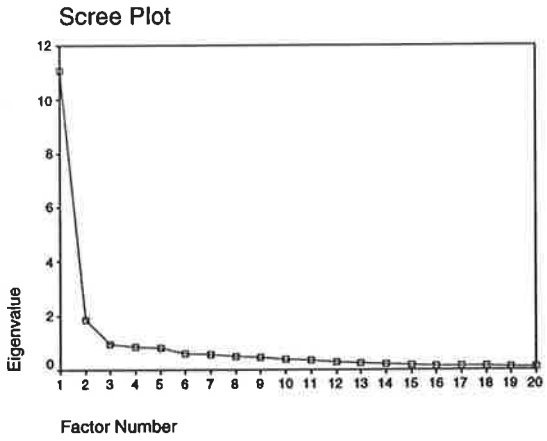
Extraction Method: Maximum Likelihood.

Factor Matrix[a]

	Factor	
	1	2
Q9.36	-.257	-.803
Q9.37	.209	.662
Q9.38	.369	.718
Q9.39	-.333	-.587
Q9.40	.267	.731
Q9.41	.237	.838
Q9.42	.259	.868
Q9.43	.292	.800
Q9.44	.208	.785
Q9.45	.519	.161
Q9.46	.229	.708
Q9.47	.227	.830
Q9.48	-.300	-.636
Q9.49	.243	.824
Q9.50	.131	.753
Q9.51	.202	.823
Q9.52	.784	.254
Q9.53	.999	-1.0E-02
Q9.54	.218	.250
Q9.55	.309	.626

Extraction Method: Maximum Likelihood.

a. 2 factors extracted. 12 iterations required.



Goodness-of-fit Test

Chi-Square	df	Sig.
221.387	151	.000

Commitment

Correlation Matrix

		Q9.2	Q9.3	Q9.4	Q9.5	Q9.6	Q9.7	Q9.10	Q9.11	Q9.14
Correlation	Q9.2	1.000	-.530	-.467	.625	.495	-.180	.709	-.299	.539
	Q9.3	-.530	1.000	.428	-.364	-.411	.282	-.513	.425	-.503
	Q9.4	-.467	.428	1.000	-.341	-.511	.126	-.547	.400	-.518
	Q9.5	.625	-.364	-.341	1.000	.561	-.253	.633	-.243	.526
	Q9.6	.495	-.411	-.511	.561	1.000	-.244	.733	-.497	.721
	Q9.7	-.180	.282	.126	-.253	-.244	1.000	-.267	.205	-.174
	Q9.10	.709	-.513	-.547	.633	.733	-.267	1.000	-.514	.781
	Q9.11	-.299	.425	.400	-.243	-.497	.205	-.514	1.000	-.521
	Q9.14	.539	-.503	-.518	.526	.721	-.174	.781	-.521	1.000

Inverse of Correlation Matrix

	Q9.2	Q9.3	Q9.4	Q9.5	Q9.6	Q9.7	Q9.10	Q9.11	Q9.14
Q9.2	2.582	.612	.271	-.768	.257	-.163	-1.409	-.226	.230
Q9.3	.612	1.709	-.212	-.064	-.118	-.281	-.096	-.315	.400
Q9.4	.271	-.212	1.602	-.138	.326	.074	.242	-.147	.163
Q9.5	-.768	-.064	-.138	2.040	-.502	.196	-.448	-.247	-.146
Q9.6	.257	-.118	.326	-.502	2.715	.127	-.880	.300	-.856
Q9.7	-.163	-.281	.074	.196	.127	1.164	.263	-.085	-.257
Q9.10	-1.409	-.096	.242	-.448	-.880	.263	4.507	.437	-1.539
Q9.11	-.226	-.315	-.147	-.247	.300	-.085	.437	1.602	.279
Q9.14	.230	.400	.163	-.146	-.856	-.257	-1.539	.279	3.158

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.879
Bartlett's Test of Sphericity	Approx. Chi-Square	368.997
	df	36
	Sig.	.000

Anti-Image Matrices

		Q9.2	Q9.3	Q9.4	Q9.5	Q9.6	Q9.7	Q9.10	Q9.11	Q9.14
Anti-image Covariance	Q9.2	.387	.139	6.55E-02	-.146	3.66E-02	-5.4E-02	-.121	-5.5E-02	2.82E-02
	Q9.3	.139	.585	-7.7E-02	-1.8E-02	-2.5E-02	-.141	-1.2E-02	-.115	7.41E-02
	Q9.4	6.55E-02	-7.7E-02	.624	-4.2E-02	7.49E-02	3.97E-02	3.35E-02	-5.7E-02	3.21E-02
	Q9.5	-.146	-1.8E-02	-4.2E-02	.490	-9.1E-02	8.25E-02	-4.9E-02	-7.6E-02	-2.3E-02
	Q9.6	3.66E-02	-2.5E-02	7.49E-02	-9.1E-02	.368	4.02E-02	-7.2E-02	6.91E-02	-1.0E-01
	Q9.7	-5.4E-02	-.141	3.97E-02	8.25E-02	4.02E-02	.859	5.01E-02	-4.6E-02	-7.0E-02
	Q9.10	-.121	-1.2E-02	3.35E-02	-4.9E-02	-7.2E-02	5.01E-02	.222	6.06E-02	-.108
	Q9.11	-5.5E-02	-.115	-5.7E-02	-7.6E-02	6.91E-02	-4.6E-02	6.06E-02	.624	5.52E-02
	Q9.14	2.82E-02	7.41E-02	3.21E-02	-2.3E-02	-1.0E-01	-7.0E-02	-.108	5.52E-02	.317
Anti-image Correlation	Q9.2	.829[a]	.292	.133	-.334	9.69E-02	-9.4E-02	-.413	-.111	8.04E-02
	Q9.3	.292	.879[a]	-.128	-3.4E-02	-5.5E-02	-.199	-3.4E-02	-.190	.172
	Q9.4	.133	-.128	.945[a]	-7.7E-02	.156	5.42E-02	9.00E-02	-9.2E-02	7.23E-02
	Q9.5	-.334	-3.4E-02	-7.7E-02	.887[a]	-.213	.127	-.148	-.137	-5.7E-02
	Q9.6	9.69E-02	-5.5E-02	.156	-.213	.902[a]	7.14E-02	-.252	.144	-.292
	Q9.7	-9.4E-02	-.199	5.42E-02	.127	7.14E-02	.786[a]	.115	-6.2E-02	-.134
	Q9.10	-.413	-3.4E-02	9.00E-02	-.148	-.252	.115	.862[a]	.163	-.408
	Q9.11	-.111	-.190	-9.2E-02	-.137	.144	-6.2E-02	.163	.902[a]	.124
	Q9.14	8.04E-02	.172	7.23E-02	-5.7E-02	-.292	-.134	-.408	.124	.884[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Q9.2	.613	.531
Q9.3	.415	.344
Q9.4	.376	.371
Q9.5	.510	.455
Q9.6	.632	.638
Q9.7	.141	8.110E-02
Q9.10	.778	.860
Q9.11	.376	.317
Q9.14	.683	.704

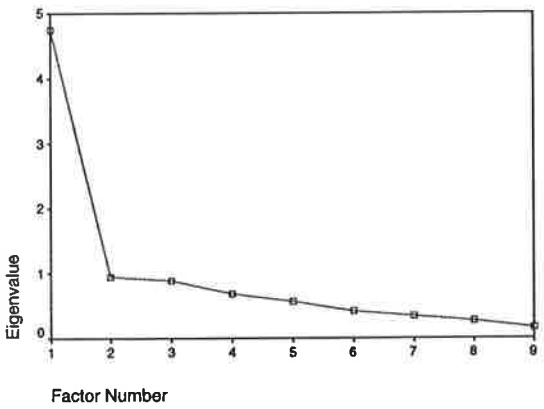
Extraction Method: Maximum Likelihood.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.748	52.759	52.759	4.302	47.799	47.799
2	.950	10.557	63.316			
3	.888	9.864	73.180			
4	.687	7.635	80.815			
5	.559	6.208	87.023			
6	.410	4.559	91.582			
7	.336	3.739	95.321			
8	.259	2.881	98.202			
9	.162	1.798	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor
	1
Q9.2	.729
Q9.3	-.587
Q9.4	-.609
Q9.5	.674
Q9.6	.799
Q9.7	-.285
Q9.10	.927
Q9.11	-.563
Q9.14	.839

Extraction Method: Maximum Likelihood.

a. 1 factors extracted. 5 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
39.287	27	.060

Role Integrity

Correlation Matrix

		Q9.1	Q9.8	Q9.9	Q9.12	Q9.13	Q9.15	Q9.16	Q9.17	Q9.18	Q9.19	Q9.24
Correlat	Q9.1	1.000	.326	.763	.312	.626	.563	.471	.465	.423	.651	.583
	Q9.8	.326	1.000	.351	.365	.199	.296	.370	.064	.475	.367	.383
	Q9.9	.763	.351	1.000	.217	.733	.536	.494	.580	.548	.855	.676
	Q9.1	.312	.365	.217	1.000	.112	.287	.253	-.117	.388	.159	.351
	Q9.1	.626	.199	.733	.112	1.000	.478	.390	.695	.430	.729	.617
	Q9.1	.563	.296	.536	.287	.478	1.000	.777	.601	.475	.540	.552
	Q9.1	.471	.370	.494	.253	.390	.777	1.000	.573	.600	.504	.434
	Q9.1	.465	.064	.580	-.117	.695	.601	.573	1.000	.379	.652	.431
	Q9.1	.423	.475	.548	.388	.430	.475	.600	.379	1.000	.611	.539
	Q9.1	.651	.367	.855	.159	.729	.540	.504	.652	.611	1.000	.709
	Q9.2	.583	.383	.676	.351	.617	.552	.434	.431	.539	.709	1.000

Inverse of Correlation Matrix

	Q9.1	Q9.8	Q9.9	Q9.12	Q9.13	Q9.15	Q9.16	Q9.17	Q9.18	Q9.19	Q9.24
Q9.1	2.820	-.101	-1.713	-.360	-.490	-.556	-.073	.166	.320	.119	-.007
Q9.8	-.101	1.519	-.003	-.147	.039	.052	-.387	.522	-.326	-.368	-.143
Q9.9	-1.713	-.003	5.401	.060	-.824	.202	-.306	.279	-.055	-2.874	-.198
Q9.12	-.360	-.147	.060	1.659	-.168	-.405	-.048	.839	-.503	.339	-.340
Q9.13	-.490	.039	-.824	-.168	3.314	.196	.578	-1.619	-.067	-.250	-.607
Q9.15	-.556	.052	.202	-.405	.196	3.443	-1.960	-.871	.404	.085	-.765
Q9.16	-.073	-.387	-.306	-.048	.578	-1.960	3.499	-.994	-1.060	.375	.356
Q9.17	.166	.522	.279	.839	-1.619	-.871	-.994	3.639	.058	-1.201	.383
Q9.18	.320	-.326	-.055	-.503	-.067	.404	-1.060	.058	2.385	-.942	-.212
Q9.19	.119	-.368	-2.874	.339	-.250	.085	.375	-1.201	-.942	5.498	-1.031
Q9.24	-.007	-.143	-.198	-.340	-.607	-.765	.356	.383	-.212	-1.031	2.635

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.862
Bartlett's Test of Sphericity	Approx. Chi-Square	625.463
	df	55
	Sig.	.000

Anti-Image Matrices

		Q9.1	Q9.8	Q9.9	Q9.12	Q9.13	Q9.15	Q9.16	Q9.17	Q9.18	Q9.19	Q9.24
Anti-image Covarian	Q9.1	.355	-2.4E-02	-.112	-7.7E-02	-5.2E-02	-5.7E-02	-7.4E-03	1.62E-02	4.75E-02	7.64E-03	-9.4E-04
	Q9.8	-2.4E-02	.658	-3.2E-04	-5.8E-02	7.85E-03	9.88E-03	-7.3E-02	9.45E-02	-9.0E-02	-4.4E-02	-3.6E-02
	Q9.9	-.112	-3.2E-04	.185	6.66E-03	-4.6E-02	1.09E-02	-1.6E-02	1.42E-02	-4.3E-03	-9.7E-02	-1.4E-02
	Q9.12	-7.7E-02	-5.8E-02	6.66E-03	.603	-3.0E-02	-7.1E-02	-8.3E-03	.139	-.127	3.72E-02	-7.8E-02
	Q9.13	-5.2E-02	7.85E-03	-4.6E-02	-3.0E-02	.302	1.72E-02	4.99E-02	-.134	-8.5E-03	-1.4E-02	-7.0E-02
	Q9.15	-5.7E-02	9.88E-03	1.09E-02	-7.1E-02	1.72E-02	.290	-.163	-7.0E-02	4.91E-02	4.48E-03	-8.4E-02
	Q9.16	-7.4E-03	-7.3E-02	-1.6E-02	-8.3E-03	4.99E-02	-.163	.286	-7.8E-02	-.127	1.95E-02	3.86E-02
	Q9.17	1.62E-02	9.45E-02	1.42E-02	.139	-.134	-7.0E-02	-7.8E-02	.275	6.72E-03	-6.0E-02	3.99E-02
	Q9.18	4.75E-02	-9.0E-02	-4.3E-03	-.127	-8.5E-03	4.91E-02	-.127	6.72E-03	.419	-7.2E-02	-3.4E-02
	Q9.19	7.64E-03	-4.4E-02	-9.7E-02	3.72E-02	-1.4E-02	4.48E-03	1.95E-02	-6.0E-02	-7.2E-02	.182	-7.1E-02
	Q9.24	-9.4E-04	-3.6E-02	-1.4E-02	-7.8E-02	-7.0E-02	-8.4E-02	3.86E-02	3.99E-02	-3.4E-02	-7.1E-02	.379
Anti-image Correlati	Q9.1	.906[a]	-4.9E-02	-.439	-.166	-.160	-.178	-2.3E-02	5.20E-02	.123	3.01E-02	-2.6E-03
	Q9.8	-4.9E-02	.890[a]	-9.2E-04	-9.3E-02	1.76E-02	2.26E-02	-.168	.222	-.171	-.127	-7.2E-02
	Q9.9	-.439	-9.2E-04	.875[a]	1.99E-02	-.195	4.68E-02	-7.0E-02	6.30E-02	-1.5E-02	-.527	-5.2E-02
	Q9.12	-.166	-9.3E-02	1.99E-02	.721[a]	-7.1E-02	-.170	-2.0E-02	.342	-.253	.112	-.163
	Q9.13	-.160	1.76E-02	-.195	-7.1E-02	.890[a]	5.81E-02	.170	-.466	-2.4E-02	-5.8E-02	-.206
	Q9.15	-.178	2.26E-02	4.68E-02	-.170	5.81E-02	.840[a]	-.565	-.246	.141	1.95E-02	-.254
	Q9.16	-2.3E-02	-.168	-7.0E-02	-2.0E-02	.170	-.565	.806[a]	-.278	-.367	3.54E-02	.117
	Q9.17	5.20E-02	.222	6.30E-02	.342	-.466	-.246	-.278	.802[a]	1.98E-02	-.269	.124
	Q9.18	.123	-.171	-1.5E-02	-.253	-2.4E-02	.141	-.367	1.98E-02	.878[a]	-.260	-8.4E-02
	Q9.19	3.01E-02	-.127	-.527	.112	-5.8E-02	1.95E-02	3.54E-02	-.269	-.260	.874[a]	-.271
	Q9.24	-2.6E-03	-7.2E-02	-5.2E-02	-.163	-.206	-.254	.117	.124	-8.4E-02	-.271	.921[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q9.1	.645	.595
Q9.8	.342	.181
Q9.9	.815	.854
Q9.12	.397	7.744E-02
Q9.13	.698	.654
Q9.15	.710	.654
Q9.16	.714	.999
Q9.17	.725	.508
Q9.18	.581	.475
Q9.19	.818	.842
Q9.24	.621	.577

Extraction Method: Maximum Likelihood.

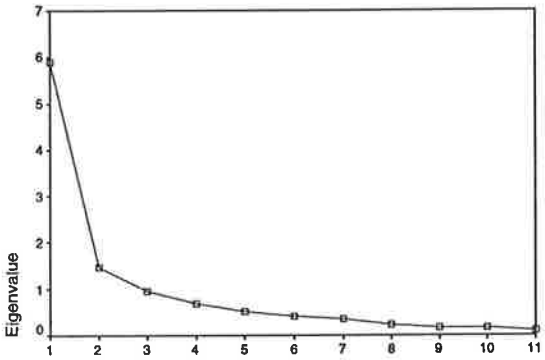
a. One or more communalitiy estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.912	53.749	53.749	3.595	32.677	32.677
2	1.481	13.461	67.210	2.822	25.652	58.330
3	.960	8.724	75.935			
4	.693	6.303	82.238			
5	.520	4.724	86.962			
6	.405	3.678	90.640			
7	.350	3.180	93.820			
8	.229	2.079	95.899			
9	.175	1.593	97.492			
10	.167	1.514	99.006			
11	.109	.994	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor	
	1	2
Q9.1	.476	.606
Q9.8	.372	.208
Q9.9	.501	.776
Q9.12	.255	.112
Q9.13	.396	.705
Q9.15	.779	.217
Q9.16	.999	-8.8E-03
Q9.17	.576	.419
Q9.18	.603	.334
Q9.19	.511	.762
Q9.24	.439	.620

Extraction Method: Maximum Likelihood.

a. 2 factors extracted. 9 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
102.649	34	.000

Communication

Correlation Matrix

		Q11.1	Q11.2	Q11.3	Q11.4	Q11.5	Q11.6	Q11.7	Q11.8	Q11.9	Q11.10	Q11.11	Q11.12	Q11.13	Q11.14	Q11.15	Q11.16
Correlati	Q11.1	1.000	-.487	-.444	.404	.298	-.237	.230	.421	.631	.671	.271	.254	.197	-.173	-.259	-.347
	Q11.2	-.487	1.000	.557	-.122	-.168	.338	-.081	-.225	-.493	-.469	-.239	-.213	-.182	.313	.344	.512
	Q11.3	-.444	.557	1.000	-.403	-.204	.289	-.188	-.332	-.435	-.338	-.537	-.542	-.383	.455	.346	.531
	Q11.4	.404	-.122	-.403	1.000	.360	-.107	.102	.201	.292	.328	.396	.449	.459	-.159	-.129	-.210
	Q11.5	.298	-.168	-.204	.360	1.000	-.470	.266	.277	.411	.316	.106	.058	.171	-.145	-.051	-.225
	Q11.6	-.237	.338	.289	-.107	-.470	1.000	-.227	-.229	-.251	-.177	-.133	-.133	-.172	.345	.302	.410
	Q11.7	.230	-.081	-.188	.102	.266	-.227	1.000	.476	.241	.241	.167	.144	.068	.006	.117	.099
	Q11.8	.421	-.225	-.332	.201	.277	-.229	.476	1.000	.480	.389	.348	.240	.238	-.201	-.094	-.202
	Q11.9	.631	-.493	-.435	.292	.411	-.251	.241	.480	1.000	.857	.507	.461	.362	-.311	-.241	-.399
	Q11.1	.671	-.469	-.338	.328	.316	-.177	.241	.389	.857	1.000	.461	.441	.245	-.244	-.247	-.304
	Q11.1	.271	-.239	-.537	.396	.106	-.133	.167	.348	.507	.461	1.000	.922	.578	-.455	-.173	-.279
	Q11.1	.254	-.213	-.542	.449	.058	-.133	.144	.240	.461	.441	.922	1.000	.579	-.409	-.189	-.273
	Q11.1	.197	-.182	-.383	.459	.171	-.172	.068	.238	.362	.245	.578	.579	1.000	-.296	-.124	-.270
	Q11.1	-.173	.313	.455	-.159	-.145	.345	.006	-.201	-.311	-.244	-.455	-.409	-.296	1.000	.486	.478
	Q11.1	-.259	.344	.346	-.129	-.051	.302	.117	-.094	-.241	-.247	-.173	-.189	-.124	.486	1.000	.750
	Q11.1	-.347	.512	.531	-.210	-.225	.410	.099	-.202	-.399	-.304	-.279	-.273	-.270	.478	.750	1.000

Inverse of Correlation Matrix

	Q11.1	Q11.2	Q11.3	Q11.4	Q11.5	Q11.6	Q11.7	Q11.8	Q11.9	Q11.10	Q11.11	Q11.12	Q11.13	Q11.14	Q11.15	Q11.16
Q11.1	2.494	.269	.486	-.628	.200	.169	-.006	-.345	-.338	-1.103	.181	.406	.107	-.214	.121	-.024
Q11.2	.269	2.150	-.968	-.295	-.271	-.347	-.063	-.193	.139	.683	.060	-.560	.099	-.016	.212	-.504
Q11.3	.486	-.968	2.721	.435	.015	.166	.346	.109	.273	-1.001	.116	.898	-.165	-.361	.174	-.688
Q11.4	-.628	-.295	.435	2.016	-.790	-.307	.153	-.041	.850	-.485	.489	-.909	-.584	-.110	.088	-.041
Q11.5	.200	-.271	.015	-.790	1.982	.803	-.233	.090	-.937	.065	-.333	.946	.087	.050	-.393	.298
Q11.6	.169	-.347	.166	-.307	.803	1.756	.301	.065	-.262	-.210	-.475	.572	.123	-.324	-.108	-.347
Q11.7	-.006	-.063	.346	.153	-.233	.301	1.582	-.680	.197	-.294	.192	-.292	.061	-.171	.022	-.547
Q11.8	-.345	-.193	.109	-.041	.090	.065	-.680	1.829	-.616	.252	-1.034	1.007	-.074	.046	-.056	.161
Q11.9	-.338	.139	.273	.850	-.937	-.262	.197	-.616	5.580	-3.783	-.247	-.134	-.663	.080	-.478	.706
Q11.1	-1.103	.683	-1.001	-.485	.065	-.210	-.294	.252	-3.783	5.288	-.177	-.799	.653	-.020	.613	-.563
Q11.1	.181	.060	.116	.489	-.333	-.475	.192	-1.034	-.247	-.177	8.417	-7.064	-.436	.818	-.402	.029
Q11.1	.406	-.560	.898	-.909	.946	.572	-.292	1.007	-.134	-.799	-7.064	8.561	-.423	-.296	.200	-.087
Q11.1	.107	.099	-.165	-.584	.087	.123	.061	-.074	-.663	.653	-.436	-.423	1.843	.035	-.164	.200
Q11.1	-.214	-.016	-.361	-.110	.050	-.324	-.171	.046	.080	-.020	.818	-.296	.035	1.801	-.642	.076
Q11.1	.121	.212	.174	.088	-.393	-.108	.022	-.056	-.478	.613	-.402	.200	-.164	-.642	2.765	-2.072
Q11.1	-.024	-.504	-.688	-.041	.298	-.347	-.547	.161	.706	-.563	.029	-.087	.200	.076	-2.072	3.570

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.779
Bartlett's Test of Sphericity	Approx. Chi-Square	764.221
	df	120
	Sig.	.000

Anti-Image Matrices

		Q11.1	Q11.2	Q11.3	Q11.4	Q11.5	Q11.6	Q11.7	Q11.8	Q11.9	Q11.10	Q11.11	Q11.12	Q11.13	Q11.14	Q11.15	Q11.16
Anti-Image Covariance	Q11.1	.401	5.02E-02	7.15E-02	-.125	4.05E-02	3.87E-02	-1.6E-03	-7.6E-02	-2.4E-02	-8.4E-02	8.63E-03	1.90E-02	2.32E-02	-4.6E-02	1.76E-02	-2.7E-03
	Q11.2	5.02E-02	.465	-.166	-6.8E-02	-6.4E-02	-9.2E-02	-1.9E-02	-4.9E-02	1.16E-02	6.01E-02	3.30E-03	-3.0E-02	2.49E-02	-4.1E-03	3.57E-02	-6.6E-02
	Q11.3	7.15E-02	-.166	.367	7.92E-02	2.83E-03	3.47E-02	8.04E-02	2.20E-02	1.80E-02	-7.0E-02	5.04E-03	3.85E-02	-3.3E-02	-7.4E-02	2.32E-02	-7.1E-02
	Q11.4	-.125	-6.8E-02	7.92E-02	.496	-.198	-6.7E-02	4.80E-02	-1.1E-02	7.55E-02	-4.6E-02	2.86E-02	-5.3E-02	-.157	-3.0E-02	1.58E-02	-5.6E-03
	Q11.5	4.05E-02	-6.4E-02	2.83E-03	-.198	.505	.231	-7.4E-02	2.47E-02	-8.5E-02	6.18E-03	-2.0E-02	5.58E-02	2.38E-02	1.39E-02	-7.2E-02	4.22E-02
	Q11.6	3.87E-02	-9.2E-02	3.47E-02	-6.7E-02	.231	.570	.108	2.01E-02	-2.7E-02	-2.3E-02	-3.2E-02	3.81E-02	3.81E-02	-.102	-2.2E-02	-5.5E-02
	Q11.7	-1.6E-03	-1.9E-02	8.04E-02	4.80E-02	-7.4E-02	.108	.632	-.235	2.23E-02	-3.5E-02	1.44E-02	-2.2E-02	2.11E-02	-6.0E-02	5.02E-03	-9.7E-02
	Q11.8	-7.6E-02	-4.9E-02	2.20E-02	-1.1E-02	2.47E-02	2.01E-02	-.235	.547	-6.0E-02	2.61E-02	-6.7E-02	6.44E-02	-2.2E-02	1.38E-02	-1.1E-02	2.46E-02
	Q11.9	-2.4E-02	1.16E-02	1.80E-02	7.55E-02	-8.5E-02	-2.7E-02	2.23E-02	-6.0E-02	.179	-.126	-5.3E-03	-2.8E-03	-6.4E-02	7.98E-03	-3.1E-02	3.55E-02
	Q11.10	-8.4E-02	6.01E-02	-7.0E-02	-4.6E-02	6.18E-03	-2.3E-02	-3.5E-02	2.61E-02	-.126	.189	-4.0E-03	-1.8E-02	6.70E-02	-2.1E-03	4.19E-02	-3.0E-02
	Q11.11	8.63E-03	3.30E-03	5.04E-03	2.86E-02	-2.0E-02	-3.2E-02	1.44E-02	-6.7E-02	-5.3E-03	-4.0E-03	.119	-9.8E-02	-2.8E-02	5.40E-02	-1.7E-02	9.52E-04
	Q11.12	1.90E-02	-3.0E-02	3.85E-02	-5.3E-02	5.58E-02	3.81E-02	-2.2E-02	6.44E-02	-2.8E-03	-1.8E-02	-9.8E-02	.117	-2.7E-02	-1.9E-02	8.46E-03	-2.8E-03
	Q11.13	2.32E-02	2.49E-02	-3.3E-02	-.157	2.38E-02	3.81E-02	2.11E-02	-2.2E-02	-6.4E-02	6.70E-02	-2.8E-02	-2.7E-02	.543	1.07E-02	-3.2E-02	3.04E-02
	Q11.14	-4.6E-02	-4.1E-03	-7.4E-02	-3.0E-02	1.39E-02	-.102	-6.0E-02	1.38E-02	7.98E-03	-2.1E-03	5.40E-02	-1.9E-02	1.07E-02	.555	-.129	1.18E-02
	Q11.15	1.76E-02	3.57E-02	2.32E-02	1.58E-02	-7.2E-02	-2.2E-02	5.02E-03	-1.1E-02	-3.1E-02	4.19E-02	-1.7E-02	8.46E-03	-3.2E-02	-.129	.362	-.210
	Q11.16	-2.7E-03	-6.6E-02	-7.1E-02	-5.6E-03	4.22E-02	-5.5E-02	-9.7E-02	2.46E-02	3.55E-02	-3.0E-02	9.52E-04	-2.6E-03	3.04E-02	1.18E-02	-.210	.280
Anti-Image Correlation	Q11.1	.884[a]	.116	.186	-.280	9.01E-02	8.09E-02	-3.2E-03	-.162	-9.1E-02	-.304	3.95E-02	8.79E-02	4.97E-02	-.101	4.62E-02	-8.2E-03
	Q11.2	.116	.838[a]	-.400	-.142	-.131	-.178	-3.4E-02	-9.8E-02	4.01E-02	.203	1.40E-02	-.130	4.96E-02	-8.1E-03	8.70E-02	-.182
	Q11.3	.186	-.400	.849[a]	.186	6.57E-03	7.58E-02	.167	4.90E-02	7.01E-02	-.264	2.41E-02	.186	-7.4E-02	-.163	6.36E-02	-.221
	Q11.4	-.280	-.142	.186	.708[a]	-.395	-.163	8.58E-02	-2.1E-02	.253	-.149	.119	-.219	-.303	-5.8E-02	3.73E-02	-1.5E-02
	Q11.5	9.01E-02	-.131	6.57E-03	-.395	.647[a]	.430	-.132	4.70E-02	-.262	2.00E-02	-8.2E-02	.230	4.55E-02	2.62E-02	-.168	.112
	Q11.6	8.09E-02	-.178	7.58E-02	-.163	.430	.739[a]	.181	3.60E-02	-8.4E-02	-6.9E-02	-.123	.148	6.85E-02	-.182	-4.9E-02	-.139
	Q11.7	-3.2E-03	-3.4E-02	.167	8.58E-02	-.132	.181	.659[a]	-.400	6.62E-02	-.102	5.26E-02	-7.9E-02	3.60E-02	-.101	1.05E-02	-.230
	Q11.8	-.162	-9.8E-02	4.90E-02	-2.1E-02	4.70E-02	3.60E-02	-.400	.788[a]	-.193	8.10E-02	-.264	.255	-4.0E-02	2.51E-02	-2.5E-02	6.28E-02
	Q11.9	-9.1E-02	4.01E-02	7.01E-02	.253	-.262	-8.4E-02	6.62E-02	-.193	.799[a]	-.696	-3.6E-02	-1.9E-02	-.207	2.53E-02	-.122	.158
	Q11.10	-.304	.203	-.264	-.149	2.00E-02	-6.9E-02	-.102	8.10E-02	-.696	.761[a]	-2.6E-02	-.119	.209	-8.3E-03	.160	-.129
	Q11.11	3.95E-02	1.40E-02	2.41E-02	.119	-8.2E-02	-.123	5.26E-02	-.264	-3.6E-02	-2.6E-02	.758[a]	-.832	-.111	.210	-8.3E-02	5.22E-03
	Q11.12	8.79E-02	-.130	.186	-.219	.230	.148	-7.9E-02	.255	-1.9E-02	-.119	-.832	.724[a]	-.106	-7.6E-02	4.11E-02	-1.6E-02
	Q11.13	4.97E-02	4.96E-02	-7.4E-02	-.303	4.55E-02	6.85E-02	3.60E-02	-4.0E-02	-.207	.209	-.111	-.106	.671[a]	1.94E-02	-7.3E-02	7.81E-02
	Q11.14	-.101	-8.1E-03	-.163	-5.8E-02	2.62E-02	-.182	-.101	2.51E-02	2.53E-02	-6.3E-03	.210	-7.6E-02	1.94E-02	.881[a]	-.288	2.99E-02
	Q11.15	4.62E-02	8.70E-02	6.36E-02	3.73E-02	-.168	-4.9E-02	1.05E-02	-2.5E-02	-.122	.160	-8.3E-02	4.11E-02	-7.3E-02	-.288	.699[a]	-.660
	Q11.16	-8.2E-03	-.182	-.221	-1.5E-02	.112	-.139	-.230	6.28E-02	.158	-.129	5.22E-03	-1.6E-02	7.81E-02	2.99E-02	-.660	.774[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q11.1	.599	.573
Q11.2	.535	.439
Q11.3	.633	.565
Q11.4	.504	.999
Q11.5	.495	.410
Q11.6	.430	.347
Q11.7	.368	.361
Q11.8	.453	.447
Q11.9	.821	.813
Q11.10	.811	.999
Q11.11	.881	.942
Q11.12	.883	.918
Q11.13	.457	.435
Q11.14	.445	.402
Q11.15	.638	.675
Q11.16	.720	.870

Extraction Method: Maximum Likelihood.

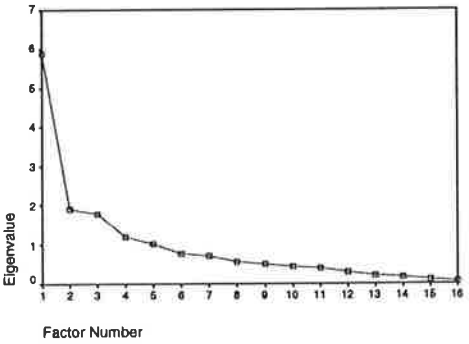
a. One or more communalitiy estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.891	36.817	36.817	4.001	25.006	25.006
2	1.912	11.953	48.770	1.157	7.229	32.235
3	1.790	11.189	59.959	1.988	12.424	44.659
4	1.208	7.547	67.506	1.977	12.354	57.014
5	1.019	6.372	73.878	1.072	6.697	63.711
6	.757	4.733	78.611			
7	.699	4.368	82.979			
8	.559	3.492	86.472			
9	.500	3.125	89.596			
10	.427	2.671	92.267			
11	.397	2.480	94.747			
12	.288	1.803	96.550			
13	.215	1.342	97.892			
14	.175	1.096	98.988			
15	9.96E-02	.622	99.610			
16	6.24E-02	.390	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor				
	1	2	3	4	5
Q11.1	.661	.228	-9.2E-02	-.193	.197
Q11.2	-.366	-.299	-.102	.428	-.148
Q11.3	-.461	5.63E-02	-.427	.352	-.208
Q11.4	.812	-.583	-8.0E-03	3.40E-04	-3.9E-04
Q11.5	.414	-4.0E-02	-.140	-.167	.436
Q11.6	-.177	-6.1E-02	-.113	.413	-.359
Q11.7	.212	.120	3.12E-02	.169	.521
Q11.8	.366	.162	.148	-6.2E-02	.511
Q11.9	.710	.485	.136	-.114	.206
Q11.10	.817	.575	-1.0E-02	2.57E-03	-1.9E-03
Q11.11	.535	5.49E-02	.798	.123	2.57E-02
Q11.12	.554	-8.3E-03	.768	.125	-7.4E-02
Q11.13	.436	-.186	.448	-2.8E-02	9.22E-02
Q11.14	-.254	-7.4E-02	-.436	.377	-1.7E-02
Q11.15	-.234	-.102	-.172	.724	.237
Q11.16	-.321	-8.2E-02	-.257	.832	4.96E-02

Extraction Method: Maximum Likelihood.

a. 5 factors extracted. 9 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
67.990	50	.046

Flexibility

Correlation Matrix

		Q9.20	Q9.21	Q9.22	Q9.23	Q9.25	Q9.26	Q9.27	Q9.28	Q9.29
Correlation	Q9.20	1.000	.324	-.328	.335	.360	.352	.262	.299	-.190
	Q9.21	.324	1.000	-.126	.166	.056	.109	-.019	.279	.096
	Q9.22	-.328	-.126	1.000	-.083	-.224	-.220	-.028	.011	.255
	Q9.23	.335	.166	-.083	1.000	.594	.594	.352	.385	-.249
	Q9.25	.360	.056	-.224	.594	1.000	.920	.243	.284	-.251
	Q9.26	.352	.109	-.220	.594	.920	1.000	.263	.314	-.261
	Q9.27	.262	-.019	-.028	.352	.243	.263	1.000	.486	-.071
	Q9.28	.299	.279	.011	.385	.284	.314	.486	1.000	-.244
	Q9.29	-.190	.096	.255	-.249	-.251	-.261	-.071	-.244	1.000

Inverse of Correlation Matrix

	Q9.20	Q9.21	Q9.22	Q9.23	Q9.25	Q9.26	Q9.27	Q9.28	Q9.29
Q9.20	1.476	-.404	.334	-.106	-.378	.125	-.242	-.080	.108
Q9.21	-.404	1.381	.169	-.210	.541	-.387	.398	-.499	-.363
Q9.22	.334	.169	1.256	-.177	.171	.074	.062	-.272	-.317
Q9.23	-.106	-.210	-.177	1.822	-.608	-.324	-.311	-.132	.208
Q9.25	-.378	.541	.171	-.608	6.966	-6.020	.231	-.035	-.131
Q9.26	.125	-.387	.074	-.324	-6.020	6.889	-.209	-.111	.203
Q9.27	-.242	.398	.062	-.311	.231	-.209	1.510	-.712	-.240
Q9.28	-.080	-.499	-.272	-.132	-.035	-.111	-.712	1.705	.397
Q9.29	.108	-.363	-.317	.208	-.131	.203	-.240	.397	1.288

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.672
Bartlett's Test of Sphericity	Approx. Chi-Square	288.454
	df	36
	Sig.	.000

Anti-Image Matrices

		Q9.20	Q9.21	Q9.22	Q9.23	Q9.25	Q9.26	Q9.27	Q9.28	Q9.29
Anti-image Covariance	Q9.20	.678	-.198	.180	-3.9E-02	-3.7E-02	1.23E-02	-.109	-3.2E-02	5.68E-02
	Q9.21	-.198	.724	9.76E-02	-8.4E-02	5.63E-02	-4.1E-02	.191	-.212	-.204
	Q9.22	.180	9.76E-02	.796	-7.7E-02	1.95E-02	8.59E-03	3.24E-02	-.127	-.196
	Q9.23	-3.9E-02	-8.4E-02	-7.7E-02	.549	-4.8E-02	-2.6E-02	-.113	-4.3E-02	8.85E-02
	Q9.25	-3.7E-02	5.63E-02	1.95E-02	-4.8E-02	.144	-.125	2.20E-02	-3.0E-03	-1.5E-02
	Q9.26	1.23E-02	-4.1E-02	8.59E-03	-2.6E-02	-.125	.145	-2.0E-02	-9.4E-03	2.29E-02
	Q9.27	-.109	.191	3.24E-02	-.113	2.20E-02	-2.0E-02	.662	-.277	-.123
	Q9.28	-3.2E-02	-.212	-.127	-4.3E-02	-3.0E-03	-9.4E-03	-.277	.587	.181
	Q9.29	5.68E-02	-.204	-.196	8.85E-02	-1.5E-02	2.29E-02	-.123	.181	.777
Anti-image Correlation	Q9.20	.799[a]	-.283	.245	-6.5E-02	-.118	3.93E-02	-.162	-5.0E-02	7.83E-02
	Q9.21	-.283	.376[a]	.128	-.133	.174	-.126	.276	-.325	-.272
	Q9.22	.245	.128	.604[a]	-.117	5.78E-02	2.53E-02	4.47E-02	-.186	-.249
	Q9.23	-6.5E-02	-.133	-.117	.900[a]	-.171	-9.1E-02	-.188	-7.5E-02	.136
	Q9.25	-.118	.174	5.78E-02	-.171	.654[a]	-.869	7.13E-02	-1.0E-02	-4.4E-02
	Q9.26	3.93E-02	-.126	2.53E-02	-9.1E-02	-.869	.672[a]	-6.5E-02	-3.2E-02	6.83E-02
	Q9.27	-.162	.276	4.47E-02	-.188	7.13E-02	-6.5E-02	.600[a]	-.444	-.172
	Q9.28	-5.0E-02	-.325	-.186	-7.5E-02	-1.0E-02	-3.2E-02	-.444	.654[a]	.268
	Q9.29	7.83E-02	-.272	-.249	.136	-4.4E-02	6.83E-02	-.172	.268	.578[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q9.20	.322	.999
Q9.21	.276	.149
Q9.22	.204	.142
Q9.23	.451	.430
Q9.25	.856	.932
Q9.26	.855	.910
Q9.27	.338	.259
Q9.28	.413	.999
Q9.29	.223	.105

Extraction Method: Maximum Likelihood.

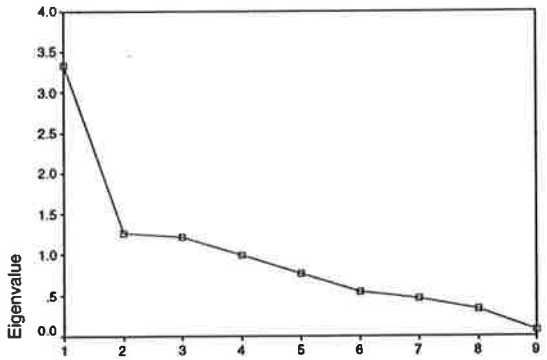
a. One or more communalitiy estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.336	37.064	37.064	2.310	25.667	25.667
2	1.264	14.047	51.110	.829	9.208	34.875
3	1.223	13.591	64.702	1.786	19.840	54.715
4	.999	11.105	75.806			
5	.770	8.559	84.365			
6	.540	6.004	90.369			
7	.462	5.139	95.507			
8	.328	3.639	99.147			
9	7.68E-02	.853	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor		
	1	2	3
Q9.20	.806	-.591	-7.0E-03
Q9.21	.373	-3.8E-02	-9.0E-02
Q9.22	-.198	.287	-.144
Q9.23	.450	4.19E-02	.475
Q9.25	.406	-6.6E-02	.873
Q9.26	.420	-3.3E-02	.855
Q9.27	.465	.190	8.45E-02
Q9.28	.805	.592	-5.0E-03
Q9.29	-.270	-4.6E-02	-.173

Extraction Method: Maximum Likelihood.

a. 3 factors extracted. 17 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
19.794	12	.071

Conflict Harmonisation

Correlation Matrix

	Q12.1	Q12.2	Q12.3	Q12.4	Q12.5	Q12.6	Q12.7	Q12.8	Q12.9	Q12.10	Q12.11	Q12.12	Q12.13	Q12.14	Q12.15	Q12.16	Q12.17
Correlat Q12.1	1.000	.765	-.410	.341	.389	.380	.365	.106	.012	-.226	-.377	-.299	-.184	-.501	-.473	-.365	-.392
Q12.2	.765	1.000	-.280	.280	.403	.377	.338	.116	.033	-.221	-.286	-.205	-.079	-.332	-.357	-.213	-.314
Q12.3	-.410	-.280	1.000	-.360	-.378	-.249	-.227	-.094	-.019	.264	.438	.177	.158	.522	.648	.274	.420
Q12.4	.341	.280	-.360	1.000	.748	.513	.528	-.023	-.044	-.506	-.441	-.287	-.290	-.338	-.422	-.193	-.588
Q12.5	.389	.403	-.378	.748	1.000	.618	.646	-.040	-.023	-.507	-.379	-.255	-.227	-.261	-.376	-.178	-.542
Q12.6	.380	.377	-.249	.513	.618	1.000	.842	.042	-.061	-.543	-.235	-.004	-.008	-.125	-.179	-.088	-.310
Q12.7	.365	.338	-.227	.528	.646	.842	1.000	-.012	-.077	-.483	-.217	-.030	-.015	-.159	-.231	-.094	-.309
Q12.8	.106	.116	-.094	-.023	-.040	.042	-.012	1.000	.692	.155	-.183	-.023	.088	.037	.009	-.058	.150
Q12.9	.012	.033	-.019	-.044	-.023	-.061	-.077	.692	1.000	.270	.037	-.048	.030	.046	.006	.013	.183
Q12.1	-.226	-.221	.264	-.506	-.507	-.543	-.483	.155	.270	1.000	.283	.193	.215	.214	.247	.179	.479
Q12.1	-.377	-.286	.438	-.441	-.379	-.235	-.217	-.183	.037	.283	1.000	.397	.312	.503	.638	.366	.492
Q12.1	-.299	-.205	.177	-.287	-.255	-.004	-.030	-.023	-.048	.193	.397	1.000	.811	.388	.381	.386	.535
Q12.1	-.184	-.079	.158	-.290	-.227	-.008	-.015	.088	.030	.215	.312	.811	1.000	.362	.392	.361	.554
Q12.1	-.501	-.332	.522	-.338	-.261	-.125	-.159	.037	.046	.214	.503	.388	.362	1.000	.756	.450	.507
Q12.1	-.473	-.357	.648	-.422	-.376	-.179	-.231	.009	.006	.247	.638	.381	.392	.756	1.000	.605	.673
Q12.1	-.365	-.213	.274	-.193	-.178	-.088	-.094	-.058	.013	.179	.366	.386	.361	.450	.605	1.000	.551
Q12.1	-.392	-.314	.420	-.588	-.542	-.310	-.309	.150	.183	.479	.492	.535	.554	.507	.673	.551	1.000

Inverse of Correlation Matrix

	Q12.1	Q12.2	Q12.3	Q12.4	Q12.5	Q12.6	Q12.7	Q12.8	Q12.9	Q12.10	Q12.11	Q12.12	Q12.13	Q12.14	Q12.15	Q12.16	Q12.17
Q12.1	3.281	-2.052	.477	-.206	.244	-.206	-.344	-.002	.061	-.261	.098	.287	-.060	.720	-.478	.528	-.105
Q12.2	-2.052	2.759	-.404	.366	-.604	-.357	.364	-.267	.113	.099	-.203	.282	-.413	-.214	.710	-.407	.124
Q12.3	.477	-.404	2.107	-.098	.477	.310	-.464	.434	-.227	-.210	.214	-.026	.230	-.103	-1.613	.455	.076
Q12.4	-.206	.366	-.098	2.831	-1.448	-.068	-.158	-.074	-.120	.267	.319	-.148	.113	.206	.005	-.358	.739
Q12.5	.244	-.604	.477	-1.448	3.391	-.189	-.940	.514	-.502	.088	.271	.160	-.044	-.284	-.363	-.012	.518
Q12.6	-.206	-.357	.310	-.068	-.189	4.267	-2.915	-.156	-.120	.684	.322	-.673	.304	-.049	-.892	.142	.256
Q12.7	-.344	.364	-.464	-.158	-.940	-2.915	4.065	-.101	.261	.031	-.416	.264	-.350	-.083	1.000	-.179	-.399
Q12.8	-.002	-.267	.434	-.074	.514	-.156	-.101	2.572	-1.778	-.023	.991	-.053	-.125	-.113	-.951	.431	-.089
Q12.9	.061	.113	-.227	-.120	-.502	-.120	.261	-1.778	2.446	-.347	-.807	.401	-.025	-.078	.973	-.210	-.465
Q12.1	-.261	.099	-.210	.267	.088	.684	.031	-.023	-.347	1.891	-.095	-.029	-.075	-.132	.427	-.092	-.461
Q12.1	.098	-.203	.214	.319	.271	.322	-.416	.991	-.807	-.095	2.361	-.707	.333	.015	-1.633	.270	.210
Q12.1	.287	.282	-.026	-.148	.160	-.673	.264	-.053	.401	-.029	-.707	3.675	-2.578	-.339	1.052	-.280	-.541
Q12.1	-.060	-.413	.230	.113	-.044	.304	-.350	-.125	-.025	-.075	.333	-2.578	3.426	-.008	-.613	.124	-.494
Q12.1	.720	-.214	-.103	.206	-.284	-.049	-.083	-.113	-.078	-.132	.015	-.339	-.008	2.690	-1.857	.132	.272
Q12.1	-.478	.710	-1.613	.005	-.363	-.892	1.000	-.951	.973	.427	-1.633	1.052	-.613	-1.857	5.988	-1.342	-1.460
Q12.1	.528	-.407	.455	-.358	-.012	.142	-.179	.431	-.210	-.092	.270	-.280	.124	.132	-1.342	2.028	-.656
Q12.1	-.105	.124	.076	.739	.518	.256	-.399	-.089	-.465	-.461	.210	-.541	-.494	.272	-1.460	-.656	3.623

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.780
Bartlett's Test of Sphericity	Approx. Chi-Square	857.131
	df	136
	Sig.	.000

Anti-Image Matrices

		Q12.1	Q12.2	Q12.3	Q12.4	Q12.5	Q12.6	Q12.7	Q12.8	Q12.9	Q12.10	Q12.11	Q12.12	Q12.13	Q12.14	Q12.15	Q12.16	Q12.17
Anti-Image Covaria	Q12.1	.306	-.227	1.90E-02	-2.2E-02	2.19E-02	-1.5E-02	-2.6E-02	-2.3E-04	7.59E-03	-4.2E-02	.26E-02	1.38E-02	-5.3E-03	1.16E-02	-2.4E-02	7.93E-02	-8.9E-03
	Q12.2	-.227	.362	-7.0E-02	1.68E-02	-6.5E-02	-3.0E-02	1.24E-02	-3.8E-02	1.68E-02	.90E-02	-3.1E-02	1.78E-02	-4.4E-02	-2.9E-02	1.30E-02	7.3E-02	.24E-02
	Q12.3	1.90E-02	-7.0E-02	.475	-1.6E-02	1.68E-02	1.45E-02	-5.4E-02	1.00E-02	-4.4E-02	-5.3E-02	1.30E-02	-3.4E-03	1.18E-02	-1.8E-02	-.128	.106	1.95E-03
	Q12.4	-2.2E-02	1.68E-02	-1.6E-02	.353	-.151	-5.6E-03	-1.4E-02	-1.0E-02	-1.7E-02	1.98E-02	1.77E-02	-1.4E-02	.17E-02	1.71E-02	1.03E-04	-6.2E-02	1.20E-02
	Q12.5	2.19E-02	-6.5E-02	1.68E-02	-.151	.295	-1.3E-02	-6.6E-02	1.90E-02	-6.1E-02	.37E-02	1.39E-02	.28E-02	-3.8E-03	-3.1E-02	-1.8E-02	-1.7E-03	1.21E-02
	Q12.6	-1.5E-02	3.0E-02	1.45E-02	-5.6E-03	-1.3E-02	.234	-.168	-1.4E-02	-1.2E-02	1.48E-02	1.19E-02	-4.3E-02	2.08E-02	-4.2E-03	-9.5E-02	.64E-02	.65E-02
	Q12.7	-2.6E-02	1.24E-02	-5.4E-02	-1.4E-02	-6.8E-02	-.168	.246	-9.7E-03	2.62E-02	1.02E-03	-4.3E-02	.77E-02	-2.5E-02	-7.6E-03	1.11E-02	-2.2E-02	-2.7E-02
	Q12.8	2.3E-04	-3.8E-02	1.00E-02	-1.0E-02	1.90E-02	-1.4E-02	-9.7E-03	.389	-.283	-4.7E-03	.163	-5.7E-03	-1.4E-02	-1.6E-02	-6.2E-02	1.26E-02	-9.6E-03
	Q12.9	1.59E-03	1.68E-02	-4.4E-02	-1.7E-02	-6.1E-02	-1.2E-02	2.62E-02	-.283	.409	-7.5E-02	-.140	1.46E-02	-3.0E-03	-1.2E-02	1.64E-02	-4.2E-02	-5.2E-02
	Q12.10	-4.2E-02	1.90E-02	-5.3E-02	1.98E-02	.37E-02	1.48E-02	1.02E-03	-4.7E-03	-7.5E-02	.529	-2.1E-02	-4.2E-03	-1.2E-02	-2.6E-02	1.77E-02	-2.4E-02	-6.7E-02
	Q12.11	1.26E-02	-3.1E-02	1.30E-02	1.77E-02	1.39E-02	1.19E-02	-4.3E-02	.163	-.140	-2.1E-02	.423	-8.1E-02	1.11E-02	1.43E-03	-.115	1.64E-02	1.46E-02
	Q12.12	1.38E-02	1.78E-02	-3.4E-03	-1.4E-02	.28E-02	-4.3E-02	.77E-02	-5.7E-03	1.46E-02	-4.2E-03	-8.1E-02	.272	-.205	-3.4E-02	1.78E-02	-3.8E-02	-4.1E-02
	Q12.13	-5.3E-03	-4.4E-02	1.18E-02	.17E-02	-3.8E-03	2.08E-02	-2.5E-02	-1.4E-02	-3.0E-03	-1.2E-02	1.11E-02	-.205	.292	-8.2E-04	-3.0E-02	1.79E-02	-4.0E-02
	Q12.14	1.16E-02	-2.9E-02	-1.8E-02	1.71E-02	-3.1E-02	-4.2E-03	-7.6E-03	-1.6E-02	-1.2E-02	-2.6E-02	1.43E-03	-3.4E-02	-8.2E-04	.372	-.115	1.42E-02	1.79E-02
	Q12.15	-2.4E-02	1.30E-02	-.128	1.03E-04	-1.8E-02	-3.5E-02	1.11E-02	-6.2E-02	1.64E-02	1.77E-02	-.115	1.78E-02	-3.0E-02	-.115	.167	-.110	-6.7E-02
	Q12.16	1.93E-02	-7.3E-02	.106	-6.2E-02	-1.7E-03	1.64E-02	-2.2E-02	1.26E-02	-4.2E-02	-2.4E-02	1.64E-02	-3.8E-02	1.79E-02	1.42E-02	-.110	.493	-8.9E-02
	Q12.17	-8.9E-03	1.24E-02	1.95E-03	1.20E-02	1.21E-02	.65E-02	-2.7E-02	-9.6E-03	5.2E-02	-6.7E-02	1.46E-02	-4.1E-02	-4.0E-02	1.79E-02	-6.7E-02	-8.9E-02	.276
Anti-Image Correla	Q12.1	.785[a]	-.682	.182	-6.7E-02	1.30E-02	-5.5E-02	-9.4E-02	-6.8E-04	1.15E-02	-.105	1.52E-02	1.26E-02	-1.6E-02	.242	-.108	.205	-3.1E-02
	Q12.2	-.682	.717[a]	-.168	.131	-.198	-.104	.109	-.100	1.37E-02	1.33E-02	-7.9E-02	1.85E-02	-.134	-7.8E-02	.175	-.172	1.94E-02
	Q12.3	.182	-.168	.805[a]	-4.0E-02	.178	.103	-.159	.186	-.100	-.105	1.59E-02	-9.5E-03	1.55E-02	-4.3E-02	-.454	.220	1.75E-02
	Q12.4	-6.7E-02	.131	-4.0E-02	.883[a]	-.467	-2.0E-02	-4.7E-02	-2.7E-02	-4.6E-02	.115	.123	-4.6E-02	1.64E-02	1.47E-02	.25E-03	-.150	.231
	Q12.5	1.30E-02	-.198	.178	-.467	.859[a]	-5.0E-02	-.253	.174	-.174	1.47E-02	1.59E-02	1.53E-02	-1.3E-02	-9.4E-02	-8.1E-02	-4.5E-03	.148
	Q12.6	-5.5E-02	-.104	.103	-2.0E-02	-5.0E-02	.769[a]	-.700	-4.7E-02	-3.7E-02	.241	.101	-.170	1.94E-02	-1.4E-02	-.177	1.82E-02	1.50E-02
	Q12.7	9.4E-02	.109	-.159	-4.7E-02	-.253	-.700	.757[a]	-3.1E-02	1.28E-02	.11E-02	-.134	1.83E-02	-9.4E-02	-2.5E-02	.203	-6.2E-02	-.104
	Q12.8	-6.8E-04	-.100	.186	-2.7E-02	.174	-4.7E-02	-3.1E-02	.420[a]	-.709	-1.0E-02	.402	-1.7E-02	-4.2E-02	-4.3E-02	-.242	.189	-2.9E-02
	Q12.9	-.15E-02	1.37E-02	-.100	-4.6E-02	-.174	-3.7E-02	1.28E-02	-.709	.427[a]	-.161	-.336	.134	-8.7E-03	-3.0E-02	.254	-9.4E-02	-.156
	Q12.10	-.105	1.33E-02	-.105	.115	1.47E-02	.241	.11E-02	-1.0E-02	-.161	.912[a]	-4.5E-02	-1.1E-02	-2.9E-02	-5.9E-02	.127	-4.7E-02	-.176
	Q12.11	1.52E-02	-7.9E-02	1.59E-02	.123	1.59E-02	.101	-.134	.402	-.336	-4.5E-02	.783[a]	-.240	.117	1.12E-03	-.434	.123	1.20E-02
	Q12.12	-1.26E-02	1.85E-02	-9.5E-03	-4.6E-02	1.53E-02	-.170	1.83E-02	-1.7E-02	.134	-1.1E-02	-.240	.716[a]	-.726	-.108	.224	-.103	-.148
	Q12.13	1.8E-02	-.134	1.55E-02	1.64E-02	-1.3E-02	1.94E-02	-9.4E-02	-4.2E-02	-8.7E-03	-2.9E-02	.117	-.726	.734[a]	-2.5E-03	-.135	1.72E-02	-.140
	Q12.14	.242	-7.8E-02	-4.3E-02	1.47E-02	-9.4E-02	-1.4E-02	-2.5E-02	-4.3E-02	-3.0E-02	-5.9E-02	1.12E-03	-.108	-2.5E-03	.884[a]	-.463	1.66E-02	1.70E-02
	Q12.15	-.108	.175	-.454	.25E-03	-8.1E-02	-.177	.203	-.242	.254	.127	-.434	.224	-.135	-.463	.738[a]	-.385	-.313
	Q12.16	.205	-.172	.220	-.150	-4.5E-03	1.82E-02	-6.2E-02	.189	-9.4E-02	-4.7E-02	.123	-.103	1.72E-02	1.66E-02	-.385	.793[a]	-.242
	Q12.17	-3.1E-02	1.94E-02	1.75E-02	.231	.148	1.50E-02	-.104	-2.9E-02	-.156	-.176	1.20E-02	-.148	-.140	1.70E-02	-.313	-.242	.904[a]

a. Measures of Sampling Adequacy(MSA)

Communalities[a]

	Initial	Extraction
Q12.1	.695	.999
Q12.2	.638	.598
Q12.3	.525	.462
Q12.4	.647	.550
Q12.5	.705	.638
Q12.6	.766	.823
Q12.7	.754	.782
Q12.8	.611	.999
Q12.9	.591	.491
Q12.10	.471	.443
Q12.11	.577	.489
Q12.12	.728	.844
Q12.13	.708	.788
Q12.14	.628	.613
Q12.15	.833	.999
Q12.16	.507	.412
Q12.17	.724	.682

Extraction Method: Maximum Likelihood.

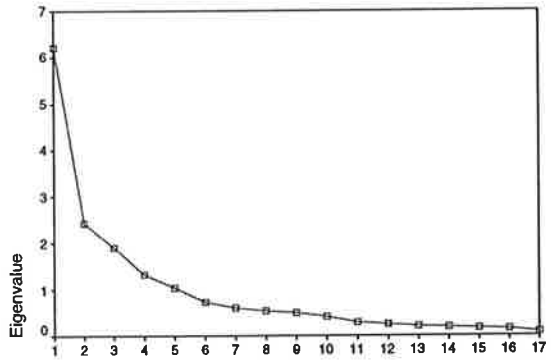
a. One or more communalitiy estimates greater than 1.0 were encountered during iterations. The resulting solution should be interpreted with caution.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.217	36.570	36.570	4.796	28.214	28.214
2	2.414	14.201	50.770	1.688	9.930	38.144
3	1.909	11.230	62.000	1.079	6.347	44.490
4	1.322	7.776	69.776	2.407	14.159	58.650
5	1.042	6.127	75.903	1.640	9.645	68.294
6	.716	4.213	80.116			
7	.594	3.494	83.610			
8	.539	3.169	86.780			
9	.504	2.963	89.743			
10	.407	2.392	92.135			
11	.285	1.677	93.812			
12	.251	1.478	95.291			
13	.206	1.214	96.504			
14	.184	1.082	97.586			
15	.165	.968	98.554			
16	.154	.904	99.458			
17	9.22E-02	.542	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Factor Matrix[a]

	Factor				
	1	2	3	4	5
Q12.1	-.862	1.92E-02	.506	-4.0E-03	1.31E-03
Q12.2	-.661	5.03E-02	.384	9.96E-02	2.91E-02
Q12.3	.617	4.12E-02	.240	-.117	-8.7E-02
Q12.4	-.438	-.108	-6.4E-02	.530	-.249
Q12.5	-.438	-.114	3.30E-02	.623	-.210
Q12.6	-.330	8.27E-03	.196	.822	-8.0E-03
Q12.7	-.345	-5.6E-02	.144	.800	2.20E-03
Q12.8	-.171	.978	-.119	6.14E-04	-5.2E-04
Q12.9	-8.2E-02	.676	-.143	-8.0E-02	-1.6E-02
Q12.10	.257	.202	-2.3E-02	-.538	.216
Q12.11	.604	-4.7E-02	.285	-.116	.164
Q12.12	.395	5.54E-02	7.95E-02	.142	.812
Q12.13	.322	.169	.178	.105	.783
Q12.14	.717	.190	.225	8.52E-02	6.60E-02
Q12.15	.843	.216	.492	1.18E-03	-4.6E-03
Q12.16	.563	6.85E-02	.236	8.72E-02	.164
Q12.17	.596	.285	.227	-.212	.386

Extraction Method: Maximum Likelihood.

a. 5 factors extracted. 16 iterations required.

Goodness-of-fit Test

Chi-Square	df	Sig.
77.952	61	.071

Relationship Performance

Correlation Matrix

		Q15.1	Q15.2	Q15.3	Q15.4	Q15.5	Q15.6	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6
Correlation	Q15.1	1.000	.870	.793	.707	.701	.663	.756	.673	.723	.642	.591	.581
	Q15.2	.870	1.000	.793	.685	.719	.621	.704	.772	.692	.617	.614	.577
	Q15.3	.793	.793	1.000	.868	.829	.738	.579	.590	.704	.698	.659	.619
	Q15.4	.707	.685	.868	1.000	.773	.861	.570	.533	.653	.759	.663	.720
	Q15.5	.701	.719	.829	.773	1.000	.861	.528	.586	.622	.620	.750	.689
	Q15.6	.663	.621	.738	.861	.861	1.000	.520	.519	.620	.715	.729	.799
	Q16.1	.756	.704	.579	.570	.528	.520	1.000	.900	.893	.803	.756	.725
	Q16.2	.673	.772	.590	.533	.586	.519	.900	1.000	.886	.783	.794	.729
	Q16.3	.723	.692	.704	.653	.622	.620	.893	.886	1.000	.917	.865	.829
	Q16.4	.642	.617	.698	.759	.620	.715	.803	.783	.917	1.000	.875	.913
	Q16.5	.591	.614	.659	.663	.750	.729	.756	.794	.865	.875	1.000	.939
	Q16.6	.581	.577	.619	.720	.689	.799	.725	.729	.829	.913	.939	1.000

Inverse of Correlation Matrix

	Q15.1	Q15.2	Q15.3	Q15.4	Q15.5	Q15.6	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6
Q15.1	10.201	-6.516	-1.931	1.974	-.628	-2.662	-6.828	6.402	-3.530	1.159	2.470	.002
Q15.2	-6.516	10.419	-3.112	-.972	.283	1.144	3.369	-8.940	4.017	1.414	.948	-2.148
Q15.3	-1.931	-3.112	13.689	-7.656	-6.238	4.883	3.749	2.797	-6.397	-2.151	-.823	3.638
Q15.4	1.974	-.972	-7.656	11.435	2.353	-6.489	-3.544	1.390	4.541	-4.539	1.202	.293
Q15.5	-.628	.283	-6.238	2.353	12.561	-8.622	.301	-2.385	3.246	3.031	-8.790	4.913
Q15.6	-2.662	1.144	4.883	-6.489	-8.622	13.576	2.596	.125	-1.811	.746	5.732	-8.902
Q16.1	-6.828	3.369	3.749	-3.544	.301	2.596	12.286	-7.451	-2.700	-.305	-1.044	-.004
Q16.2	6.402	-8.940	2.797	1.390	-2.385	.125	-7.451	15.227	-6.509	-.714	-.950	1.492
Q16.3	-3.530	4.017	-6.397	4.541	3.246	-1.811	-2.700	-6.509	20.117	-9.352	-5.192	3.068
Q16.4	1.159	1.414	-2.151	-4.539	3.031	.746	-.305	-.714	-9.352	18.759	2.080	-10.163
Q16.5	2.470	.948	-.823	1.202	-8.790	5.732	-1.044	-.950	-5.192	2.080	21.163	-16.866
Q16.6	.002	-2.148	3.638	.293	4.913	-8.902	-.004	1.492	3.068	-10.163	-16.866	24.985

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.842
Bartlett's Test of Sphericity	Approx. Chi-Square	1625.435
	df	66
	Sig.	.000

Anti-Image Matrices

		Q15.1	Q15.2	Q15.3	Q15.4	Q15.5	Q15.6	Q16.1	Q16.2	Q16.3	Q16.4	Q16.5	Q16.6
Anti-Image Covariance	Q15.1	9.80E-02	-6.1E-02	-1.4E-02	1.69E-02	-4.9E-03	-1.9E-02	-5.4E-02	4.12E-02	-1.7E-02	6.06E-03	1.14E-02	7.87E-06
	Q15.2	-6.1E-02	9.60E-02	-2.2E-02	-8.2E-03	2.16E-03	8.09E-03	2.63E-02	-5.6E-02	1.92E-02	7.24E-03	4.30E-03	-8.3E-03
	Q15.3	-1.4E-02	-2.2E-02	7.31E-02	-4.9E-02	-3.6E-02	2.63E-02	2.23E-02	1.34E-02	-2.3E-02	-8.4E-03	-2.8E-03	1.06E-02
	Q15.4	1.69E-02	-8.2E-03	-4.9E-02	8.75E-02	1.64E-02	-4.2E-02	-2.5E-02	7.98E-03	1.97E-02	-2.1E-02	4.97E-03	1.03E-03
	Q15.5	-4.9E-03	2.16E-03	-3.6E-02	1.64E-02	7.96E-02	-5.1E-02	1.95E-03	-1.2E-02	1.28E-02	1.29E-02	-3.3E-02	1.57E-02
	Q15.6	-1.9E-02	8.09E-03	2.63E-02	-4.2E-02	-5.1E-02	7.37E-02	1.56E-02	6.08E-04	-6.6E-03	2.93E-03	2.00E-02	-2.6E-02
	Q16.1	-5.4E-02	2.63E-02	2.23E-02	-2.5E-02	1.95E-03	1.56E-02	8.14E-02	-4.0E-02	-1.1E-02	-1.3E-03	-4.0E-03	-1.3E-05
	Q16.2	4.12E-02	-5.6E-02	1.34E-02	7.98E-03	-1.2E-02	6.06E-04	-4.0E-02	6.57E-02	-2.1E-02	-2.5E-03	-2.9E-03	3.92E-03
	Q16.3	-1.7E-02	1.92E-02	-2.3E-02	1.97E-02	1.28E-02	-6.6E-03	-1.1E-02	-2.1E-02	4.97E-02	-2.5E-02	-1.2E-02	6.10E-03
	Q16.4	6.06E-03	7.24E-03	-8.4E-03	-2.1E-02	1.29E-02	2.93E-03	-1.3E-03	-2.5E-03	-2.5E-02	5.33E-02	5.24E-03	-2.2E-02
	Q16.5	1.14E-02	4.30E-03	-2.8E-03	4.97E-03	-3.3E-02	2.00E-02	-4.0E-03	-2.9E-03	-1.2E-02	5.24E-03	4.73E-02	-3.2E-02
	Q16.6	7.87E-06	-8.3E-03	1.06E-02	1.03E-03	1.57E-02	-2.8E-02	-1.3E-05	3.92E-03	6.10E-03	-2.2E-02	-3.2E-02	4.00E-02
Anti-Image Correlation	Q15.1	.814[a]	-.632	-.163	.183	-5.5E-02	-.226	-.610	.514	-.246	8.38E-02	.168	1.26E-04
	Q15.2	-.632	.820[a]	-.261	-8.9E-02	2.47E-02	9.62E-02	.298	-.710	.277	.101	6.39E-02	-.133
	Q15.3	-.163	-.261	.832[a]	-.612	-.476	.358	.289	.194	-.385	-.134	-4.8E-02	.197
	Q15.4	.183	-8.9E-02	-.612	.847[a]	.196	-.521	-.299	.105	.299	-.310	7.73E-02	1.73E-02
	Q15.5	-5.5E-02	2.47E-02	-.476	.196	.822[a]	-.660	2.42E-02	-.172	.204	.197	-.539	.277
	Q15.6	-.226	9.62E-02	.358	-.521	-.660	.808[a]	.201	8.72E-03	-.110	4.67E-02	.338	-.483
	Q16.1	-.610	.298	.289	-.299	2.42E-02	.201	.848[a]	-.545	-.172	-2.0E-02	-6.5E-02	-2.2E-04
	Q16.2	.514	-.710	.194	.105	-.172	8.72E-03	-.545	.814[a]	-.372	-4.2E-02	-5.3E-02	7.65E-02
	Q16.3	-.246	.277	-.385	.299	.204	-.110	-.172	-.372	.878[a]	-.481	-.252	.137
	Q16.4	8.38E-02	.101	-.134	-.310	.197	4.67E-02	-2.0E-02	-4.2E-02	-.481	.910[a]	.104	-.469
	Q16.5	.168	6.39E-02	-4.8E-02	7.73E-02	-.539	.338	-6.5E-02	-5.3E-02	-.252	.104	.855[a]	-.733
	Q16.6	1.26E-04	-.133	.197	1.73E-02	.277	-.483	-2.2E-04	7.65E-02	.137	-.469	-.733	.842[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
Q15.1	.902	.635
Q15.2	.904	.612
Q15.3	.927	.755
Q15.4	.913	.838
Q15.5	.920	.808
Q15.6	.926	.886
Q16.1	.919	.854
Q16.2	.934	.844
Q16.3	.950	.955
Q16.4	.947	.874
Q16.5	.953	.825
Q16.6	.960	.807

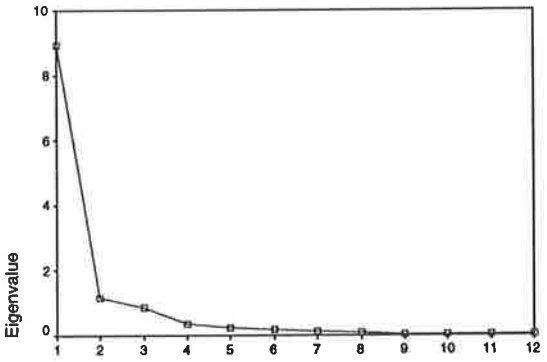
Extraction Method: Maximum Likelihood.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.921	74.341	74.341	8.639	71.990	71.990
2	1.159	9.658	83.999	1.055	8.789	80.779
3	.856	7.129	91.129			
4	.343	2.855	93.983			
5	.234	1.950	95.933			
6	.165	1.374	97.307			
7	.131	1.092	98.399			
8	7.75E-02	.646	99.044			
9	3.77E-02	.314	99.358			
10	3.06E-02	.255	99.614			
11	2.75E-02	.229	99.842			
12	1.89E-02	.158	100.000			

Extraction Method: Maximum Likelihood.

Scree Plot



Goodness-of-fit Test

Chi-Square	df	Sig.
459.396	43	.000

Appendix F – Measure Skewness and Kurtosis

Past Experience

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q5.2	83	-.227	.264	-.852	.523
Q5.4	83	.974	.264	.529	.523
Q5.6	83	.815	.264	-.251	.523
Q5.7	83	1.142	.264	.860	.523
Q5.8	83	.231	.264	-.829	.523
Q5.9	83	.157	.264	-1.161	.523
Valid N (listwise)	83				

Future Orientation

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q6.1	83	.140	.264	-1.174	.523
Q6.2	83	.142	.264	-.974	.523
Q6.3	83	1.381	.264	1.635	.523
Q6.4	83	1.572	.264	2.553	.523
Q6.5	83	.499	.264	-.450	.523
Q6.6	83	1.889	.264	4.211	.523
Q6.7	83	.985	.264	.190	.523
Q6.8	83	.554	.264	-.387	.523
Q6.9	83	.238	.264	-.904	.523
Valid N (listwise)	83				

Economic Goal

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q8.1	83	1.679	.264	3.183	.523
Q8.2	83	1.759	.264	3.387	.523
Q8.3	83	1.415	.264	2.217	.523
Q8.4	83	.902	.264	.461	.523
Q8.5	83	1.221	.264	1.262	.523
Q8.6	83	.321	.264	-1.151	.523
Q8.7	83	-.090	.264	-1.220	.523
Valid N (listwise)	83				

Trust

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q9.36	83	-.569	.264	-.943	.523
Q9.37	83	.672	.264	-.284	.523
Q9.38	83	.460	.264	-.785	.523
Q9.39	83	.260	.264	-.971	.523
Q9.40	83	.521	.264	-.336	.523
Q9.41	83	.487	.264	-.610	.523
Q9.42	83	.565	.264	-.687	.523
Q9.43	83	.322	.264	-.563	.523
Q9.44	83	.880	.264	-.081	.523
Q9.45	83	.069	.264	-1.161	.523
Q9.46	83	.877	.264	.660	.523
Q9.47	83	.612	.264	-.186	.523
Q9.48	83	-.224	.264	-.962	.523
Q9.49	83	.576	.264	-.138	.523
Q9.50	83	1.032	.264	.861	.523
Q9.51	83	.791	.264	.508	.523
Q9.52	83	.603	.264	-.061	.523
Q9.53	83	.409	.264	-.237	.523
Q9.54	83	.822	.264	.634	.523
Q9.55	83	.771	.264	.130	.523
Valid N (listwise)	83				

Commitment

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q9.2	83	1.109	.264	.898	.523
Q9.3	83	-1.023	.264	.465	.523
Q9.4	83	.026	.264	-1.188	.523
Q9.5	83	1.049	.264	.779	.523
Q9.6	83	.738	.264	-.031	.523
Q9.7	83	.300	.264	-.982	.523
Q9.10	83	.593	.264	-.353	.523
Q9.11	83	.213	.264	-.295	.523
Q9.14	83	.399	.264	-.440	.523
Valid N (listwise)	83				

Role Integrity

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q9.1	83	.083	.264	-1.196	.523
Q9.8	83	.184	.264	-1.305	.523
Q9.9	83	-.242	.264	-1.183	.523
Q9.12	83	.684	.264	-.110	.523
Q9.13	83	-.647	.264	-.424	.523
Q9.15	83	-.028	.264	-1.023	.523
Q9.16	83	.095	.264	-1.056	.523
Q9.17	83	-.541	.264	-.646	.523
Q9.18	83	-.552	.264	-.613	.523
Q9.19	83	-.663	.264	-.748	.523
Q9.24	83	-.609	.264	-.598	.523
Valid N (listwise)	83				

Communication

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q11.1	83	1.829	.264	5.937	.523
Q11.2	83	-.825	.264	-.246	.523
Q11.3	83	-.220	.264	-1.203	.523
Q11.4	83	.889	.264	.356	.523
Q11.5	83	1.107	.264	1.278	.523
Q11.6	83	-.909	.264	.277	.523
Q11.7	83	.712	.264	-.223	.523
Q11.8	83	1.061	.264	1.073	.523
Q11.9	83	1.416	.264	2.978	.523
Q11.10	83	1.804	.264	3.916	.523
Q11.11	83	.978	.264	.267	.523
Q11.12	83	.973	.264	.137	.523
Q11.13	83	.447	.264	-.045	.523
Q11.14	83	-.390	.264	-.852	.523
Q11.15	83	-.735	.264	-.302	.523
Q11.16	83	-.684	.264	-.659	.523
Valid N (listwise)	83				

Flexibility

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q9.20	83	1.189	.264	1.352	.523
Q9.21	83	.216	.264	-1.047	.523
Q9.22	83	-.756	.264	-.226	.523
Q9.23	83	.771	.264	.213	.523
Q9.25	83	.609	.264	.444	.523
Q9.26	83	.801	.264	.783	.523
Q9.27	83	.782	.264	.042	.523
Q9.28	83	.897	.264	.962	.523
Q9.29	83	-.449	.264	-.388	.523
Valid N (listwise)	83				

Conflict Harmonisation

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q12.1	83	-.876	.264	-.269	.523
Q12.2	83	-.747	.264	-.492	.523
Q12.3	83	1.372	.264	1.959	.523
Q12.4	83	-.772	.264	-.131	.523
Q12.5	83	-.460	.264	-1.016	.523
Q12.6	83	-.978	.264	-.164	.523
Q12.7	83	-.762	.264	-.623	.523
Q12.8	83	-1.073	.264	.486	.523
Q12.9	83	-1.016	.264	.182	.523
Q12.10	83	.693	.264	-.366	.523
Q12.11	83	1.850	.264	5.275	.523
Q12.12	83	1.536	.264	2.037	.523
Q12.13	83	.960	.264	.348	.523
Q12.14	83	1.198	.264	1.403	.523
Q12.15	83	1.378	.264	2.170	.523
Q12.16	83	1.216	.264	1.490	.523
Q12.17	83	1.089	.264	.453	.523
Valid N (listwise)	83				

Relationship Performance

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q15.1	83	.860	.264	.351	.523
Q15.2	83	.639	.264	-.281	.523
Q15.3	83	.554	.264	-.356	.523
Q15.4	83	.355	.264	-.816	.523
Q15.5	83	.205	.264	-.811	.523
Q15.6	83	.341	.264	-.899	.523
Q16.1	83	.630	.264	-.286	.523
Q16.2	83	.338	.264	-.682	.523
Q16.3	83	.425	.264	-.625	.523
Q16.4	83	.180	.264	-1.053	.523
Q16.5	83	.234	.264	-.883	.523
Q16.6	83	.285	.264	-.960	.523
Valid N (listwise)	83				

Appendix G - Measurement Model

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 !past_exp 1 2, fut_orient 3 4 mot, spare1 5 6 7, goal 8 9, commit 10 11 12
13, role int 14 15 16 17 18,
 !spare2 19 20, flex 21 22 23,trust 24 25 26 27 28 29 30 31 32, spare3 33
34 35, perform 36 37 38 39
 !  measurement model
 SE
 1 2 3 4 8 9 12 13 15 16 17 22 23 26 27 32 38 39 /
 MO NX = 18 NK = 8
 PA LX
 2(1 0 0 0 0 0 0 0)
 2(0 1 0 0 0 0 0 0)
 2(0 0 1 0 0 0 0 0)
 2(0 0 0 1 0 0 0 0)
 3(0 0 0 0 1 0 0 0)
 2(0 0 0 0 0 1 0 0)
 3(0 0 0 0 0 0 1 0)
 2(0 0 0 0 0 0 0 1)
 PD
 OU AD=500    EF
 DA NI=39 NO = 83 MA = KM
                            NUMBER OF INPUT VARIABLES 39
                            NUMBER OF Y - VARIABLES    0
                            NUMBER OF X - VARIABLES   18
                            NUMBER OF ETA - VARIABLES  0
                            NUMBER OF KSI - VARIABLES  8
                            NUMBER OF OBSERVATIONS    83
 DA NI=39 NO = 83 MA = KM
         CORRELATION MATRIX TO BE ANALYZED
```

	VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
VAR 1	1.00					
VAR 2	0.54	1.00				
VAR 3	0.28	0.24	1.00			
VAR 4	0.28	0.27	0.68	1.00		
VAR 8	-0.06	-0.01	0.26	0.38	1.00	
VAR 9	-0.08	-0.12	0.24	0.30	0.85	1.00
VAR 12	0.49	0.31	0.46	0.55	0.17	0.22
VAR 13	0.45	0.32	0.45	0.37	0.08	0.14
VAR 15	0.03	-0.09	0.03	0.08	0.27	0.23
VAR 16	-0.06	-0.13	-0.02	-0.08	0.22	0.19

VAR 17	0.08	-0.04	0.09	0.07	0.29	0.26
VAR 22	0.15	0.28	0.53	0.37	0.20	0.15
VAR 23	0.14	0.26	0.51	0.36	0.25	0.20
VAR 26	0.36	0.20	0.42	0.19	0.10	0.04
VAR 27	0.34	0.15	0.40	0.22	0.02	0.02
VAR 32	0.33	0.11	0.43	0.27	0.08	0.14
VAR 38	0.24	0.12	0.42	0.40	0.27	0.23
VAR 39	0.19	0.11	0.46	0.39	0.27	0.28

CORRELATION MATRIX TO BE ANALYZED

	VAR 12	VAR 13	VAR 15	VAR 16	VAR 17	VAR 22
VAR 12	1.00					
VAR 13	0.78	1.00				
VAR 15	0.09	0.05	1.00			
VAR 16	-0.04	-0.01	0.74	1.00		
VAR 17	0.08	0.11	0.85	0.72	1.00	
VAR 22	0.29	0.16	-0.08	-0.04	0.02	1.00
VAR 23	0.29	0.16	-0.13	-0.08	0.01	0.93
VAR 26	0.46	0.47	-0.14	-0.10	-0.02	0.19
VAR 27	0.46	0.46	-0.16	-0.26	-0.12	0.05
VAR 32	0.51	0.46	-0.10	-0.19	-0.02	0.19
VAR 38	0.47	0.45	-0.02	-0.07	0.07	0.26
VAR 39	0.49	0.46	-0.04	-0.11	0.04	0.22

CORRELATION MATRIX TO BE ANALYZED

	VAR 23	VAR 26	VAR 27	VAR 32	VAR 38	VAR 39
VAR 23	1.00					
VAR 26	0.24	1.00				
VAR 27	0.07	0.83	1.00			
VAR 32	0.25	0.77	0.77	1.00		
VAR 38	0.27	0.45	0.44	0.44	1.00	
VAR 39	0.26	0.42	0.44	0.45	0.94	1.00

DA NI=39 NO = 83 MA = KM

PARAMETER SPECIFICATIONS

LAMBDA-X

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
VAR 1	1	0	0	0	0	0
VAR 2	2	0	0	0	0	0
VAR 3	0	3	0	0	0	0
VAR 4	0	4	0	0	0	0
VAR 8	0	0	5	0	0	0
VAR 9	0	0	6	0	0	0
VAR 12	0	0	0	7	0	0
VAR 13	0	0	0	8	0	0
VAR 15	0	0	0	0	9	0
VAR 16	0	0	0	0	10	0
VAR 17	0	0	0	0	11	0
VAR 22	0	0	0	0	0	12
VAR 23	0	0	0	0	0	13
VAR 26	0	0	0	0	0	0
VAR 27	0	0	0	0	0	0
VAR 32	0	0	0	0	0	0
VAR 38	0	0	0	0	0	0
VAR 39	0	0	0	0	0	0

LAMBDA-X

	KSI 7	KSI 8
VAR 1	0	0
VAR 2	0	0
VAR 3	0	0

VAR 4	0	0
VAR 8	0	0
VAR 9	0	0
VAR 12	0	0
VAR 13	0	0
VAR 15	0	0
VAR 16	0	0
VAR 17	0	0
VAR 22	0	0
VAR 23	0	0
VAR 26	14	0
VAR 27	15	0
VAR 32	16	0
VAR 38	0	17
VAR 39	0	18

PHI

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
KSI 1	0					
KSI 2	19	0				
KSI 3	20	21	0			
KSI 4	22	23	24	0		
KSI 5	25	26	27	28	0	
KSI 6	29	30	31	32	33	0
KSI 7	34	35	36	37	38	39
KSI 8	40	41	42	43	44	45

PHI

	KSI 7	KSI 8
KSI 7	0	
KSI 8	46	0

THETA-DELTA

VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
47	48	49	50	51	52

THETA-DELTA

VAR 12	VAR 13	VAR 15	VAR 16	VAR 17	VAR 22
53	54	55	56	57	58

THETA-DELTA

VAR 23	VAR 26	VAR 27	VAR 32	VAR 38	VAR 39
59	60	61	62	63	64

DA NI=39 NO = 83 MA = KM

Number of Iterations = 13

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA-X

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
VAR 1	0.90	- -	- -	- -	- -	- -
	(0.13)					
	7.00					
VAR 2	0.60	- -	- -	- -	- -	- -
	(0.12)					
	5.05					
VAR 3	- -	0.89	- -	- -	- -	- -
		(0.10)				
		9.20				

VAR 4	- -	0.76 (0.10) 7.56	- -	- -	- -	- -
VAR 8	- -	- -	0.95 (0.10) 9.69	- -	- -	- -
VAR 9	- -	- -	0.90 (0.10) 9.02	- -	- -	- -
VAR 12	- -	- -	- -	0.92 (0.09) 10.07	- -	- -
VAR 13	- -	- -	- -	0.85 (0.09) 9.07	- -	- -
VAR 15	- -	- -	- -	- -	0.94 (0.09) 11.02	- -
VAR 16	- -	- -	- -	- -	0.79 (0.09) 8.33	- -
VAR 17	- -	- -	- -	- -	0.90 (0.09) 10.21	- -
VAR 22	- -	- -	- -	- -	- -	0.97 (0.09) 11.18
VAR 23	- -	- -	- -	- -	- -	0.96 (0.09) 10.93
VAR 26	- -	- -	- -	- -	- -	- -
VAR 27	- -	- -	- -	- -	- -	- -
VAR 32	- -	- -	- -	- -	- -	- -
VAR 38	- -	- -	- -	- -	- -	- -
VAR 39	- -	- -	- -	- -	- -	- -

LAMBDA-X

	KSI 7	KSI 8
VAR 1	- -	- -
VAR 2	- -	- -
VAR 3	- -	- -
VAR 4	- -	- -
VAR 8	- -	- -
VAR 9	- -	- -
VAR 12	- -	- -
VAR 13	- -	- -
VAR 15	- -	- -
VAR 16	- -	- -
VAR 17	- -	- -
VAR 22	- -	- -
VAR 23	- -	- -
VAR 26	0.90 (0.09) 10.23	- -
VAR 27	0.91 (0.09) 10.54	- -
VAR 32	0.85 (0.09) 9.40	- -

VAR 38	- -	0.95
		(0.09)
		11.15
VAR 39	- -	0.99
		(0.08)
		11.91

PHI

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
KSI 1	1.00					
KSI 2	0.38	1.00				
	(0.12)					
	3.13					
KSI 3	-0.08	0.35	1.00			
	(0.13)	(0.11)				
	-0.63	3.15				
KSI 4	0.59	0.61	0.19	1.00		
	(0.10)	(0.09)	(0.12)			
	5.71	6.85	1.58			
KSI 5	0.02	0.06	0.31	0.08	1.00	
	(0.13)	(0.12)	(0.11)	(0.12)		
	0.18	0.46	2.82	0.67		
KSI 6	0.20	0.58	0.22	0.28	-0.07	1.00
	(0.12)	(0.09)	(0.11)	(0.11)	(0.12)	
	1.68	6.59	2.00	2.54	-0.57	
KSI 7	0.41	0.47	0.07	0.59	-0.15	0.17
	(0.11)	(0.10)	(0.12)	(0.08)	(0.12)	(0.11)
	3.64	4.55	0.62	6.89	-1.27	1.53
KSI 8	0.22	0.52	0.29	0.54	-0.02	0.26
	(0.12)	(0.09)	(0.11)	(0.09)	(0.12)	(0.11)
	1.89	5.59	2.76	6.27	-0.19	2.41

PHI

	KSI 7	KSI 8
KSI 7	1.00	
KSI 8	0.50	1.00
	(0.09)	
	5.64	

THETA-DELTA

VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
0.19	0.64	0.20	0.42	0.10	0.20
(0.18)	(0.13)	(0.09)	(0.09)	(0.10)	(0.10)
1.09	5.07	2.35	4.76	0.97	2.06

THETA-DELTA

VAR 12	VAR 13	VAR 15	VAR 16	VAR 17	VAR 22
0.16	0.27	0.11	0.38	0.19	0.06
(0.07)	(0.07)	(0.05)	(0.07)	(0.05)	(0.06)
2.33	3.93	2.18	5.60	3.64	0.94

THETA-DELTA

VAR 23	VAR 26	VAR 27	VAR 32	VAR 38	VAR 39
0.09	0.19	0.16	0.28	0.10	0.03
(0.06)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)
1.38	4.03	3.56	4.98	2.05	0.53

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
0.81	0.36	0.80	0.58	0.90	0.80

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

VAR 12	VAR 13	VAR 15	VAR 16	VAR 17	VAR 22
0.84	0.73	0.89	0.62	0.81	0.94

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

VAR 23	VAR 26	VAR 27	VAR 32	VAR 38	VAR 39
0.91	0.81	0.84	0.72	0.90	0.97

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 107 DEGREES OF FREEDOM = 145.36 (P = 0.0081)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 38.36

90 PERCENT CONFIDENCE INTERVAL FOR NCP = (10.80 ; 73.97)

MINIMUM FIT FUNCTION VALUE = 1.77

POPULATION DISCREPANCY FUNCTION VALUE (F0) = 0.47

90 PERCENT CONFIDENCE INTERVAL FOR F0 = (0.13 ; 0.90)

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.066

90 PERCENT CONFIDENCE INTERVAL FOR RMSEA = (0.035 ; 0.092)

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 0.17

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 3.33

90 PERCENT CONFIDENCE INTERVAL FOR ECVI = (3.00 ; 3.77)

ECVI FOR SATURATED MODEL = 4.17

ECVI FOR INDEPENDENCE MODEL = 15.92

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 153 DEGREES OF FREEDOM = 1269.71

INDEPENDENCE AIC = 1305.71

MODEL AIC = 273.36

SATURATED AIC = 342.00

INDEPENDENCE CAIC = 1367.25

MODEL CAIC = 492.16

SATURATED CAIC = 926.62

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.051

STANDARDIZED RMR = 0.051

GOODNESS OF FIT INDEX (GFI) = 0.85

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.76

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.53

NORMED FIT INDEX (NFI) = 0.89

NON-NORMED FIT INDEX (NNFI) = 0.95

PARSIMONY NORMED FIT INDEX (PNFI) = 0.62

COMPARATIVE FIT INDEX (CFI) = 0.97

INCREMENTAL FIT INDEX (IFI) = 0.97

RELATIVE FIT INDEX (RFI) = 0.84

CRITICAL N (CN) = 82.20

```
DA NI=39 NO = 83 MA = KM
SUMMARY STATISTICS FOR FITTED RESIDUALS
SMALLEST FITTED RESIDUAL =   -0.15
  MEDIAN FITTED RESIDUAL =    0.00
 LARGEST FITTED RESIDUAL =    0.16
STEMLEAF PLOT
-14|34
-12|0
-10|28100
- 8|640
- 6|8764321832
- 4|8865830
- 2|9998610087643221000
- 0|98876665110998877766522100000000000000000000000000
  0|11122444556779991144566678 8
  2|11244556677015777778
  4|014457885
  6|0226889
```

```
  8|11347
 10|059
 12|1
 14|3
 16|1
SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS
SMALLEST STANDARDIZED RESIDUAL =   -2.73
  MEDIAN STANDARDIZED RESIDUAL =    0.00
 LARGEST STANDARDIZED RESIDUAL =    2.67
STEMLEAF PLOT
- 2|7
- 2|221
- 1|997665555
- 1|44444332221111100
- 0|9998888887666666555
- 0|444444433333322211111100000000000000000000000000000
  0|111112222233333344444
  0|5555555666667778888999
  1|000112233444
  1|555556689999
  2|011
  2|7
LARGEST NEGATIVE STANDARDIZED RESIDUALS
RESIDUAL FOR   VAR 27 AND   VAR 22  -2.73
LARGEST POSITIVE STANDARDIZED RESIDUALS
RESIDUAL FOR   VAR 12 AND    VAR 4   2.67
DA NI=39 NO = 83 MA = KM
MODIFICATION INDICES AND EXPECTED CHANGE
        MODIFICATION INDICES FOR LAMBDA-X
```

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
VAR 1	- -	0.83	0.00	0.05	1.36	3.99
VAR 2	- -	0.83	0.00	0.05	1.36	3.99
VAR 3	0.39	- -	3.46	2.63	0.12	2.00
VAR 4	0.39	- -	3.46	2.63	0.12	2.00
VAR 8	0.30	0.09	- -	0.85	0.20	0.50
VAR 9	0.30	0.09	- -	0.85	0.20	0.50
VAR 12	0.00	0.72	1.16	- -	0.00	2.95
VAR 13	0.00	0.72	1.16	- -	0.00	2.95
VAR 15	0.02	0.16	0.17	0.02	- -	2.83
VAR 16	2.22	1.71	0.09	2.30	- -	0.01
VAR 17	1.35	1.76	0.42	0.80	- -	3.56
VAR 22	0.16	0.06	1.91	0.04	1.02	- -
VAR 23	0.16	0.06	1.91	0.04	1.02	- -
VAR 26	0.29	0.01	0.24	0.01	0.45	2.62
VAR 27	0.31	1.57	1.55	1.01	1.32	7.70
VAR 32	0.00	1.79	0.85	1.61	0.36	2.09
VAR 38	1.81	0.01	0.00	0.12	0.34	0.99
VAR 39	1.81	0.01	0.00	0.12	0.34	0.99

```
        MODIFICATION INDICES FOR LAMBDA-X
```

	KSI 7	KSI 8
VAR 1	1.01	0.07
VAR 2	1.01	0.07
VAR 3	3.82	0.02
VAR 4	3.82	0.02
VAR 8	0.00	0.09
VAR 9	0.00	0.09
VAR 12	0.35	0.02
VAR 13	0.35	0.02
VAR 15	0.28	0.52

VAR 16	2.25	1.96
VAR 17	2.56	3.01
VAR 22	1.19	0.78
VAR 23	1.19	0.78
VAR 26	- -	0.16
VAR 27	- -	0.05
VAR 32	- -	0.49
VAR 38	0.91	- -
VAR 39	0.91	- -

EXPECTED CHANGE FOR LAMBDA-X

	KSI 1	KSI 2	KSI 3	KSI 4	KSI 5	KSI 6
VAR 1	- -	-0.18	0.00	0.08	0.17	-0.30
VAR 2	- -	0.12	0.00	-0.06	-0.11	0.20
VAR 3	-0.08	- -	-0.21	-0.27	-0.04	0.21
VAR 4	0.07	- -	0.18	0.23	0.03	-0.18
VAR 8	0.04	0.03	- -	-0.07	0.04	0.05
VAR 9	-0.04	-0.03	- -	0.06	-0.03	-0.05
VAR 12	0.01	0.12	0.09	- -	0.01	0.14
VAR 13	0.00	-0.11	-0.08	- -	0.00	-0.13
VAR 15	-0.01	-0.02	-0.03	0.01	- -	-0.10
VAR 16	-0.12	-0.10	-0.02	-0.12	- -	-0.01
VAR 17	0.07	0.08	0.04	0.05	- -	0.11
VAR 22	0.02	0.04	-0.07	-0.01	0.04	- -
VAR 23	-0.02	-0.04	0.07	0.01	-0.04	- -
VAR 26	0.04	0.01	0.03	-0.01	0.04	0.10
VAR 27	-0.04	-0.10	-0.08	-0.09	-0.07	-0.17
VAR 32	0.00	0.11	0.06	0.12	0.04	0.10
VAR 38	0.06	0.01	0.00	0.03	0.02	0.04
VAR 39	-0.06	-0.01	0.00	-0.03	-0.02	-0.04

EXPECTED CHANGE FOR LAMBDA-X

	KSI 7	KSI 8
VAR 1	0.20	0.04
VAR 2	-0.13	-0.03
VAR 3	0.25	-0.02
VAR 4	-0.21	0.02
VAR 8	0.00	-0.02
VAR 9	0.00	0.02
VAR 12	-0.07	-0.01
VAR 13	0.07	0.01
VAR 15	-0.03	-0.04
VAR 16	-0.11	-0.10
VAR 17	0.10	0.10
VAR 22	-0.05	-0.04
VAR 23	0.05	0.04
VAR 26	- -	-0.03
VAR 27	- -	-0.02
VAR 32	- -	0.06
VAR 38	0.06	- -
VAR 39	-0.06	- -

NO NON-ZERO MODIFICATION INDICES FOR PHI

MODIFICATION INDICES FOR THETA-DELTA

	VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
VAR 1	- -					
VAR 2	- -	- -				
VAR 3	0.19	0.14	- -			
VAR 4	0.10	0.58	- -	- -		
VAR 8	0.00	3.71	1.63	3.94	- -	
VAR 9	0.00	4.15	0.12	0.76	- -	- -

VAR 12	0.24	0.17	9.73	10.66	0.48	1.52
VAR 13	0.43	0.45	3.86	3.61	0.95	0.21
VAR 15	0.01	0.28	0.19	2.79	0.33	0.44
VAR 16	0.29	0.12	0.81	3.25	0.00	0.00
VAR 17	0.51	0.01	0.13	1.59	0.10	0.16
VAR 22	0.05	0.41	1.52	0.03	0.12	0.47
VAR 23	0.04	0.00	0.39	0.26	0.36	0.18
VAR 26	0.01	0.58	0.34	4.52	4.73	4.33
VAR 27	0.05	0.16	0.95	0.00	0.04	0.02
VAR 32	0.04	1.69	0.02	0.04	3.43	4.51
VAR 38	2.39	0.24	3.04	0.98	4.64	5.04
VAR 39	2.04	0.11	2.87	0.90	4.07	4.37

MODIFICATION INDICES FOR THETA-DELTA

	VAR 12	VAR 13	VAR 15	VAR 16	VAR 17	VAR 22
VAR 12	- -					
VAR 13	- -	- -				
VAR 15	4.04	1.98	- -			
VAR 16	0.33	0.43	1.23	- -		
VAR 17	3.58	1.43	0.00	1.17	- -	
VAR 22	0.09	0.08	1.68	0.29	1.22	- -
VAR 23	0.08	0.15	4.71	0.07	3.49	- -
VAR 26	0.65	0.34	7.20	7.50	2.48	0.28
VAR 27	0.35	0.06	3.43	3.78	1.83	0.23
VAR 32	2.03	0.53	0.08	1.30	0.47	0.59
VAR 38	0.33	0.01	0.81	0.47	1.08	2.48
VAR 39	0.19	0.04	0.29	0.83	0.21	2.56

MODIFICATION INDICES FOR THETA-DELTA

	VAR 23	VAR 26	VAR 27	VAR 32	VAR 38	VAR 39
VAR 23	- -					
VAR 26	2.10	- -				
VAR 27	3.06	0.59	- -			
VAR 32	1.61	0.01	0.64	- -		
VAR 38	1.04	2.26	0.28	0.16	- -	
VAR 39	1.16	2.49	0.44	0.13	- -	- -

EXPECTED CHANGE FOR THETA-DELTA

	VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
VAR 1	- -					
VAR 2	- -	- -				
VAR 3	-0.03	-0.02	- -			
VAR 4	0.02	0.05	- -	- -		
VAR 8	0.00	0.09	-0.05	0.08	- -	
VAR 9	0.00	-0.10	0.01	-0.04	- -	- -
VAR 12	0.03	-0.02	-0.14	0.15	-0.02	0.04
VAR 13	-0.04	0.04	0.09	-0.09	-0.03	0.02
VAR 15	0.00	-0.02	-0.02	0.06	0.02	-0.02
VAR 16	-0.03	-0.02	0.04	-0.09	0.00	0.00
VAR 17	0.03	0.01	0.01	-0.05	-0.01	0.01
VAR 22	-0.01	0.02	0.04	-0.01	-0.01	-0.01
VAR 23	-0.01	0.00	-0.02	-0.02	0.01	0.01
VAR 26	0.00	0.04	0.02	-0.09	0.07	-0.06
VAR 27	0.01	-0.02	0.04	0.00	-0.01	0.00
VAR 32	0.01	-0.07	-0.01	0.01	-0.06	0.07
VAR 38	0.05	-0.02	-0.04	0.03	0.04	-0.05
VAR 39	-0.04	0.01	0.04	-0.03	-0.04	0.04

EXPECTED CHANGE FOR THETA-DELTA

	VAR 12	VAR 13	VAR 15	VAR 16	VAR 17	VAR 22
VAR 12	- -					

VAR 13	- -	- -				
VAR 15	0.06	-0.05	- -			
VAR 16	-0.02	0.03	-0.13	- -		
VAR 17	-0.06	0.04	-0.01	0.11	- -	
VAR 22	0.01	-0.01	0.03	0.01	-0.02	- -
VAR 23	0.01	-0.01	-0.04	-0.01	0.04	- -
VAR 26	-0.03	0.02	-0.08	0.10	0.05	-0.01
VAR 27	-0.02	0.01	0.05	-0.07	-0.04	0.01
VAR 32	0.05	-0.03	0.01	-0.05	0.02	-0.02
VAR 38	-0.01	0.00	-0.02	0.02	0.02	0.02
VAR 39	0.01	0.00	0.01	-0.02	-0.01	-0.02

EXPECTED CHANGE FOR THETA-DELTA

	VAR 23	VAR 26	VAR 27	VAR 32	VAR 38	VAR 39
VAR 23	- -					
VAR 26	0.03	- -				
VAR 27	-0.04	0.06	- -			
VAR 32	0.03	0.01	-0.05	- -		
VAR 38	-0.01	0.03	-0.01	-0.01	- -	
VAR 39	0.02	-0.03	0.01	0.01	- -	- -

MAXIMUM MODIFICATION INDEX IS 10.66 FOR ELEMENT (7, 4) OF THETA-DELTA

THE PROBLEM USED 56688 BYTES (= 5.3% OF AVAILABLE WORKSPACE)

TIME USED: 0.9 SECONDS

Appendix H - Final Lisrel Model

```
                                DATE:  3/16/ 0
                                TIME: 17:24
                          WINDOWS  L I S R E L  8.14
                                   BY
                          KARL G JORESKOG AND DAG SORBOM
                       This program is published exclusively by
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                                Universal Copyright Convention.
 The following lines were read from file D:\CJMPHD\FINALD~1\SEM8I.LS8:
 DA NI=39 NO = 83 MA = KM
 KM FI = corfint
 !past_exp 1 2, fut_orient 3 4 mot, spare1 5 6 7, goal 8 9, commit 10 11 12
13, role int 14 15 16 17 18,
 !spare2 19 20, flex 21 22 23,trust 24 25 26 27 28 29 30 31 32,spare3 33 34
35, perform 36 37 38 39
 SE
 12 13 26 27 32 38 39 1 2 3 4 8 9/
 MO NX = 6 NY= 7 NK = 3  NE=3 BE=FU
 PA LX
 2(1 0 0)
 2(0 1 0)
 2(0 0 1)
 PA LY
 2(1 0 0)
 3(0 1 0)
 2(0 0 1)
 FR  BE 2 1 BE 3 2 BE 3 1
 FI GA 3 1 GA 2 1 GA 1 3 GA 2 2 GA 2 3 GA 3 2
 PD
 OU AD=500    EF
DA NI=39 NO = 83 MA = KM
                          NUMBER OF INPUT VARIABLES 39
                          NUMBER OF Y - VARIABLES    7
                          NUMBER OF X - VARIABLES    6
                          NUMBER OF ETA - VARIABLES  3
                          NUMBER OF KSI - VARIABLES  3
                          NUMBER OF OBSERVATIONS    83
 DA NI=39 NO = 83 MA = KM
         CORRELATION MATRIX TO BE ANALYZED
              VAR 12     VAR 13     VAR 26     VAR 27     VAR 32     VAR 38
             --------   --------   --------   --------   --------   --------
   VAR 12       1.00
   VAR 13       0.78       1.00
   VAR 26       0.46       0.47       1.00
   VAR 27       0.46       0.46       0.83       1.00
   VAR 32       0.51       0.46       0.77       0.77       1.00
   VAR 38       0.47       0.45       0.45       0.44       0.44       1.00
   VAR 39       0.49       0.46       0.42       0.44       0.45       0.94
    VAR 1       0.49       0.45       0.36       0.34       0.33       0.24
    VAR 2       0.31       0.32       0.20       0.15       0.11       0.12
    VAR 3       0.46       0.45       0.42       0.40       0.43       0.42
```

VAR 4	0.55	0.37	0.19	0.22	0.27	0.40
VAR 8	0.17	0.08	0.10	0.02	0.08	0.27
VAR 9	0.22	0.14	0.04	0.02	0.14	0.23

CORRELATION MATRIX TO BE ANALYZED

	VAR 39	VAR 1	VAR 2	VAR 3	VAR 4	VAR 8
VAR 39	1.00					
VAR 1	0.19	1.00				
VAR 2	0.11	0.54	1.00			
VAR 3	0.46	0.28	0.24	1.00		
VAR 4	0.39	0.28	0.27	0.68	1.00	
VAR 8	0.27	-0.06	-0.01	0.26	0.38	1.00
VAR 9	0.28	-0.08	-0.12	0.24	0.30	0.85

CORRELATION MATRIX TO BE ANALYZED

	VAR 9
VAR 9	1.00

```
DA NI=39 NO = 83 MA = KM
```

PARAMETER SPECIFICATIONS

LAMBDA-Y

	ETA 1	ETA 2	ETA 3
VAR 12	0	0	0
VAR 13	1	0	0
VAR 26	0	0	0
VAR 27	0	2	0
VAR 32	0	3	0
VAR 38	0	0	0
VAR 39	0	0	4

LAMBDA-X

	KSI 1	KSI 2	KSI 3
VAR 1	5	0	0
VAR 2	6	0	0
VAR 3	0	7	0
VAR 4	0	8	0
VAR 8	0	0	9
VAR 9	0	0	10

BETA

	ETA 1	ETA 2	ETA 3
ETA 1	0	0	0
ETA 2	11	0	0
ETA 3	12	13	0

GAMMA

	KSI 1	KSI 2	KSI 3
ETA 1	14	15	0
ETA 2	0	0	0
ETA 3	0	0	16

PHI

	KSI 1	KSI 2	KSI 3
KSI 1	0		
KSI 2	17	0	
KSI 3	18	19	0

PSI

	ETA 1	ETA 2	ETA 3
	20	21	22

THETA-EPS

VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
23	24	25	26	27	28

THETA-EPS

VAR 39
29

THETA-DELTA

VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
30	31	32	33	34	35

DA NI=39 NO = 83 MA = KM

Number of Iterations = 9

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA-Y

	ETA 1	ETA 2	ETA 3
VAR 12	0.93	- -	- -
	(0.12)		
	7.64		
VAR 13	0.84	- -	- -
	(0.11)		
	7.38		
VAR 26	- -	0.90	- -
		(0.09)	
		9.57	
VAR 27	- -	0.91	- -
		(0.09)	
		9.66	
VAR 32	- -	0.85	- -
		(0.10)	
		8.88	
VAR 38	- -	- -	0.96
			(0.09)
			10.93
VAR 39	- -	- -	0.97
			(0.09)
			10.91

LAMBDA-X

	KSI 1	KSI 2	KSI 3
VAR 1	0.90	- -	- -
	(0.13)		
	6.94		
VAR 2	0.60	- -	- -
	(0.12)		
	5.04		
VAR 3	- -	0.78	- -
		(0.10)	
		7.52	
VAR 4	- -	0.87	- -
		(0.10)	
		8.54	
VAR 8	- -	- -	0.96
			(0.10)
			9.49

VAR 9	- -	- -	0.89
			(0.10)
			8.69

BETA

	ETA 1	ETA 2	ETA 3
ETA 1	- -	- -	- -
ETA 2	0.59	- -	- -
	(0.14)		
	4.35		
ETA 3	0.33	0.29	- -
	(0.13)	(0.13)	
	2.53	2.33	

GAMMA

	KSI 1	KSI 2	KSI 3
ETA 1	0.40	0.49	- -
	(0.14)	(0.13)	
	2.95	3.69	
ETA 2	- -	- -	- -
ETA 3	- -	- -	0.21
			(0.10)
			2.19

COVARIANCE MATRIX OF ETA AND KSI

	ETA 1	ETA 2	ETA 3	KSI 1	KSI 2	KSI 3
ETA 1	1.00					
ETA 2	0.59	1.00				
ETA 3	0.54	0.51	1.00			
KSI 1	0.59	0.35	0.28	1.00		
KSI 2	0.65	0.38	0.42	0.39	1.00	
KSI 3	0.17	0.10	0.30	-0.08	0.41	1.00

PHI

	KSI 1	KSI 2	KSI 3
KSI 1	1.00		
KSI 2	0.39	1.00	
	(0.12)		
	3.21		
KSI 3	-0.08	0.41	1.00
	(0.12)	(0.11)	
	-0.61	3.80	

PSI

ETA 1	ETA 2	ETA 3
0.45	0.65	0.60

SQUARED MULTIPLE CORRELATIONS FOR STRUCTURAL EQUATIONS

ETA 1	ETA 2	ETA 3
0.55	0.35	0.40

THETA-EPS

VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
0.14	0.30	0.19	0.17	0.27	0.07
(0.06)	(0.07)	(0.05)	(0.05)	(0.06)	(0.05)
2.16	4.30	3.89	3.70	4.92	1.46

THETA-EPS

VAR 39
0.05
(0.05)
1.04

SQUARED MULTIPLE CORRELATIONS FOR Y - VARIABLES

VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
0.86	0.70	0.81	0.83	0.73	0.93

SQUARED MULTIPLE CORRELATIONS FOR Y - VARIABLES

VAR 39
0.95

THETA-DELTA

VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
0.20	0.64	0.39	0.24	0.09	0.21
(0.18)	(0.13)	(0.10)	(0.10)	(0.11)	(0.10)
1.11	5.00	4.04	2.44	0.75	2.04

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
0.80	0.36	0.61	0.76	0.91	0.79

GOODNESS OF FIT STATISTICS

CHI-SQUARE WITH 56 DEGREES OF FREEDOM = 67.06 (P = 0.15)

ESTIMATED NON-CENTRALITY PARAMETER (NCP) = 11.06

90 PERCENT CONFIDENCE INTERVAL FOR NCP = (0.0 ; 35.80)

MINIMUM FIT FUNCTION VALUE = 0.82

POPULATION DISCREPANCY FUNCTION VALUE (F0) = 0.13

90 PERCENT CONFIDENCE INTERVAL FOR F0 = (0.0 ; 0.44)

ROOT MEAN SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.049

90 PERCENT CONFIDENCE INTERVAL FOR RMSEA = (0.0 ; 0.088)

P-VALUE FOR TEST OF CLOSE FIT (RMSEA < 0.05) = 0.49

EXPECTED CROSS-VALIDATION INDEX (ECVI) = 1.67

90 PERCENT CONFIDENCE INTERVAL FOR ECVI = (1.54 ; 1.97)

ECVI FOR SATURATED MODEL = 2.22

ECVI FOR INDEPENDENCE MODEL = 10.25

CHI-SQUARE FOR INDEPENDENCE MODEL WITH 78 DEGREES OF FREEDOM = 814.62

INDEPENDENCE AIC = 840.62

MODEL AIC = 137.06

SATURATED AIC = 182.00

INDEPENDENCE CAIC = 885.07

MODEL CAIC = 256.72

SATURATED CAIC = 493.11

ROOT MEAN SQUARE RESIDUAL (RMR) = 0.049

STANDARDIZED RMR = 0.049

GOODNESS OF FIT INDEX (GFI) = 0.89

ADJUSTED GOODNESS OF FIT INDEX (AGFI) = 0.82

PARSIMONY GOODNESS OF FIT INDEX (PGFI) = 0.55

NORMED FIT INDEX (NFI) = 0.92

NON-NORMED FIT INDEX (NNFI) = 0.98

PARSIMONY NORMED FIT INDEX (PNFI) = 0.66

COMPARATIVE FIT INDEX (CFI) = 0.98

INCREMENTAL FIT INDEX (IFI) = 0.99

RELATIVE FIT INDEX (RFI) = 0.89

CRITICAL N (CN) = 103.13

DA NI=39 NO = 83 MA = KM

SUMMARY STATISTICS FOR FITTED RESIDUALS

SMALLEST FITTED RESIDUAL = -0.11

```
  MEDIAN FITTED RESIDUAL =     0.00
 LARGEST FITTED RESIDUAL =     0.18
STEMLEAF PLOT
- 1|10
- 0|8876666555
- 0|444433222222111111000000000000000000000000000
  0|111111112222222333444
  0|555566688
  1|134
  1|58
SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS
SMALLEST STANDARDIZED RESIDUAL =    -2.49
  MEDIAN STANDARDIZED RESIDUAL =     0.00
 LARGEST STANDARDIZED RESIDUAL =     2.15
STEMLEAF PLOT
- 2|5
- 2|
- 1|
- 1|4310
- 0|998888776666555555
- 0|44433222111110000000000000000
  0|111122222334444
  0|566667778889
  1|011112
  1|569
  2|01
DA NI=39 NO = 83 MA = KM
MODIFICATION INDICES AND EXPECTED CHANGE
        MODIFICATION INDICES FOR LAMBDA-Y
              ETA 1      ETA 2      ETA 3
            --------   --------   --------
  VAR 12        - -       1.12       0.28
  VAR 13        - -       0.44       0.08
  VAR 26       0.10        - -       0.14
  VAR 27       0.67        - -       0.05
  VAR 32       1.64        - -       0.38
  VAR 38       0.12       0.26        - -
  VAR 39       0.12       0.26        - -
       EXPECTED CHANGE FOR LAMBDA-Y
              ETA 1      ETA 2      ETA 3
            --------   --------   --------
  VAR 12        - -      -0.12      -0.05
  VAR 13        - -       0.07       0.03
  VAR 26      -0.03        - -      -0.03
  VAR 27      -0.07        - -      -0.02
  VAR 32       0.12        - -       0.05
  VAR 38      -0.03       0.04        - -
  VAR 39       0.03      -0.04        - -
       MODIFICATION INDICES FOR LAMBDA-X
              KSI 1      KSI 2      KSI 3
            --------   --------   --------
   VAR 1        - -       0.73       0.02
   VAR 2        - -       0.73       0.00
   VAR 3       0.17        - -       0.97
   VAR 4       0.17        - -       0.74
   VAR 8       0.38       0.12        - -
   VAR 9       0.28       0.28        - -
```

EXPECTED CHANGE FOR LAMBDA-X

	KSI 1	KSI 2	KSI 3
VAR 1	- -	-0.17	-0.02
VAR 2	- -	0.12	0.01
VAR 3	0.05	- -	-0.10
VAR 4	-0.05	- -	0.10
VAR 8	0.04	0.04	- -
VAR 9	-0.03	-0.05	- -

MODIFICATION INDICES FOR BETA

	ETA 1	ETA 2	ETA 3
ETA 1	- -	0.35	0.20
ETA 2	- -	- -	0.11
ETA 3	- -	- -	- -

EXPECTED CHANGE FOR BETA

	ETA 1	ETA 2	ETA 3
ETA 1	- -	-0.10	-0.07
ETA 2	- -	- -	-0.16
ETA 3	- -	- -	- -

MODIFICATION INDICES FOR GAMMA

	KSI 1	KSI 2	KSI 3
ETA 1	- -	- -	0.04
ETA 2	0.58	0.01	0.11
ETA 3	0.63	1.67	- -

EXPECTED CHANGE FOR GAMMA

	KSI 1	KSI 2	KSI 3
ETA 1	- -	- -	0.02
ETA 2	0.11	0.01	-0.03
ETA 3	-0.11	0.21	- -

NO NON-ZERO MODIFICATION INDICES FOR PHI

MODIFICATION INDICES FOR PSI

	ETA 1	ETA 2	ETA 3
ETA 1	- -		
ETA 2	0.35	- -	
ETA 3	0.14	- -	- -

EXPECTED CHANGE FOR PSI

	ETA 1	ETA 2	ETA 3
ETA 1	- -		
ETA 2	-0.06	- -	
ETA 3	-0.04	- -	- -

MODIFICATION INDICES FOR THETA-EPS

	VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
VAR 12	- -					
VAR 13	0.50	- -				
VAR 26	0.63	0.48	- -			
VAR 27	0.60	0.05	1.30	- -		
VAR 32	1.80	0.51	0.29	0.24	- -	
VAR 38	0.69	0.01	1.92	0.36	0.28	- -
VAR 39	0.37	0.07	2.37	0.55	0.29	- -

MODIFICATION INDICES FOR THETA-EPS

	VAR 39
VAR 39	- -

EXPECTED CHANGE FOR THETA-EPS

	VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
VAR 12	- -					
VAR 13	0.09	- -				
VAR 26	-0.03	0.02	- -			
VAR 27	-0.03	0.01	0.10	- -		
VAR 32	0.05	-0.03	-0.04	-0.04	- -	
VAR 38	-0.02	0.00	0.03	-0.01	-0.01	- -
VAR 39	0.01	0.01	-0.03	0.01	0.01	- -

EXPECTED CHANGE FOR THETA-EPS

	VAR 39
VAR 39	- -

MODIFICATION INDICES FOR THETA-DELTA-EPS

	VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
VAR 1	0.17	0.14	0.21	0.03	0.08	2.20
VAR 2	0.39	0.36	0.87	0.11	1.57	0.21
VAR 3	7.38	2.99	1.72	0.06	0.07	1.45
VAR 4	8.09	6.50	3.80	0.00	0.08	1.42
VAR 8	0.69	0.69	5.98	0.24	3.48	4.65
VAR 9	2.14	0.33	4.18	0.05	4.82	5.19

MODIFICATION INDICES FOR THETA-DELTA-EPS

	VAR 39
VAR 1	3.10
VAR 2	0.11
VAR 3	2.52
VAR 4	0.94
VAR 8	4.79
VAR 9	4.54

EXPECTED CHANGE FOR THETA-DELTA-EPS

	VAR 12	VAR 13	VAR 26	VAR 27	VAR 32	VAR 38
VAR 1	0.02	-0.02	0.02	0.01	0.01	0.04
VAR 2	-0.04	0.03	0.05	-0.02	-0.07	-0.01
VAR 3	-0.13	0.09	0.05	0.01	0.01	-0.03
VAR 4	0.14	-0.12	-0.08	0.00	0.01	0.03
VAR 8	-0.03	-0.03	0.07	-0.01	-0.06	0.04
VAR 9	0.05	0.02	-0.06	-0.01	0.07	-0.05

EXPECTED CHANGE FOR THETA-DELTA-EPS

	VAR 39
VAR 1	-0.05
VAR 2	0.01
VAR 3	0.04
VAR 4	-0.02
VAR 8	-0.04
VAR 9	0.04

MODIFICATION INDICES FOR THETA-DELTA

	VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
VAR 1	- -					
VAR 2	0.04	- -				
VAR 3	0.02	0.00	- -			
VAR 4	0.30	0.91	0.04	- -		
VAR 8	0.02	3.28	1.04	3.49	- -	
VAR 9	0.00	4.44	0.16	2.67	2.53	- -

EXPECTED CHANGE FOR THETA-DELTA

	VAR 1	VAR 2	VAR 3	VAR 4	VAR 8	VAR 9
VAR 1	- -					
VAR 2	-0.08	- -				
VAR 3	-0.01	0.00	- -			
VAR 4	-0.04	0.06	0.04	- -		
VAR 8	0.01	0.09	-0.04	0.08	- -	
VAR 9	0.00	-0.10	0.02	-0.07	1.32	- -

MAXIMUM MODIFICATION INDEX IS 8.09 FOR ELEMENT (4, 1) OF THETA DELTA-EPSILON

DA NI=39 NO = 83 MA = KM

TOTAL AND INDIRECT EFFECTS

TOTAL EFFECTS OF KSI ON ETA

	KSI 1	KSI 2	KSI 3
ETA 1	0.40	0.49	- -
	(0.14)	(0.13)	
	2.95	3.69	
ETA 2	0.24	0.29	- -
	(0.08)	(0.09)	
	2.78	3.23	
ETA 3	0.20	0.25	0.21
	(0.07)	(0.08)	(0.10)
	2.72	3.13	2.19

INDIRECT EFFECTS OF KSI ON ETA

	KSI 1	KSI 2	KSI 3
ETA 1	- -	- -	- -
ETA 2	0.24	0.29	- -
	(0.08)	(0.09)	
	2.78	3.23	
ETA 3	0.20	0.25	- -
	(0.07)	(0.08)	
	2.72	3.13	

TOTAL EFFECTS OF ETA ON ETA

	ETA 1	ETA 2	ETA 3
ETA 1	- -	- -	- -
ETA 2	0.59	- -	- -
	(0.14)		
	4.35		
ETA 3	0.51	0.29	- -
	(0.12)	(0.13)	
	4.12	2.33	

LARGEST EIGENVALUE OF B*B' (STABILITY INDEX) IS 0.483

INDIRECT EFFECTS OF ETA ON ETA

	ETA 1	ETA 2	ETA 3
ETA 1	- -	- -	- -
ETA 2	- -	- -	- -
ETA 3	0.17	- -	- -
	(0.08)		
	2.17		

TOTAL EFFECTS OF ETA ON Y

	ETA 1	ETA 2	ETA 3
VAR 12	0.93	- -	- -
	(0.12)		
	7.64		

VAR 13	0.84	- -	- -
	(0.11)		
	7.38		
VAR 26	0.53	0.90	- -
	(0.11)	(0.09)	
	4.80	9.57	
VAR 27	0.53	0.91	- -
	(0.11)	(0.09)	
	4.81	9.66	
VAR 32	0.50	0.85	- -
	(0.11)	(0.10)	
	4.70	8.88	
VAR 38	0.49	0.28	0.96
	(0.11)	(0.12)	(0.09)
	4.41	2.37	10.93
VAR 39	0.49	0.29	0.97
	(0.11)	(0.12)	(0.09)
	4.45	2.37	10.91

INDIRECT EFFECTS OF ETA ON Y

	ETA 1	ETA 2	ETA 3
VAR 12	- -	- -	- -
VAR 13	- -	- -	- -
VAR 26	0.53	- -	- -
	(0.11)		
	4.80		
VAR 27	0.53	- -	- -
	(0.11)		
	4.81		
VAR 32	0.50	- -	- -
	(0.11)		
	4.70		
VAR 38	0.49	0.28	- -
	(0.11)	(0.12)	
	4.41	2.37	
VAR 39	0.49	0.29	- -
	(0.11)	(0.12)	
	4.45	2.37	

TOTAL EFFECTS OF KSI ON Y

	KSI 1	KSI 2	KSI 3
VAR 12	0.37	0.45	- -
	(0.11)	(0.11)	
	3.34	4.20	
VAR 13	0.34	0.41	- -
	(0.10)	(0.10)	
	3.25	4.03	
VAR 26	0.21	0.26	- -
	(0.07)	(0.08)	
	2.89	3.40	
VAR 27	0.21	0.26	- -
	(0.07)	(0.08)	
	2.90	3.41	
VAR 32	0.20	0.25	- -
	(0.07)	(0.07)	
	2.87	3.37	
VAR 38	0.20	0.24	0.21
	(0.07)	(0.07)	(0.09)
	2.81	3.25	2.23

```
VAR 39        0.20         0.24         0.21
            (0.07)       (0.07)       (0.09)
              2.81         3.26         2.23
        THE PROBLEM USED    25760 BYTES (=  2.4% OF AVAILABLE WORKSPACE)
                            TIME USED:      0.4 SECONDS
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