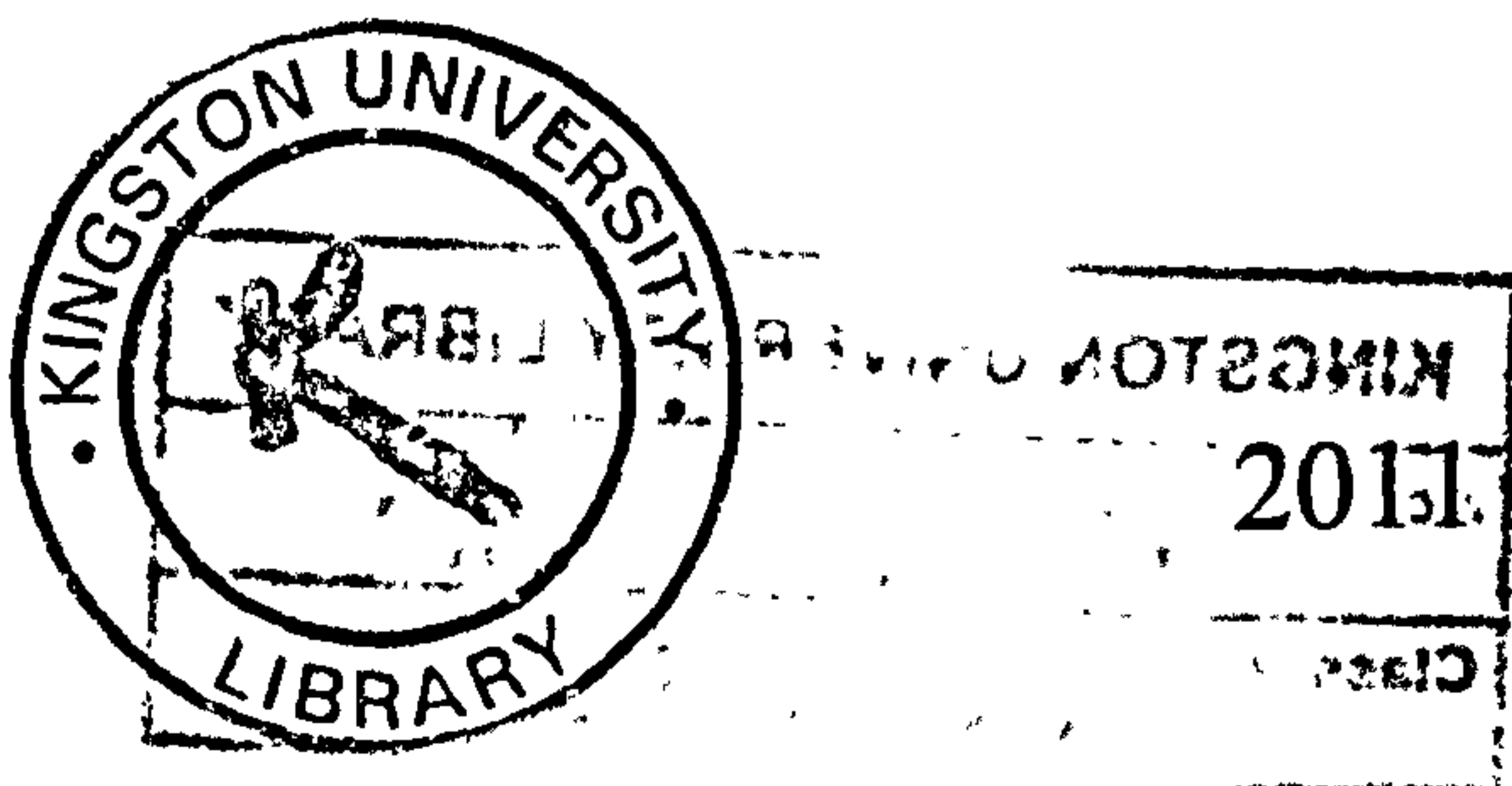


**FOR
REFERENCE ONLY**

**THE ROLE OF
RELATIONAL NORMS IN ENHANCING
ADAPTATION
IN BUSINESS RELATIONSHIPS
BY CONTROLLING UNCERTAINTY
AND OPPORTUNISM**

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A thesis submitted in partial fulfilment
of the requirements of Kingston University for the degree of
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ABSTRACT

This study focuses on adaptation within marketing relationships. Within marketing theory, adaptation refers to the practice of making investments which are of particular relevance to a specific relationship. Considerable benefits flow from such investments in the form of enhanced performance (Parkhe, 1993; Dyer, 1996). Within transaction cost analysis literature, Williamson (1999, p.312) described adaptation as the “central problem of economic organization”, According to Williamson (1975), adaptation is impeded by uncertainty and the threat of opportunism. In order to counter these problems, Williamson argues that governance structures need to be in place which will achieve the dual aims of both controlling the risks posed by uncertainty and opportunism, and also enhancing adaptation within relationships. Despite the centrality of importance attributed to adaptation by Williamson, there is a paucity of empirical research into this area within transaction cost analysis literature.

A literature review shows that there has been very little examination of the problems posed by uncertainty and opportunism to adaptation within relationships. Furthermore, the literature review also showed that extant research on governance within transaction cost analysis is concerned predominantly with issues surrounding choices of governance, rather than the effectiveness of different modes of governance as a means of managing adaptation within relationships. Williamson (1991a), in particular, cast doubt on the capacity of hybrid forms of governance, such as relational norms, to manage the adaptation process but there is an absence of investigation within the literature into this matter. However, there is an absence of research into the capacity of relational norms to act as form of governance that can manage the risks of uncertainty and opportunism, as well as to enhance adaptation within relationships.

This gap in the research forms the aim of this study, which seeks to provide systematic research and empirical evidence into the role of relational norms as a governance structure for adaptation within relationships. The setting for the empirical research was the UK automotive sector. Analysis of the data showed that the negative, hypothesised effect of opportunism on adaptation was supported. It was also shown that the norm of solidarity enhanced adaptation within relationships. Furthermore, it was also shown that when the effect of an interaction of the norm of information exchange and opportunism on adaptation was modelled a significant, positive effect was reported. A similar, positive result was reported when the effect of an interaction of uncertainty and the norm of solidarity on adaptation was modelled. A divergence in results was found in several areas involving human and technological adaptation, and the role of uncertainty, which may have been caused by situational factors. Areas in need of further research, in particular those involving a divergence of results are identified.

This study contributes to literature in several ways. It represents the first study which has considered the relational norms as a form of governance for adaptation within relationships. The negative effect of opportunism on adaptation is shown to be a factor that must be managed. Furthermore, the roles of norms, in particular information exchange and solidarity are shown to be effective in assisting the governance of adaptation. Finally, the study provides specific guidance to management on the means to improve the governance of adaptation within relationships.

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The love and support of my family must be acknowledged. In particular, the considerable support and love of my wife should be set out as a statement of public record. I dedicate this thesis to my family.

Finally, I must publicly acknowledge that all errors remain my sole responsibility.

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PART A

INTRODUCTION

This Section comprises one chapter:

❖ *Chapter A1: Introduction*

CHAPTER A1: INTRODUCTION

A1.1 BACKGROUND TO THE RESEARCH

Within modern marketing, adaptation refers to the extent to which the buyer and seller make substantial investments in the relationship (Ford, 1980). When a party commits resources to the relationship, the party making the investment has adapted to the needs of the other party (IMP Project, 1982). Adaptations therefore represent substantial investments of resources and are seen as an effective way of maintaining or developing a single, valued business relationship. Adaptation investments are crucial for parties to relationships in realizing value propositions and positions of competitive advantage (Ghosh and John, 1999). Recent empirical work confirms that investments in relation-specific assets are often correlated with superior performance (Parkhe, 1993; Dyer, 1996).

However, if the gains are to be realized from the adaptation, the relationships needs to be enduring since the value of the investment is likely to be much diminished if it ends prematurely. Since parties who have made adaptation investments depend on the relationship continuing they place they themselves in a position of potential vulnerability to exploitation from the other party unless appropriate measures are in place. Given the importance of adaptation investments to relationships, and in order to prevent potential hazards, it is crucial that appropriate governance structures are in place. Within transaction cost analysis, the governance of adaptation has been described by Williamson (1999, p.312; 2002, p.8; 2005, p.2 and 2008, p.1101) as “the central problem of economic organization”,

This study will seek empirical evidence from the UK automotive sector in order to investigate the use of governance strategies and sets out their impact on controlling against hazards and fostering adaptation investments. The UK automotive sector is a suitable research area for several reasons. It is common for buyer-seller relationships to exist in this sector. Furthermore, the theoretical issues raised in this thesis can be examined in the context of marketing relationships that are faced with the reality of having to make adaptation investments

This study will advance theory by examining the previously overlooked relationships between governance and adaptation investments. Practitioners will benefit from the production of new insights and guidance aimed at providing them with the knowledge to establish and maintain governance structures that will successfully manage the process of adaptation investments.

In the remainder of this chapter an overview of the study is presented, the research problem is delineated and the conceptual and theoretical foci are provided. The background to the study is explained and the governance of adaptation investments is summarised. The study aim and

objectives are defined, the conceptual model is reviewed and the theoretical contributions together with the study limitations are identified. In the next Section, the author provides an overview of governance within transaction cost analysis.

A1.1.1 Governance of adaptation within transaction cost analysis

A key theory concerned with the governance of adaptation within relationships is transaction cost analysis. Transaction cost analysis is a multi-disciplinary theory that embraces economics, organizational theory and law (Williamson 1975, 1985). Ghosh and John (1999, p.131) emphasised its importance in the context of studies on inter-firm relationships in management and marketing sciences by describing it as “the dominant paradigm for analyzing issues in several areas of marketing, including inter-firm relationships, channel structure, foreign market entry, and so on”,

During the last thirty years transaction cost analysis has been the subject of considerable academic enquiry. Evidence of its importance as a research paradigm can be seen in the wide range of different disciplines including sociology (e.g., Granovetter, 1985), political science (e.g., Moe, 1991), organization theory (e.g., Barney and Hesterly, 1996), contract law (e.g., Palay, 1984), business strategy (e.g., Hennart, 1988), corporate finance (e.g., Smith and Schnucker, 1994), and marketing (e.g., Anderson, 1985) to which it has been applied. It has been located by Oliver Williamson, the foremost proponent of the theory, as part of the New Institutional Economics paradigm (Williamson, 1985).

Coase (1937), in his seminal work, “The Nature of the Firm” (1937), provided the foundation for all subsequent work on Transaction Cost Analysis. Coase sought to explain the boundaries of the firm in order to explain why some activities are organized via the firm and other activities via the market. Coase again explains that the choice is determined by the amount of transaction costs associated with the activity. Coase did not provide a framework for calculating the transaction costs that might be present in a given situation. Therefore, the difficulty of directly measuring transaction costs resulted in Coase’s 1937 article being “much cited and little used” (Coase, 1972 p. 67).

It was not until Williamson (1975, 1985) put forward a framework for assessing the transaction costs that would be associated with any economic activity, that the idea of transaction costs began to take on a greater importance within economic and organizational theory. The central achievement of Williamson was to put forward a theory on transaction costs consisting of a number of refutable propositions about the choice of organizational governance that were subsequently

capable of being empirically tested. This is referred to by Williamson as the transaction cost “heuristic” (Williamson, 1985, p. 150).

Transaction Cost Analysis provides a means of testing the relative economic efficiency of carrying out transactions by alternative organizational forms. Therefore, at its core, transaction cost analysis focuses on “transactions and the costs that attend completing transactions by one institutional mode rather than another” (Williamson, 1975, pp. 1-2). According to Williamson (1975), transaction costs are the costs of running a system; they include:

Ex ante costs: These refer to the cost of drafting, negotiating and safeguarding a complex document.

Ex post costs: Costs of monitoring the performance and enforcing the behaviour of the parties to the contract are referred to as *ex post* costs.

It is argued by Williamson (1975, 1985, 1991) that economic activity will be handled in such a way as to minimize the transaction costs involved in carrying it out. This is captured in what Williamson (1991, p. 277) called the “discriminating alignment hypothesis,” which holds that transactions, which differ in their attributes, are aligned with the organizational form which is the most efficient means by which to carry it out. This process of choosing the most efficient means of carrying out the transaction is achieved in a discriminating (i.e., transaction cost minimising or economising) way. Its working hypothesis, as expressed by Williamson (1991, p. 79), is that economic organization is really an effort to “align transactions, which differ in their attributes, with governance structures, which differ in their costs and competencies, in a discriminating (mainly, transaction cost economizing) way.”

The term governance traditionally has been defined very broadly as a “mode of organizing transactions” (Williamson and Ouchi, 1981). A more precise delineation of the concept is offered by Palay (1984, p. 265), who defines it as “a shorthand expression for the institutional framework in which contracts are initiated, negotiated, monitored, adapted, and terminated.” Stated differently, governance is a multidimensional phenomenon, encompassing the initiation, termination and ongoing relationship maintenance between a set of parties.

Williamson argues that it becomes necessary for parties to make “an assessment of alternative organizational modes” (Williamson, 1975, p.23) between the different governance structures in which the relative efficiency of each form of governance will be considered in a rational manner and determined by a matching between the underlying dimensions of the transaction and the governance structure through a process of discriminating alignment.

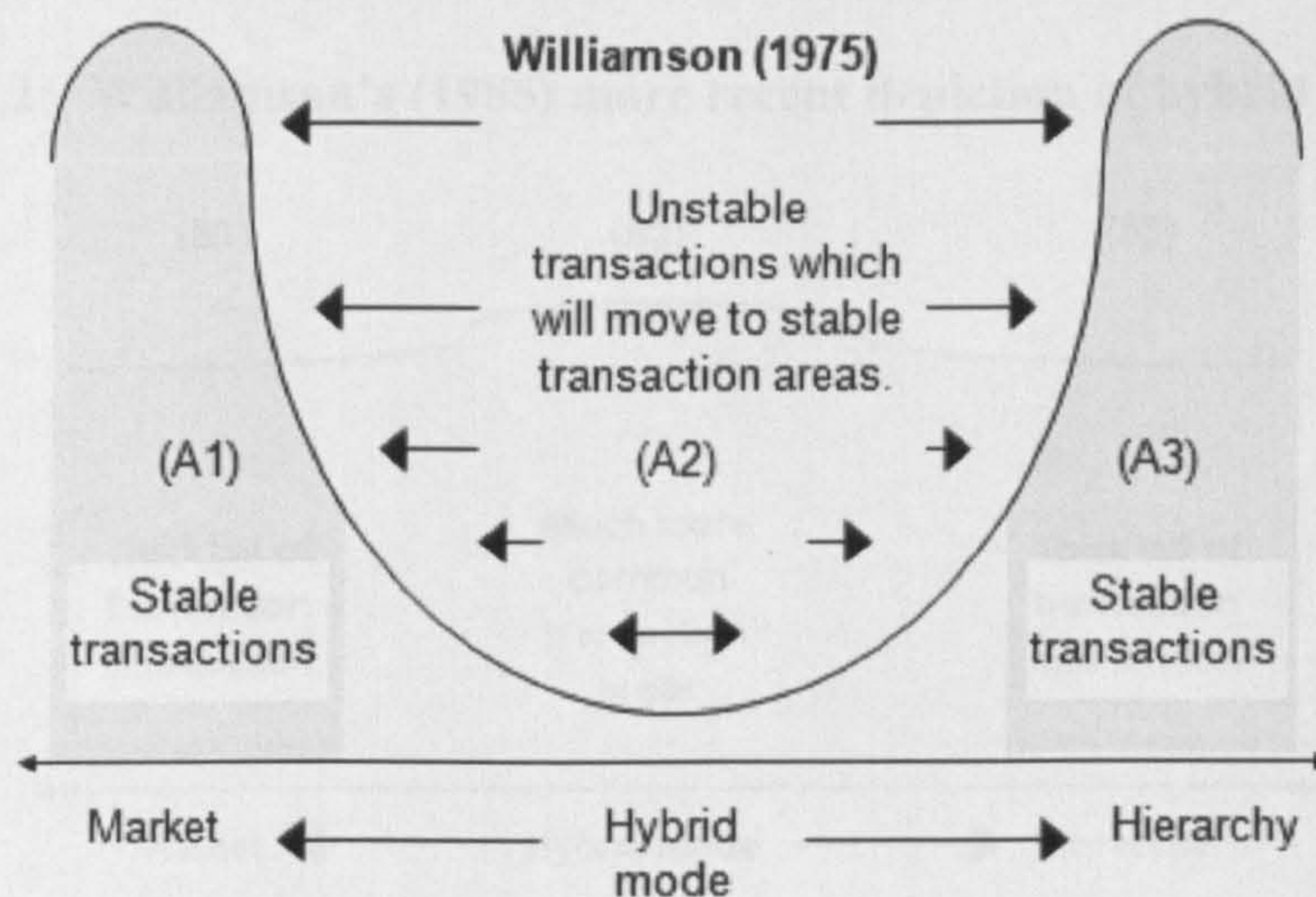
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Its working hypothesis, as expressed by Williamson (1991b, p.79), is that economic organization is really an effort to “align transactions, which differ in their attributes, with governance structures, which differ in their costs and competencies, in a discriminating (mainly, transaction cost economizing) way.” Simply put, transaction cost analysis tries to explain how trading partners choose, from the set of feasible institutional alternatives.

Figure A1.1: The original depiction of hybrid governance by Williamson (1975)



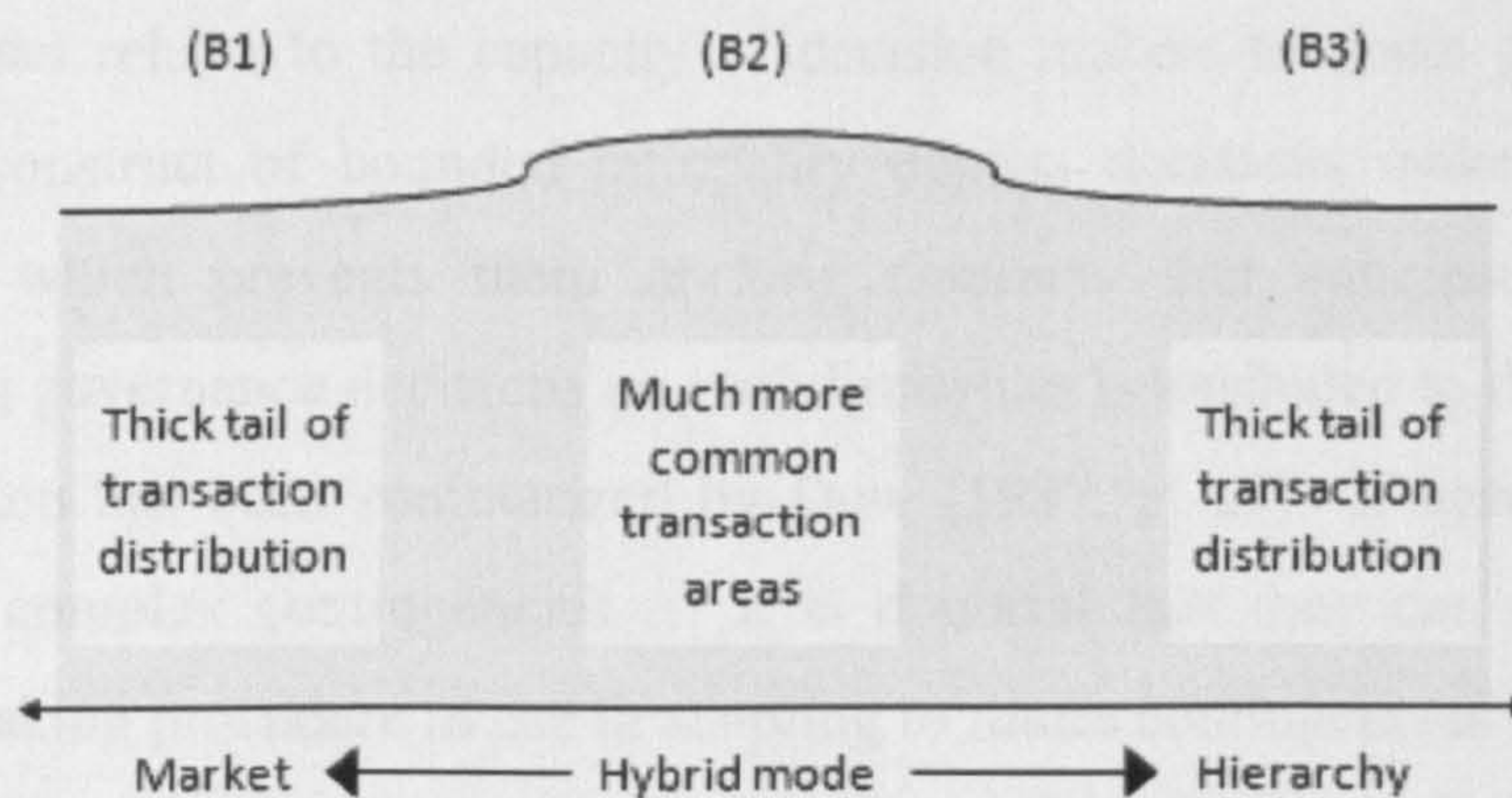
As illustrated in Figure A1.1, in his early work of 1975, Williamson suggested that the choice of governance was between markets or hierarchies. Williamson (1975) recognised that some forms of organizational arrangements, which he classified as hybrid or non-standard contractual arrangements could not be classified as either markets or hierarchies. However, since he argued that transactions falling into this category were very difficult to organize and hence were unstable

he consequently pointed out that a bimodal distribution represents a more accurate description i.e., transactions should fall into either markets or hierarchies.

In more recent years, Williamson (1985, pp. 83-84), as illustrated in Figure A1.2, has revised his views and posits that transactions in the “middle range of transactions are much more common”, Organizational forms that cannot be classified as either markets or hierarchies are referred to as hybrid forms of governance.

Studies into hybrid governance forms have embraced a number of different areas of enquiry. Hybrid modes of governance include joint ventures (Klein *et al.*, 1990), relational contracting (Goldberg, 1980), and bilateral governance (Heide and John, 1990). Oxley (1999) in particular examines the proliferation of different governance modes in alliances, creating a market-hierarchy spectrum that ranges from simple unilateral contractual agreements (e.g., one-sided licensing agreements, long-term supply contracts and R&D contracts), to bilateral contractual agreements (e.g., technology sharing or cross-licensing agreements, joint research agreements) to equity-based alliances (i.e., joint ventures). Williamson (1985) restricts his consideration of hybrid governance to long term contracts and credible commitments, which he describes as private-ordering arrangements because they have been put in place as a result of an agreement between contractual parties.

Figure A1.2: Williamson’s (1985) more recent depiction of hybrid governance



Although TCA has enjoyed considerable popularity it has also attracted wide-ranging criticism. These criticisms can be summarized as follows.

A core criticism relates to the process of governance decisions within transaction cost analysis. Transaction cost analysis is concerned with the governance of individual transactions and is concerned with the position of the party making a choice of governance in isolation. Essentially, the approach adopted by TCA is to suggest that transaction costs should be minimized by adopting a

choice of governance that is most efficient for the actual transaction being considered. TCA stresses the minimisation of transaction costs. This approach also means that prior transactions and subsequent transactions are not considered. Accordingly, transactions are regarded in isolation without any consideration being shown to the overall benefits and gains that may stem from them to a particular relationship or wider network of relationships. Since TCA focuses solely on the position of the party making a choice of governance, rather than on a relationship or network, it has been criticized for not including these elements when choices of governance are made (Zajac and Olsen, 1993).

A related criticism is that TCA theory assumes a static perspective for decision makers. This depicts the future as fixed and unchanging. Essentially, Williamson (1975) proposes that decisions are taken based on individual transactions from a perspective that is fixed and unchanging. An alternative advocated by critics of the static perspective is the dynamic perspective (Noorderhaven, 1996). This approach would see decisions made in the context of a changing world in which both prior and subsequent transactions would also be taken into account. Accordingly, not only historical but also anticipated events would be considered in determining choices of governance. Williamson's viewpoint of exchange relationships over-emphasises the analysis of governance structures of a transaction and neglects the potential gains to relationships that can exist if a dynamic rather than static approach is adopted (Zajac and Olsen, 1993).

A secondary criticism relates to the capacity of decision makers to make governance decisions. Within TCA, the construct of bounded rationality depicts decisions makers as having limited cognitive capacity which prevents them drafting contracts that anticipate every eventuality. However, in making governance decisions no such limitation is attributed to decision makers. This apparent contradiction has been summarized by Dow (1987, p. 27) "if agents cannot cope with contracts featuring complex contingencies ... it is doubtful that they can select in advance an efficient decision making procedure to use in adapting to future contingencies",

Within TCA the choice of governance decisions is presented as a binary-type decision, as an "either or" proposition which implies that only one form of governance exists at any one time. This aspect of TCA has been criticized by Bradach and Eccles (1989) and Heide (2003) who point out that more than one form of governance can exist contemporaneously. For example, it is possible for a party to have governance systems based on markets as well as on hierarchical systems at the same time.

A fundamental issue within transaction cost analysis is the lack of consensus in defining many of

the key constructs within the paradigm. This problem has arisen because Williamson (1975, 1985), in setting out the core constructs of TCA, did not provide precise definitions. Accordingly, when authors have operationalised these constructs there has been considerable divergence in their interpretation of the underlying construct's key elements. The lack of consistent definitions has been commented on in meta-analyses of transaction cost analysis. David and Han (2003, p.54) concluded that "the terms "asset specificity" and "uncertainty" do not provide shared and specific understandings- these terms, as we found, mean many different things to different people." In the case of "asset specificity", they found "27 different measures of asset specificity", The lack of consistency in defining the key constructs has resulted in empirical findings that are sometimes ambiguous or contradictory. This is seen most clearly in research into the effect of uncertainty on decisions regarding vertical integration where contradictory findings have arisen which some authors attribute to the different operationalisations of the construct (Rindfleisch and Heide, 1997).

Another criticism made against transaction cost analysis relates to the central behavioural construct of opportunism. Within the paradigm, opportunism is treated as a fixed character trait that is always potentially present (Williamson, 1975). It is because of the omnipresence of opportunism that governance structures need to be in place that offer hierarchical control mechanism such as fiat, monitoring, and incentives (Hart, 1990). However, critics of transaction cost analysis argue that it is wrong to present opportunism as a fixed assumption since it is an unrealistic depiction of human nature in the sense that other forms of behaviour (e.g., trust) are not incorporated within the model (Granovetter, 1985) . This criticism was summarized by Milgrom and Roberts (1992, p.42) when they described Williamson's treatment of opportunism in the following way: " Williamson turns a relatively common yet unexplained phenomenon into a behavioural assumption that has been described as an "extreme caricature", even by those who have made important contributions to advance the cause of TCE."

The prescriptions of TCA which emphasise that hierarchical governance is superior because of its greater capacity for the exercise of authority have been disputed by some critics (Ghoshal and Moran, 1996). Therefore, the rationale of the TCA prescriptions is questioned. The criticisms levelled against Williamson's arguments are two-fold. Firstly, it is argued that employment contracts (which form the basis of hierarchical authority within firms) do not always achieve their stated aims. This is because the use of authority can be counter-productive in the sense that the use of authority can inspire opportunism rather than co-ordination and co-operation. Additionally, Ghoshal and Moran show that the use of authority does not always lead to adaptation occurring as he describes it. This is the use of authority does not always imply that instructions will be carried

out (Ghoshal and Moran, 1996). In particular, the arguments relating to fiat have been heavily criticised on the grounds that fiat can be a blunt instrument in the sense that by focusing attention on a small number of activities that are capable of observation, measurement and evaluation, fiat will may give rise to opportunism by enhancing any negative feelings, such as feelings of bias or unfairness towards the organisation. Furthermore, Ghoshal and Moran (1996) go on to illustrate that there are numerous studies that show that fiat can lead to negative effects on the workforce in the sense of reduced commitment, less co-operation and a need for increased supervision.

In the two Sections, an overview of adaptation and the related governance issues, from the perspective of transaction cost analysis is presented.

A1.1.2 Adaptation investments within transaction cost analysis

Certain key elements can be seen in Williamson's analysis of adaptation. The first, and something that it is crucial in helping to understand his analysis of adaptation, is that his analysis of the adaptive capacity of organizations rests on legal principles. Williamson states that his analysis of adaptation is seen through "the lens of contract" by which he means the theory of incomplete contracts.

Adaptation within transaction cost analysis is depicted as a problem because of incomplete contracts. Incomplete contracts arise because contracts are crafted by individuals with limited cognitive capacity, encapsulated by Williamson within the construct of bounded rationality which depicts individuals as having bounds on rationality, according to which they are intendedly rational but only limitedly so (Simon, 1957). The effect of bounded rationality prevents individuals from anticipating all eventualities that may arise during the execution stage of a contract.

With bounded rationality, it becomes impossible to deal with complexity through contingent claims contracts, i.e., a contract that covers every eventuality that might arise. Williamson (1975) points out that not only are changing market circumstances impossibly complex to envisage, appropriate adaptations cannot be established with any confidence *ex ante*. This leads to the problem of incomplete contracts.

Accordingly, incomplete contracting occurs when complete contracts are not designable because of the cognitive boundaries of economic agents, depicted as bounded rationality, and because of the difficulties in forecasting all the relevant future events, depicted as uncertainty. To the extent that the relevant contingencies are too numerous or unpredictable to be specified *ex ante* in a contract, an adaptation problem exists (Rubin, 1990).

The problem of incomplete contracts creates an adaptation problem within transaction cost analysis. It can be summarised in the following way. As uncertainty arises, different expectations and goals are likely to emerge. This is likely to manifest itself in requests for adaptations to occur. Williamson (1991a) typifies such changes of circumstances as “disturbances”, The effect of the “disturbances” is to increase transaction costs as the parties are forced into negotiations as a means of dealing with the unanticipated event. According to the logic of transaction cost analysis, as transaction costs increase within a relationship, there is an increased tendency for vertical integration to occur. In Chapter B1 it is shown that the focus of existing research is on examining the proposition that links uncertainty and vertical integration.

This proposition garners only partial support from the transaction cost analysis studies included in our review. Specifically, though some researchers find support for the anticipated effects of environmental uncertainty, others find no effects of environmental uncertainty, and still others find that some types of environmental uncertainty actually act as a disincentive to vertical integration.

The effect of technological uncertainty on adaptation investments has also received limited amounts of reported enquiry. It has been argued that decisions to invest in adaptation investments are likely to be less likely in environments characterised by technological uncertainty, since there is an increased likelihood that obsolescence may cause the asset to become less valuable or even worthless (Walker and Weber, 1984; Stump, 1995).

It has been possible to identify two papers that have considered the effect of technological uncertainty on decisions to make adaptation investments. Stump and Heide (1996) Bensaou and Anderson (1999) proposed a negative relationship between technological uncertainty and adaptation investments (based on the arguments surrounding obsolescence outlines in the previous paragraph) but the empirical results found there was actually an increased level of investment in such environments.

Additionally, Williamson (1975) also argues that the change in circumstances, which he describes as disturbances, creates situations in which opportunism could arise in the sense that a party may try to exploit the vulnerability of the other party giving rise to opportunism. This would arise in situations in which the party attempting to make adaptations has a dependency relationship based on transaction specific assets. This could allow a “hold-up” situation to arise in which the vulnerabilities of the party were taken advantage of. The literature review in Chapter B1 examined existing literature linking opportunism and adaptation investments and found a single reported paper (Parkhe, 1993) which supported the postulated negative effect.

It can be seen from the foregoing overview of the effects of uncertainty and opportunism that

although transaction cost analysis provides theoretical arguments about their effect on adaptation investments there is a conspicuous absence of reported papers which have empirically examined the linkages. This study will provide evidence of uncertainty and opportunism by specifically testing their effects on adaptation investments.

A1.1.3 The governance of adaptation within transaction cost analysis

The crucial issue that stems from the adaptation problems outlined in the previous Section is the need to have a governance structure in place that is capable of the double objectives of allowing for adaptation to take place and which is also capable of safeguarding against the hazards of maladaptation. Williamson (1975, 1985, 1991) argues that this necessitates a choice of governance structure which will meet these two objectives.

Williamson (2008, p.8) explains the problem in the following way: "If, however, boundedly rational parties also have the capacity to look ahead, then potential maladaptations (i.e., opportunism) can be relieved by crafting mechanisms *ex ante* to deal with unanticipated disturbances as they arise, the effect of which is to facilitate adaptation, preserve continuity and realize mutual gain during contract implementation", In choosing the appropriate form of governance, it is necessary that the choice of governance can both be adaptive and at the same time is capable of preventing maladaptation.

Williamson (2002, p.174) argues that "governance structures have therefore to be designed to complete contracts for parties who will be confronted with the need to adapt to unanticipated disturbances that arise by reason of gaps, errors and omissions in the original contract",

Williamson (1985, p.60) argues that it is "imperative that the parties devise a machinery to 'work things out'-since contractual gaps will be larger and the occasions for sequential adaptations will increase in number and importance as the degree of uncertainty increases. Also, and relatedly, concerns over the behavioural uncertainties referred to above now intrude", For Williamson, governance structures are established that "accommodate and/or make express provision for bounds on rationality and the hazards of opportunism" (Williamson, 1985, p.42).

Williamson (1975, 1985, 1991a) describes adaptation under different governance structures. Adaptation within markets is described as "autonomous adaptation", It is achieved, according to Williamson (1985), as a result of the price mechanism (i.e., the interplay of supply and demand). It is regarded as being autonomous because it is not achieved as a consequence of co-coordinated actions and is deemed to arise automatically as a result of the interaction of supply and demand

within the marketplace.

Adaptation within organizations is described as “purposive adaptation” (Williamson, 1985) and refers to the need for all organizations to adapt to the continuously fluctuating environment in which they find themselves. This type of adaptation refers to “the re-adjustment of processes” (Williamson, 1996) within organizations and is carried out as a result of the exercise of authority in the form of an employment contract – an “employment relation” (Barnard, 1938; p.334) within the organization. This is described by Williamson (1991a, 1996) as the most elastic and adaptive type of governance structure. This is because adaptation can be facilitated by fiat. He draws on Barnard’s concept of “employment relation” to explain how this is affected.

In his treatment of hybrid governance, Williamson (1996) does not accept that trust, which he sees as an essentially personal matter that is incapable of influencing business, is capable of representing a form of governance. Accordingly, the large body of work on trust that can be found in research paradigms such as the IMP school and in relational marketing was not integrated into transaction cost theory by Williamson (1975, 1985).

Williamson’s analysis of adaptation under hybrid forms of governance is limited to a consideration of long-term contractual arrangements. Fundamentally, Williamson (1991a) considers that since it is necessary to obtain the agreement of both parties in the relationship before any adaptation can be achieved, there is a limit its effectiveness as a form of governance. This is because, according to the arguments of Williamson (1991a), agreement to make adaptations is unlikely to be forthcoming in the face of severe disturbances.

The logic of Williamson’s argument has been criticised for failing to recognise that purposive effects can also be achieved between independent firms (Heide and John, 1992). The basis of this particular criticism rests on sociological and organizational literature which has argued that close ties between independent firms can replicate the purposive effects of hierarchies (Stinchcombe, 1985; Granovetter, 1985).

In view of Williamson’s analysis of hybrid governance, Williamson does not recognise the use of relational norms as a form of governance. In his early work (Williamson, 1975) did consider the possibility of variations in exchange norms. The role of industry norms as discussed by Macaulay (1963) is recognized explicitly in the original analysis. Williamson (1975, p. 26) dimensionalized norms along a continuum running from opportunism to stewardship and offered some hints that those differences in norms would have an impact on the structure of relations. Unfortunately, this early treatment has been ignored in the subsequent extensions of the original framework (Williamson, 1985, 1990, 1991a).

Norms have been defined as patterns of accepted and expected sentiments and behaviour shared by members of an exchange system that have the force of a social obligation or pressure (Axelrod, 1986; Bendor and Mookherjee, 1990; Gibbs, 1981; Macneil, 1983; Thibaut, 1968; Thibaut and Kelley, 1959). Norms have been shown to be a social mechanism that will “simulate the operation of hierarchies” (Stinchcombe, 1985).

In both the political economy framework (Stern and Reve, 1980) and the IMP model (Håkansson, 1982; Metcalf, Freer and Krishnan, 1992), co-operation and relational closeness have been put forward as an antecedent to decisions to make adaptation investments. Therefore, since relational norms have been put forward as something that encourages co-operative behaviour Cannon and Perreault (1999) and relational closeness (Dwyer *et al.*, 1987), it is reasonable to anticipate a strong correlation between the presence of relational norms and decisions to make adaptation investments. The existing research which has tested the direct effect of relational norms on decisions to make adaptation investments is now considered.

Therefore, although Cannon and Perreault (1999) put forward some evidence linking co-operative norms with decisions to make adaptation investments, several areas remain unclear. The first is the exact role that particular norms play in such decisions. The norms of information exchange, solidarity and flexibility are of particular relevance here since the effect of these norms was not tested specifically by Lusch and Brown (1996). The second aspect that is in need of some clarification is whether relational norms have the same positive effect on decisions to make both technological and non-technological adaptation investments.

It has not been possible to identify any research which has tested the interaction effect on adaptation investments of relational norms on uncertainty. However, some guidance on the likely effects can be found in a study by Noordewier *et al.* (1990). In this study significant evidence was found that performance was enhanced by the effect of relational elements on uncertainty. The authors used a relational syndrome of norms so it is not possible to identify the impact of individual norms on the outcomes. Performance in this paper was related to the costs relating to purchase and acquisition of spare parts. The interaction effect on adaptation investments of relational norms on uncertainty has not been specifically tested in the literature and represent an identifiable gap in our understanding.

Several papers have investigated the effects of relational norms on opportunism. Gundlach *et al.* (1995) hypothesized that opportunism would be negatively related to the existence of relational norms. They tested the effects of a syndrome of relational norms made up of solidarity, mutuality, flexibility, role integrity, and harmonization of conflict based on previous conceptualisations in the literature on opportunism. The authors found strong support for the hypothesis. Achrol and

Gundlach (1999) applied the operationalisation of relational norms developed by Gundlach *et al.* (1995) in a computer simulation study. Just as in the Gundlach *et al.* (1995) study, a strong negative correlation between the two constructs was reported. The findings are of limited generalisability since the data were obtained by means of a computer simulation involving respondents who did not have direct personal experience of buyer –seller relationships.

Additional findings that support a strong negative correlation between the presence of relational norms and opportunism include Brown *et al.* (2000), who used a research setting of vertical relationships within the hotel sector in North America. The authors found strong positive support for their hypothesis. The relational norms were modelled as the norms of preservation of the relationship, role integrity and harmonization of conflict. The authors state that they have adopted these three norms, which are three of the five relational norms depicted by Macneil (1980). No explanation is offered as to why the other two norms are not included in the model. In presenting these norms as a syndrome of norms (Brown *et al.*, 2000) it is not possible to determine what the influence, if any, of the individual norms was in the study. Lai *et al.* (2005) carried out a survey of 131 Taiwanese purchasing managers in the ICT sector, using a syndrome of three relational norms made up of information exchange, solidarity and flexibility. The syndrome was adopted from Heide and John (1992). Relational norms were found to reduce opportunism.

Heide and John (1992) also considered the interaction effect on supplier decisions of relational norms and adaptation investments. The authors found significant support for the proposition when relational elements were present at a high level but not at a low level. The relational elements were made up of a syndrome of norms made up of information exchange, solidarity and flexibility. The paper is limited in the sense that it does not include results for the individual norms but the findings are of importance in the sense that they show that relational norms can still influence decision control even when a situation of vulnerability created by adaptation investments is in existence. However, the paper does not specifically test the interaction effect of relational norms and opportunism on investment decisions. This represents an important research gap.

Rokkan *et al.* (2003) specifically tested the interaction effect on opportunism of the norm of solidarity on adaptation investments. They found significant support for the proposition that when the norm of solidarity is strong the effect of making adaptation investments is to decrease opportunism; they also found that where the norm was weak, there was actually an increase in opportunism. Vazquez and Iglesias (2007) tested the effect on opportunism of the interaction of relational norms and credible commitments. They found significant support for the proposition that where relational norms are present in a relationship, adaptation investments by a distributor will not

lead to more opportunism when the other party is a supplier. However, they did not find support where the investing party is a supplier and the other party is a distributor. The authors rationalise the different findings because the focal area of the study was the Spanish processed food market where distributors face extremely high levels of competition and there is a continuous need to maintain pressure on suppliers in order to stay competitive. The paper relies on a syndrome of different relational norms without setting out results for individual norms.

A1.2 STUDY AIM AND OBJECTIVES

The aim of this study is to establish a management framework that will inform those managing marketing relationships about their how choice of governance will impact on adaptation investment. This will be seen both in terms of the extent to which the associated hazards are controlled as well as in the means by which adaptation investments are managed. This has largely been achieved through:

- a) Building a theoretically grounded model that is capable of incorporating relational norms, uncertainty and opportunism and their disparate effects on adaptation. Moreover, the model should be capable of testing for the effects on adaptation of the interaction of relational norms with uncertainty and opportunism.
- b) Operationalisation (including acquisition and purification) of the model constructs.
- c) Analysing the acquired data by using suitable analytical tools.
- d) Putting forward theoretical and managerial suggestions based on the empirical results.
- e) In meeting this study aim and objectives, the author will make significant contributions to the advancement of theoretical knowledge and managerial practice. The theoretical contributions are based on being the first study to:
 - i. Investigate the higher order construct of relational norms on adaptation investments.
 - ii. Investigate the effect of uncertainty and opportunism on the higher order construct of adaptation.
 - iii. To provide an overall insight into the effectiveness of relational norms as a form of governance for adaptation investments.

Further contributions arise from the development of two additional theoretically grounded models comprising the lower orders constructs of the two higher order constructs of relational norms and

adaptation. This will provide further insights into the impact associated with the lower order constructs.

Based on the insights gained from the three theoretical models, the management of adaptation investments within relationships will be enhanced through an improved understanding of the role of relational norms within marketing relationships. Managers will be provided with a clear framework that can be used to optimise the management of adaptation investment within dyads.

A1.3 RESEARCH DESIGN AND STRUCTURE OF THE THESIS

The main phases of the adopted research method broadly follow the research design process proposed by Sekaran (2002) . The summary of the research process is outlined below and is also summarised in Figure A1.3. This process provides a logical and manageable framework that provides a structure which has guided the author from the earliest stages of this study. This started with initial activities designed to identify gaps in the extant literature, through the development of the research instrument to the collection of data and subsequent analysis and evaluation in order to support or refute the hypotheses. A detailed explanation of the review methodology is included within Chapters C2, C3 and C4. To provide the reader with an overview of the process, the key steps are briefly discussed in the remainder of this Section.

Step 1 - In order to establish the state of extant literature on the chosen management area, the author began a literature review. Electronic databases were the primary and principal search tool together with books and academic journals in which research examining adaptation investments had been reported were identified. The combination of empirical and conceptual research assisted the author in understanding the theories that underpinned this area of management activity together with an appreciation of the issues facing decision-makers in marketing dyads. It also highlighted where limited, or no research had taken place and where researchers had called for further research to be carried out to test emerging theories.

Once the literature review had been completed, the author identified that adaptation investments could be governed by a range of different governance structures. Additionally, the potential hazards associated with adaptation investments were also identified. The literature review led the author to the conclusion that relational norms as a governance structure, and the hazards of opportunism and uncertainty to adaptation investment, had not been fully explored.

Step 2- As a result, an initial conceptual model containing the constructs of relevance and the hypotheses was produced- see Chapter C1.1

Step 3 – Having identified the research constructs, a further detailed literature review was undertaken to identify how these had been operationalised in the extant literature. This required an examination of the manner in which constructs had been operationalised, especially the context of existing studies containing the operationalisations, which led to a pool of indicators being developed for each of the constructs.

Step 4 – The views of industry professionals were then sought in order to validate the choice of indicators and to provide information and suggestions about how these should be modified and/or contextualised to make them sector specific.

Step 5 – As a result of the feedback received, a pool of indicators was established and incorporated into an initial draft of the questionnaire that was used to collect the data.

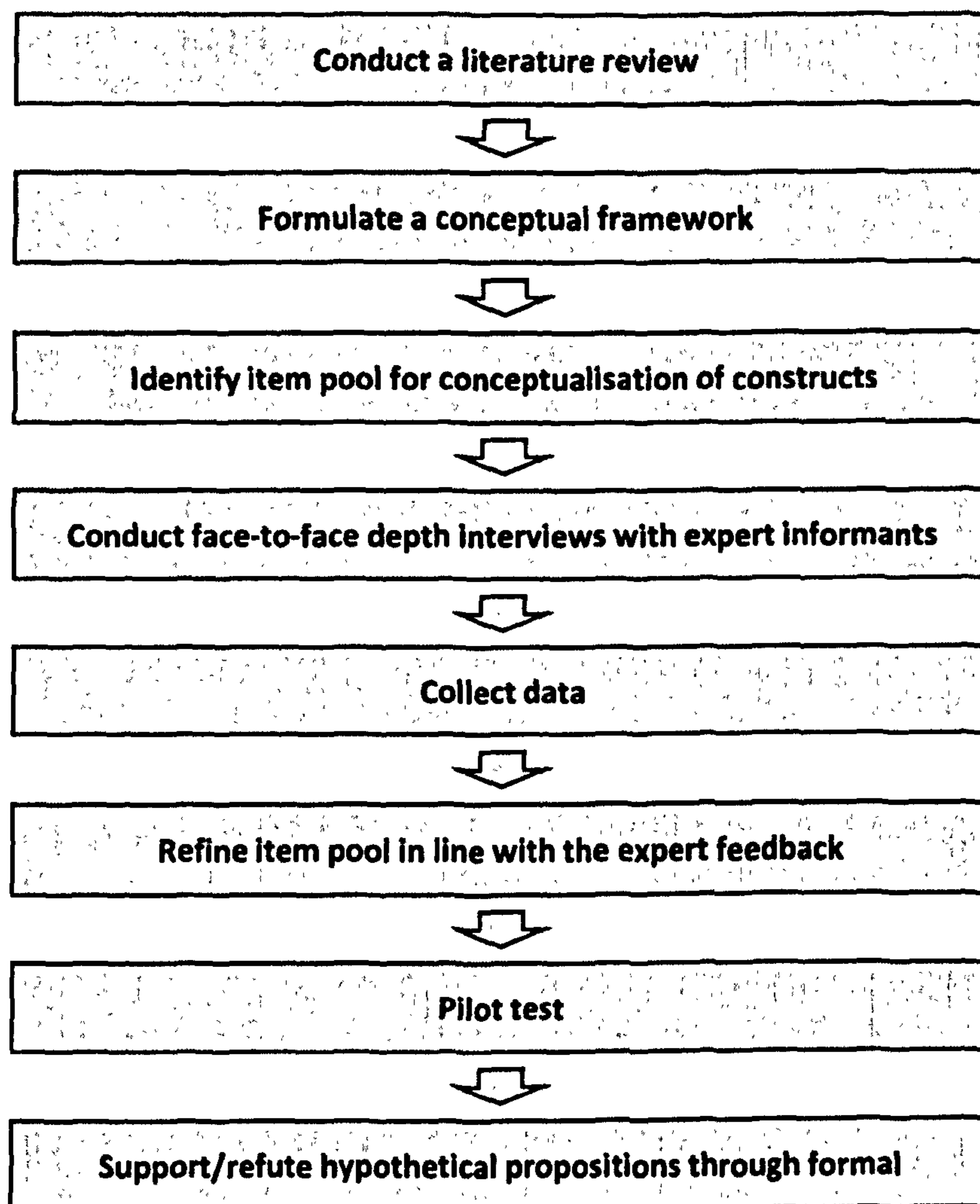
Step 6 – A draft questionnaire was tested on respondents who were actively involved in the management of marketing relationships in the UK automotive sector that involved adaptation investment decisions. Participants were invited to comment on their understanding and interpretation of the statements in the draft questionnaire as well as issues such as grammar and layout.

Step 7 – As a result of feedback testing from the pilot stage, additional modifications were made to the questionnaire. A web-based survey company was identified that would host the questionnaire during the administration of the data collection process.

Step 8 – The data collection process was targeted at a research population that comprised decision-makers in the UK Automotive sector who were involved in decisions to make adaptation investments. The telephone interview survey resulted in 186 usable replies.

Step 9 – Upon receipt of the questionnaires, the responses were transferred to SPSS and the data inputs were subsequently checked for errors. The higher level and lower level operational models and the hypothesised pathways were tested using the Partial Least Squares multivariate statistical tool.

Figure A1.3: Flow diagram outlining the research process



Source: Sekaran, U. (2002) *Research Methods for Business: A skill Building Approach*. 4th edition. New York: John Wiley and Sons Inc.

A1.4 LIMITATIONS OF THIS STUDY

Although considerable effort has been made to ensure the robustness of the study, there are a number of limitations that must be highlighted:

Since this research focused on buyer-seller relationships, ideally the investigation would have been based on responses from both parties. It is thus acknowledged as an inherent limitation that the results are based on the respondents' perceptions on the focal constructs and are affected by the related subjectivity of their views.

A logical and evidence based attempt has been made in building and testing a model that deals with key aspects of adaptation within buyer-seller relationships. However, relationship formation is a dynamic and process-based phenomenon where many factors play important roles and it is very

difficult to separate and represent the key critical factors in order to build a theoretical/conceptual model at the necessary level of abstraction. This is even more so the case in a research such as this, where time and parsimony were to be considered as modelling constraints. Although efforts based on extant literature have been made to develop a theoretically grounded framework, the inevitable level of abstraction is considered to be a limitation.

In-depth interviews and qualitative data analysis have been suggested to be most appropriate tools for data collection and analysis in complex and largely unknown investigations (Eisenhardt, 1989) such as adaptation and relational norms between large companies. The proposed research utilised statistical generalisation based on quantitative data analysis method that can be considered as a limitation.

As the study involved an element of temporal investigation a more suitable research approach would have been longitudinal rather than cross-Sectional (Miller and Friesen, 1982). A longitudinal approach would have afforded a 'dynamic' treatment of time rather than the current 'static' treatment. This would have been highly appropriate in highlighting temporal influences in finer detail (Pettigrew, 1985). However due to research deadlines, time was treated as a proxy variable by considering it in its absolute sense i.e., length of relationship. Furthermore, as the proposed field research was conducted within a defined time frame (over a three month period in 2006), only an epoch of a relationship was the source for the drawn conclusions. Inter-firm relationships are fluid and dynamic which can change over time. Therefore, cross-Sectional studies such as the proposed investigation, which only look at the past and the present and not the future, provide only a snapshot of the relationship.

Only companies operating in the components producing sector of the motor industry have been included in the research sample. Given that they represent only one, very specific facet of the market and a particular competitive environment, care should be exercised when generalising the results.

A1.5 STRUCTURE OF THE THESIS

This thesis is divided into five parts (Parts A to E) each of which is subdivided into one or more chapter.

Part A: Introduction: Part A comprises a single chapter (Chapter A1) which presents the general research background, offers an overview of information in buyer-seller relationships and a discussion of the research setting. The aim and objectives of the study as well as its limitations are outlined.

Part B: Literature Review: The second part of the thesis is devoted to the review of the relevant literature. It is divided into two parts. Chapter B1 – This chapter investigates adaptation investments within transaction cost analysis with a particular focus on uncertainty and opportunism which are depicted by Williamson as having a negative effect on adaptation. Chapter B2- This chapter focuses on investigating adaptation under different governance structures and in particular under relational norms.

Part C: Research Methodology: The third part of the thesis describes and discusses the research methods and tools employed in the current investigation. It contains the following four chapters. Chapter C1 – Conceptual Framework – This chapter describes the process involved in the development of a theoretically grounded model. Furthermore the research hypotheses (modular pathways) are presented. Chapter C2- Research Methodology (I) – The purpose of the study, type of investigation, extent of research interference, study setting, time horizon and data collection elements of the research design are debated in this chapter. Chapter C3 – Research Methodology (II) – This chapter discusses the measurements and measures and the development process of the research instrument. Chapter C4 – Research Methodology (III) – The final chapter of the methodology part includes debate on the sampling design, unit of analysis and missing data analysis. The chapter concludes with a debate on the adopted error minimisation methods and the analytical approach.

Part D: Data Analysis: The penultimate part of the thesis is devoted to the analysis of the collected data. The following two chapters are included in this Section. Chapter D1 – Measurement Accuracy Analysis – Tests related to the reliability and validity of the research constructs are discussed in the first chapter of the data analysis part. Chapter D2 – Research Model Fit and Hypotheses Testing – This chapter describes the steps of the analytical process for evaluating the proposed model fit and reports on tests examining the hypothesised second order structure. Additionally, it provides information concerning the goodness of fit of the research model and the hypothesised functional pathways.

Part E: Conclusions and Debate: The final part of the thesis comprises a single chapter (Chapter E1). It comments on the results and their relevance to the stated research aim and objectives. In addition, it offers a debate in terms of the results, placing them within the relevant body of

literature. Normative guidelines, the contributions of the research and suggestions/recommendations for future research are also presented here.

PART B

LITERATURE REVIEW

This Section comprises two chapters:

- ❖ *Chapter B1: Adaptation investments and transaction cost analysis***
- ❖ *Chapter B2: Governance of adaptation investments***

CHAPTER B1: ADAPTATION INVESTMENTS AND TRANSACTION COST ANALYSIS

The purpose of this Chapter is to investigate the literature within transaction cost analysis relating to the creation of adaptation investments. This Section will begin by examining transaction specific assets within transaction cost analysis. It is shown that these assets have a specific explanatory role within the transaction cost analysis heuristic. However, empirical investigations into the antecedents of their existence are lacking. In Chapter A it was shown that uncertainty and opportunism are identified as two factors that have a negative influence on the process of adaptation. The effect of uncertainty and opportunism on adaptation investments are considered in Sections B1.2 and B1.3 of this chapter. The chapter concludes with a list of conclusions setting out identified research gaps in Section B1.4.

B1.1 ADAPTATION INVESTMENTS WITHIN THE TRANSACTION COST ANALYSIS AND RELATIONAL MARKETING PARADIGMS

The practice of making investments in assets that are of specific use to a particular relationship has attracted the attention of scholars within two prominent research paradigms: Transaction Cost Analysis and Relational Marketing. Within transaction cost analysis, these assets are variously described as “transaction specific assets” (Williamson, 1975, 1985), “idiosyncratic investments” (Anderson and Weitz, 1992) and “buyer specific investments” (Heide, 1990; Stump and Heide, 1996; Rokkan *et al.*, 2003). Within Transaction Cost Analysis, transaction specific assets are investments which are specific (that is, customized or idiosyncratic) to a particular relationship. Williamson (1985, p.55) defines transaction specific assets as ““durable investments that are undertaken in support of particular transactions””,

Within Relational Marketing literature, investments in assets which are specific to a particular relationship are referred to as adaptations since they represent substantial commitments to relationships that result in modifications to the underlying relationships. Adaptation in the context of relational marketing research refers to the extent to which the buyer and seller make substantial investments in the relationship (Ford, 1980). When a party commits resources to the relationship, the party making the investment has adapted to the needs of the other party (IMP Group, 1982).

A number of common characteristics can be found in the treatment of transaction specific assets (within transaction cost analysis) and adaptation (within relational marketing literature). Both in transaction cost analysis (Anderson and Weitz, 1992) and relational marketing literature (Dwyer *et*

al., 1987), operationalisations emphasis that both represent investments. Furthermore, within both domains the investment is seen as being idiosyncratic in the sense that it is specific (or tailored) to a particular relationship (Heide, 1990; Stump and Heide, 1996; Rokkan *et al.*, 2003) and it will be difficult or impossible to redeploy the investment to another channel relationship (Lohtia, Brooks and Krapfel, 1994; Williamson, 1985). The similarity in definitions between adaptation within marketing literature and definitions of transaction specific assets led one commentator to describe the differences as only “semantic” (Brennan *et al.*, 2003).

Transaction specific assets are presented by Williamson (1975, 1985) as representing a contractual hazard. Klein *et al.* (1978) describes transaction specific assets as being valuable because they create appropriable quasi-rents, or “value above and beyond what could have been generated through general purpose investments” (Dyer *et al.*, 1998; p. 141). However, in order for this value to be garnered by the investing party the relationship needs to continue so that returns can be gained from the investment in the asset.

This creates a situation of dependence in which exchange partners can exploit or appropriate such assets by behaving opportunistically because the assets are non-redeployable or at least have reduced value in an alternative exchange relationship. The presence of transaction specific assets creates a situation of dependence that creates contractual hazards (Williamson, 1975).

According to the transaction cost analysis heuristic put forward by Williamson (1975), the presence of transaction specific assets will lead to an increased tendency towards vertical integration since this is the appropriate form of governance when such assets are present in a relationship. This is because, according to Williamson (1975) vertical integration offers superior control against opportunism occurring to other forms of governance. According to Williamson (1996, p.239), to make an adaptation investment without appropriate safeguards in the form of hierarchical governance being in place is “myopia”,

Existing research on transaction specific assets can be summarised as follows. There have been a number of investigations which have sought to investigate the accuracy of the predictions regarding vertical integration set out in the transaction cost analysis heuristic. Monteverde (1995) finds that the decision to integrate product design with manufacturing is systematically related to required investments in specific human capital in an examination of the semiconductor industry. Other papers that explore the influence of asset specificity in conjunction with other transactional characteristics hypothesized to affect organizational choice are Regan (1997), Joshi and Stump (1999), and Saussier (2000).

Taken together, these empirical papers support the view that asset specificity in combination with other transactional considerations is an important determinant of vertical integration. However, the existing research does contain examples where this is not the case. There is available evidence that such investments are made without vertical integration being in place (Holmström and Roberts (1998). Examples of situations in which such investments have been made without vertical integration being in place include Japanese manufacturing, U.S. steel makers, airline alliances, and the contractual networks in the media, software and biotechnology industries — and Gilson *et al.* (2009) extensively documents how rapidly innovating industries are moving away from integration to deal with adaptation investments. The literature on the relationship between governance structures and decisions to make adaptation investments is the focus of Chapter B2.

In empirical research which has included consideration of transaction specific assets (Artz, 1999; Heide, 1994; Heide and John, 1988, 1992; Joshi and Stump, 1999; Neilson, 1996) the focus of the study has been on examining the effect that the presence of transaction specific assets has on governance decisions.

It is possible to find some papers within transaction cost analysis that has considered the broader roles played by such assets within relationships. Recent empirical work confirms that investments in relation-specific assets are often correlated with superior performance (Parkhe, 1993; Dyer, 1996). Furthermore, a series of studies by Joskow (1985, 1987, 1988b, 1990) investigates the effects of asset specificity on contract duration and price adjustment in agreements between coal suppliers and coal-burning electrical plants. He examines a large sample of coal contracts and finds strong support for the hypothesis that the greater are relationship-specific investments (in this case, site specificity and dedicated assets), the longer are the periods covered by the contract. Crocker and Masten (1988) also found that contracts in the natural gas industry tended to cover longer terms when specific assets were involved.

Within extant research (Artz, 1999; Heide, 1994; Heide and John, 1988, 1992; Joshi and Stump, 1999; Neilson, 1996), transaction specific assets are treated as one of the attributes that distinguishes between transactions. Therefore, asset specificity becomes an independent variable and are viewed as exogenous to the governance structure decision. The focus of the existing research assumes that transaction specific assets are already in existence in the relationship so it is not necessary to provide any explanation for their presence in the relationships. Transaction specific assets are therefore depicted as sunk investments that have already been made. Their theoretical role has been to test the predictions regarding choice of governance set out in transaction cost analysis. Within transaction cost analysis the focus of attention is on choosing governance

structures that manage the effects of uncertainty and which protect existing assets against opportunism.

The status of existing research was noted by Williamson (1993, p. 27) "To be sure, there is much to be done, hence there is no basis for complacency. . . most (empirical studies) are regressions in which asset specificity (and sometimes uncertainty and frequency) appear as independent variables", This point requires urgent attention in the development of empirical tests of the theory. Additionally, Masten (1995, p. 60) said that "The specificity of assets and the level of investment in those assets that determine the size of appropriable quasi-rents are themselves decision variables. The location of facilities, the adoption of specialized designs or equipment, and the scale of investments should all, by rights, be treated as endogenous variables."

The theoretical role played by adaptation within marketing literature generally and by transactions specific assets within transaction cost analysis could not, however, be more different. Within marketing literature there has been much consideration given over to explaining the existence of adaptation within a relationship, including consideration of the antecedents to making adaptations (IMP Group, 1982; Ford, 1980). Within the IMP tradition, adaptation refers to the extent to which the buyer and seller make substantial investments in the relationship (Ford, 1980). When a party commits resources to the relationship, the party making the investment has adapted to the needs of the other party (IMP Group, 1982). However within existing transaction cost analysis research, no consideration is given to explaining decisions surrounding investments in such assets. Since investments in transaction specific assets represent a conspicuous form of adaptation the omission of any detailed analysis of the reasons for such investments to take place amounts to a substantial gap in our understanding.

Two possible explanations have been put forward to explain adaptation investments in such situations. The first is based on extending transaction cost analysis to propose an alternative explanation for the myopia explanation based on learning and capability arguments. The second is based on using social control governance structures in the form of relational norms as a means of explaining adaptation investments in such situations. Each explanation will be considered in turn.

Arguments based around the importance of learning and capability within relationships (Argyres, 1996; Mayer and Salomon, 2006) put forward the following line of reasoning to explain unilateral adaptation investments. According to Williamson (1975), the unit of analysis within transaction cost analysis is the individual transaction which means that decisions regarding governance will be determined by the underlying dimensions of an individual transaction as seen by farsighted decision makers. This has the practical effect of ignoring both past and present transactions that may occur

between the parties to the relationship. Within the learning and capability paradigm, the transfer of knowledge and capability between firms produces effects that influence subsequent transactions (Argyres, 1996; Mayer and Salomon, 2006). According to the Kang, Mahoney and Tan (2009), it is possible to explain unilateral adaptation investments by incorporating arguments from the learning and capability paradigm. They argue that if an adaptation investment is made in a relationship and the transaction is considered in isolation the decision may appear unsatisfactory in the sense that an unacceptable vulnerability to opportunism may arise.

However, if the adaptation investment is considered in the context of the wider relationship, the position may be transformed from one of vulnerability to a more positive situation because of “spill-over effects” (Kang *et al.*, p.120) that influence the relationship at large.

A second alternative explanation is to consider other forms of governance (other than hierarchy) as a means of finding explanation for such investment decisions. This investigation is the focus of Chapter B2. It will consider the literature on adaptation under the different forms of governance recognised by transaction cost analysis. In particular, it will be shown that existing theory fails to explain the role that social governance structures such as relational norms play in the governance of adaptation. In Part B of this literature review the role of relational norms will be examined more closely with regard to decisions to make adaptation investments.

In the next Section the relationship between uncertainty and adaptation investments will be considered.

B1.2 UNCERTAINTY AND ADAPTATION INVESTMENTS

The central purpose of this Section of the thesis is to examine the effect of uncertainty on decisions to make adaptation investments. The Section is organized in the following way. It begins with a review of the findings relating to the theoretical arguments on uncertainty that Williamson (1991a) has put forward. It is followed by an examination of the effects of uncertainty on decisions to make adaptation investments.

Williamson (1991a) relies on the theory of incomplete contracts (which was outlined in Chapter A) as a means of explaining the process of adaptation within relationships. It depicts the world as one of parametric uncertainty in which there is a fixed number of possible outcomes which economic man, because of bounded rationality, cannot anticipate and incorporate into contracts. This creates a situation of incomplete contracts in the sense that when unanticipated events (which Williamson describes as “disturbances” (Williamson, 1991a) arise there is risk of opportunism arising.

Williamson (1975), predicts that when transaction specific assets are present, uncertainty will increase transaction costs. The relationship between uncertainty and transaction costs has received a limited amount of examination within the literature. According to Williamson (1975), high levels of environmental uncertainty increase the costs of adapting contractual agreements. This would imply that if a request were made to make an adaptation investment it would lead to increased transaction costs. Only one study in our review explicitly assesses the impact of environmental uncertainty on transaction costs (Pilling *et al.* 1994).

In this study, Pilling *et al.* (1994) find that environmental uncertainty has a significant positive effect on the *ex ante* costs of developing an exchange relationship but has no effect on the *ex post* costs of activity monitoring. Artz (2000) found a positive and significant relationship between volume uncertainty and negotiation costs. This implies that as volume uncertainty increases, transaction costs should also increase, in accordance with the predictions of transaction cost analysis. Since negotiation costs are recognised as a form of transaction costs (Williamson, 1991a) this paper is also supportive of Williamson's argument that uncertainty leads to increased transaction costs. However, the results of the Pilling (1994) paper are derived from an experimental study rather than a survey so its proximity to real life situations may be questioned.

The findings of Dyer (1996, 1997) do, however, raise doubts about the validity of Williamson's arguments linking uncertainty, transaction specific assets and transaction costs. Dyer (1996) found that within the Japanese Auto industry increased levels of investment in specific assets led to reduced rather than higher transaction costs. Although, the study did not specifically examine the effect of uncertainty, according to Williamson (1975) uncertainty will increase in parallel with investments in transaction specific assets. Accordingly, it is reasonable to expect that the findings would be that transaction costs increased rather than reduced.

Existing research on uncertainty within transaction cost analysis (Heide and Rindfleisch, 1997) has focused on examining Williamson's prediction regarding the effect of uncertainty on vertical integration. Williamson (1985) posits that, when faced with the need to adapt to an uncertain environment, a firm will seek to minimize its transaction costs through vertical integration. However, Williamson (1975) does not predict that uncertainty of itself leads to hierarchical governance. It is only in situations in which transaction specific assets are present, where there are quasi-rents at risk; that is, when one side's investment in assets is exposed. When there are no relationship-specific investments at stake, it may be less costly for a firm to contract on the market for goods and services in an uncertain environment than to assume the risk of producing them internally. In this way, the effect of uncertainty depends on the underlying dimensions of the

transaction. If there is no asset specificity it may be less expensive to go into the market and find an alternative supplier than to make it internally. The effect of uncertainty on governance structure thus hinges on asset specificity and the consequent bilateral dependency.

This proposition garners only partial support from the transaction cost analysis studies included in our review. Specifically, though some researchers find support for the anticipated effects of environmental uncertainty, others find no effects of environmental uncertainty, and still others find that some types of environmental uncertainty actually act as a disincentive to vertical integration. The different forms of uncertainty will be examined in turn.

Since the research has disaggregated uncertainty into different forms, the foregoing discussion on the effect of uncertainty on adaptation investments will consist of two sub-Sections reflects the different results reported on the effects of uncertainty on governance decisions. The first groups technological and dynamic uncertainty and the second group's volume and behavioural uncertainty. Empirical research on the effect of uncertainty on vertical integration decisions has found that technological and dynamic uncertainty does not lead to increased vertical integration but the opposite finding has been reported for volume and behavioural uncertainty.

B1.2.1 The effect of technological and dynamic uncertainty on adaptation investments

Technological uncertainty is defined as a form of volatility (Stump, 1995). It reflects an inability to forecast accurately the technical requirements in a relationship (Walker and Weber, 1984). It can relate to technological changes in both products purchased and in underlying manufacturing processes. It may also arise from changes in the standards or specifications of the components or end product, or from general technological developments (Cannon and Perreault, 1999; Jackson, 1985; Stump, 1995; Weiss and Heide, 1993).

Dynamism refers to the extent to which market and demand changes are rapid (Achrol and Stern, 1988; Aldrich, 1979). Klein (1989) defines dynamism as "the rate at which changes in the environment occur", It can relate to both short-term variations and long-term shifts. Dynamism is often manifested in changes in marketing practices. It can be characterised by changes in customer preferences, marketing of the product, and changes in the strategies of competitors (Achrol and Stern, 1988).

When there is a high level of dynamism it is likely to increase decision-making uncertainty, and it is likely to create difficulties in long range planning, product mix, and inventory decisions (Achrol

and Stern, 1988). Environments that are dynamic increase the uncertainty faced by decision makers (Leblebici and Salancik, 1981) by offering an increased number of contingencies to the organisation (Thompson 1967). Rapid change may cause a firm to be caught by surprise (Leblebici and Salancik, 1981).

According to the logic of Transaction Cost Analysis, as the amount of uncertainty increases it will lead to more vertical integration (Williamson, 1975). Both Walker and Webber (1984) and Balakrishnan and Wernerfelt (1986) showed that the effect of technological uncertainty is to make integration less likely. All of the findings suggest that the effect of technological uncertainty is to cause a loosening of relationships. The effect of technological uncertainty is to lead to a looser coupling between the parties.

Research that has specifically tested if uncertainty in the form of dynamism leads to increased vertical integration have not supported the proposition. Sutcliffe and Zaheer (1998) in a study of 308 graduate level students found that dynamism was negatively and significantly related to vertical integration. Eisenhardt and Schoonhoven (1996) showed that in dynamic environments, firms are motivated to choosing hybrid governance rather than to vertically integrate. Dwyer and Walsh (1985) found that the effect of dynamic uncertainty was to encourage less-formalised procedures, decentralized decision structures rather than to adopt vertical integration.

Achrol, Stern and Reve (1983) conceptualized that dynamism would lead to less vertical integration (but did not specifically test the proposition) because channel partners will want to retain flexibility that will enable dyads to respond quickly to market changes and challenges (Mahoney and Pandian, 1992; Wernerfelt and Aneel, 1987).

The effect of uncertainty relating to foreign entry decisions also appears to be contrary to Williamson's (1975) predictions. The dangers associated with operating in unfamiliar or quickly changing environments also appear to act as disincentives against vertical integration. For example, Klein (1989) shows that high levels of environmental complexity encourage exporters to exert higher levels of vertical control in foreign markets, whereas environmental dynamism (i.e., the rate of change) encourages exporters to exert lower levels of control. Likewise, Klein, Frazier, and Roth (1990) find that the presence of multiple sources of uncertainty in the environment (i.e., diversity) increases the likelihood of serving a foreign market through the use of external agents or distributors. The negative impact of environmental uncertainty on foreign market investment also is seen in various studies (Gatignon and Anderson, 1988; Hu and Chen, 1993; Osborn and Baughn, 1990).

It can be seen from the foregoing discussion that the effect of technological and dynamic

uncertainty indicates that parties wish to have looser ties (rather than vertical integration). This suggests that decisions to invest in adaptation investments are likely to be less likely since in environments characterised by technological and dynamic uncertainty, there is an increased likelihood that obsolescence may cause the asset to become less valuable or even worthless. It has been possible to identify two papers which have considered the effect of technological uncertainty on decisions to make adaptation investments.

Stump and Heide (1996) looked at the relationship between technological uncertainty and decisions to make credible commitments. They found a positive relationship between technological uncertainty and decisions to invest in credible commitments. Bensaou and Anderson (1999) proposed a negative relationship between technological uncertainty and adaptation investments (based on the arguments surrounding obsolescence outlines in the previous paragraph) but the empirical results found there was actually an increased level of investment in such environments. In both papers the authors suggest that the adaptation investments indicate a process of making a commitment to the relationship. This means that the investments are made because the investing party wants to indicate that they have a long-term commitment to the relationship which stretches to them making investments which may become obsolete very quickly. In neither paper is the role of relational norms specifically considered as a means of controlling the effects of uncertainty.

Williamson has accepted that there are limitations to his predictions regarding vertical integration in certain situations. Williamson (1985, p.143) points to innovation as a subject of specific difficulty in the following way: "the introduction of innovation, plainly complicates the earlier-described assignment of transactions to markets and hierarchies based entirely on an examination of their asset specificity qualities. [Indeed, the study of economic organization in a regime of rapid innovation poses much more difficult problems than those addressed here",

There is available evidence that when channel members are confronted with situations of the kind referred to by Williamson in the last paragraph, characterized by high levels of technological uncertainty or dynamism they tend to rely on collaborative relationship structures Dwyer and Welsh (1985) rather than vertical integration. Jap (1999) also showed that increased dynamism leads to increased coordination efforts. The important point in these examples is that the governance structures that have been chosen are not hierarchies. The extent to which forms of governance other than hierarchies can explain such investment decisions is considered in Chapter B2.

B1.2.2 The effect of volume and behavioural uncertainty on adaptation investments

Volume uncertainty relates to difficulty in predicting volume requirements in a relationship. It includes the inability to forecast accurately the levels of demand at the industry and company level for the object in question (Noordewier, 1990). It also includes difficulties related to uncertainties about the availability of the object in question in the market and at the company level. Difficulties connected with production or distribution and uncertainty caused by instability in the supply market have been included as types of volume uncertainty. It has also been put forward as a single item that assesses industry sales volumes for the end product. (Walker and Webber, 1984).

Behavioural uncertainty relates to ambiguity concerning the adherence of the exchange party to the terms of the agreement. The effect of volume uncertainty has also been tested in respect of integration. Walker and Webber (1984) found that the effect of volume uncertainty is not to integrate when competition is high. A study of sixty decisions to "make or buy" by Walker and Weber (1984, p. 591) found that high levels of volume uncertainty increased the likelihood of a decision to choose hierarchical over market governance.

A series of studies by Anderson and colleagues (Anderson, 1985; Anderson and Schmittlein, 1984; Weiss and Anderson, 1992) show that behavioural uncertainty is positively related to a manufacturer's decision to employ a direct sales force rather than manufacturers' representatives. Furthermore, both Anderson (1985) and Anderson and Schmittlein (1984) examine the full TCA model (i.e., asset specificity, environmental uncertainty, behavioral uncertainty, and frequency) and find that behavioral uncertainty produces the strongest effect sizes among all four dimensions. Both Gatignon and Anderson (1988) and John and Weitz (1988) provide additional support for the positive relationship between behavioral uncertainty and vertical integration.

The presence of performance ambiguity has been shown to be consistently linked with decisions to choose vertical integration. Anderson and Schmittlein (1984) and Anderson (1985) explore the decision of electronics firms to utilize a direct sales force versus manufacturer representatives, and in both cases vertical integration was chosen. Similar results were reported by John and Weitz (1988), Weiss and Anderson (1992), Dutta, *et al.* (1995) and Murray and Kotabe (1999). Studies that sought to test relational governance as a choice of governance could not be found.

A single paper has been identified that has considered the effect of volume uncertainty on adaptation investments. Bensaou and Anderson (1999) proposed that the more unpredictable the environment was because of volume uncertainty, the lower the level of adaptation investments that would be made by buyers. They did not find any support for this hypothesis.

In conclusion, it can be seen that Although Williamson's treatment of uncertainty in respect of governance decisions has been widely examined in the literature (as set out in the previous Section), the effect of uncertainty on decisions to make adaptation investments has received only minimal consideration. Bensaou and Anderson (1999) and Stump and Heide (1996) have shown that reciprocal investments in the form of credible commitments actually increase in the presence of technological uncertainty but offer no explanation within the terms of transaction cost analysis for the decisions to make unilateral adaptation investments where hierarchies are not in place.

B1.3 OPPORTUNISM AND ADAPTATION INVESTMENTS

According to the logic of Williamson (1996, p.239), a decision to make an adaptation investment without the presence of appropriate governance structures being in place amounts to "myopia" because of the potential for opportunism from the non-investing party. In this Section, the existing evidence on the effect of opportunism on such decisions will be examined.

In this Section of the literature review the relationship between opportunism and adaptation investments will be examined. It is organized in the following way. First of all, there is an examination of the literature which considers the effect of opportunism on adaptation investments, followed by a look at opportunism control mechanisms within relationships. Since within transaction cost analysis, opportunism is something which is depicted as something that needs to be controlled, the role of different forms of control mechanisms within relationships is examined. These mechanisms are: partner selection, monitoring and credible commitments.

According to Williamson (1991a) events which are unanticipated in contracts, such as a decision to make an adaptation investment, are described as disturbances. Williamson (1991a) postulates that in an existing relationship the effect of disturbances gives rise to the risk of opportunism occurring. A preliminary issue that needs to be addressed is a consideration of the conceptual link between disturbances and opportunism as it appears within transaction cost literature. The central proposition put forward by Williamson is that disturbances will give rise to opportunistic behaviour unless safeguards are in place.

B1.3.1 Disturbances and opportunism

The following observations can be made about the existing literature on disturbances and opportunism. Disturbances, as described by Williamson (1991a), are put forward as unforeseen, exogenous events that have not been covered by the terms of the contract. They are events that

arise because the contract is seen to be incomplete when the event occurs. However, the implication of Williamson's (1991a) logic is that they are an antecedent to the occurrence of opportunism because disturbances give rise to new, unanticipated circumstances in which vulnerable parties can be exploited by opportunistic behaviour. Williamson (2002, p. 174) argues that "governance structures have therefore to be designed to complete contracts for parties who will be confronted with the need to adapt to unanticipated disturbances that arise by reason of gaps, errors and omissions in the original contract". Williamson (2005, p.5). also states that "prescribing governance structures in order to provide cost-effective relief against maladaptation hazards is a recurrent theme".

Having reviewed the literature on opportunism the following points can be made. A conceptual analysis of opportunism by Wathne and Heide (2000) differentiated between opportunistic behaviour that arises under existing and new circumstances. Although the authors do not adopt Williamson's term disturbances it is taken to be analogous to their usage of the term new circumstances because both terms describe situations which are not foreseen at the time that the contract is drafted and the authors make reference to Williamson's 1991 (1991a) paper in which the use of the term disturbance is made. Wathne and Heide (2000, p. 41) categorise the opportunism that arises in these situations as "active" and "passive".

"Active" opportunism under new circumstances is seen in situations that Williamson (1988, p.176) describes as "contrived cancellation" situations. Wathne and Heide (2000) give the econometric study by Masten (1988) as an example of such a scenario. Masten (1988) illustrates his argument by making reference to so-called "take or pay" contracts where a party is committed to purchase a minimum amount of a commodity for a minimum price for a given period of time. The difficulty that arises is that the spot price for a commodity may fall below the minimum price set out in the "take or pay" contract. In such a situation, the party who has committed to purchasing the commodity will not be entitled to a reduction in price but is still required to buy at the pre-ordained price. In such a situation the disadvantaged party may seek to end the contract in order to make a new contract at a lower price.

The second example cited by Wathne and Heide (2000, p.40) is the study by Muris (1981) of contracts between Coca Cola and their bottler-distributors. In this case, due to increased competition in the market place, the Coca Cola Company wanted to introduce new marketing programs but the bottler distributors acted opportunistically by exploiting the new circumstances to demand special concessions before agreeing to participate in the contract.

"Passive" opportunism under new circumstances arises in situation in which a party's response to

the change is a refusal to adapt to new circumstances. Wathne and Heide (2000) do not provide any examples of how they envisage this form of opportunism occurring. Instead, they make reference to a discussion by Anderson and Weitz (1986) on the subject but this article only alludes to the potential for such situations arising when the presence of human specific assets in a relationships gives a party the opportunity to refuse to adapt and does not provide any concrete examples of the phenomenon occurring. Wathne and Heide (2000) also make reference to Williamson (1979, p.240) who also describes scenarios where a party relies “on the letter of the contract when the spirit of the exchange is emasculated”, This envisages situations in which new circumstances render the terms of the existing contract obsolete but a party insists on compliance with the existing contract .

However, the examples cited do not rest easily with the analysis put forward by Williamson (1991a). The Muris (1981) example of the disputes between Coca Cola and its bottler-distributors suggests that there were environmental changes that were exogenous and not envisaged by the original contract. Therefore, this is an example of a disturbance of the kind alluded to by Williamson (1991a). The second example cited by Wathne and Heide (1991) of the “take or pay” contracts set out in the Masten (1988) paper does not correspond to a disturbance in the sense used by Williamson (1991a). This is because the contract did make provision for pricing for the duration of the contract. In this case the contract is not incomplete and it must have been envisaged at the time of the contractual negotiations that the price may fall below the minimum set out in the contract.

Since Williamson’s (1991a) analysis of the link between disturbances and opportunism rests on the premise that the disturbance to the relationship is an exogenous, unanticipated event that creates situations in which opportunistic behaviour can occur this second example does not fit within his existing description of disturbances.

In an earlier work, Williamson (1985, p.80) said that he did envisage that disturbances might also be introduced into a relationship by one of the parties (as opposed to them being purely exogenous occurrences). This aspect of Williamson’s thinking on disturbances and maladaptation has not been developed further but the literature on opportunism suggests that conceptually – disturbances introduced by a contractual partner, as opposed to them being purely exogenous events are events that can occur. In conclusion it can be seen that although Williamson (1991a) provides strong guidance on the likely effect of opportunism, there is a lack of evidence on the antecedents of opportunism.

B1.3.2 Opportunism and adaptation investments

The presence of transaction specific assets and the need to have appropriate governance structures

in place is a central axiom of transaction cost analysis. Williamson (1996, p.239) said that to invest in adaptation investments without an appropriate governance structure in place amounted to “myopia” because of the risk of opportunism. According to the logic of Williamson (1996), adaptation investments and opportunism are inextricably linked.

The existing literature which has considered this linkage can be summarized as follows. Heide and Stump (1995) proposed that the presence of transaction specific assets without appropriate governance structures being in place would lead to a negative effect on performance. This argument was based on the assumption that in the absence of appropriate governance being in place opportunism would arise which would lead to increased costs which would impact on performance. The authors found significant support for the proposition. Parkhe (1993) also found support for the proposition that there was a significant negative relationship between perception of opportunism in the other party and decisions to invest in adaptation investments.

Although these papers provide some support for Williamson’s arguments, it is possible to see alternative scenarios in which adaptation investments and opportunism are linked. In the relational marketing literature, decisions to invest in adaptation investments are seen as evidence of commitment and leads to the development of trust within relationships (Narayandas and Rangan, 2004). However, it is also possible that if opportunism is controlled by means of hybrid governance, the investments can be made without unnecessary risks. The role that hybrid governance, and relational norms in particular, can play in controlling opportunism is investigated in the second part of this chapter.

B1.4 SUMMARY

Transaction specific assets have a defined theoretical role within transaction cost analysis which emphasises the potential hazards that can flow from investments in such assets when the appropriate governance structure is not in place. Within the transaction cost analysis heuristic, predictions are made regarding the presence of transaction specific assets and hierarchical governance. Existing research on transaction specific assets is associated with investigating these predictions and not on investigating the reasons for the existence of these assets within relationships.

Despite the strictures of Williamson that investment in specific assets without an appropriate governance structure being in place there is evidence that this is a widespread practice. Two possible explanations are put forward as reasons for the existence of these assets: the first relies on learning and capability arguments; the second is concerned with investigating investments in these

assets under different forms of governance, particularly hybrid governance (this is considered in Chapter B2).

Uncertainty and adaptation. Based on incomplete contracting theory, Williamson (1975) predicts that uncertainty will have a negative effect on adaptation. However, empirical evidence is lacking.

Contrary to Williamson's predictions, the effect of some forms of uncertainty – technological and dynamic – rather than having a negative effect on adaptation investments actually has been shown to have a positive effect. However, the limited existing research is limited and explanations for these findings are incomplete.

Research into volume and behavioural uncertainty has largely confirmed Williamson's predictions concerning the effect of uncertainty on vertical integration decisions. Williamson's predictions regarding the effect of these forms of uncertainty on adaptation investments has received minimal consideration and represents a research gap.

Opportunism and adaptation investments. Opportunism is conceptualised to have a negative effect on adaptation investments. Williamson sets out a theory that disturbances are an antecedent of opportunism impacting on adaptation but there is a lack of confirmation for this in the literature. Limited evidence supports Williamson's suggestion that opportunism will have a negative effect on adaptation investments.

In order to facilitate comparisons with relational marketing literature, all assets (including transaction specific assets and credible commitments) that represent investments in assets which are specific to particular relationships will be referred to in this thesis as adaptation investments.

CHAPTER B2: GOVERNANCE OF ADAPTATION INVESTMENTS

B2.1 ADAPTATION, EFFICIENCY AND CHOICE OF GOVERNANCE

The crucial issue that stems from the adaptation problems outlined in the previous Section is the need to have a governance structure in place that is capable of the double objectives of allowing for adaptation to take place and which is also capable of safeguarding against the hazards of maladaptation. Williamson (1975, 1985, 1991a) argues that this necessitates the making of a decision regarding the choice of governance structure which will meet these two objectives.

Williamson (2008, p.8) explains the problem in the following way: "If, however, boundedly rational parties also have the capacity to look ahead, then potential maladaptations (i.e., opportunism) can be relieved by crafting mechanisms *ex ante* to deal with unanticipated disturbances as they arise, the effect of which is to facilitate adaptation, preserve continuity and realize mutual gain during contract implementation". In choosing the appropriate form of governance, it is necessary that the choice of governance can both be adaptive and at the same time is capable of preventing maladaptation.

"If, in consideration of these limits, it is very costly or impossible to identify future contingencies and specify, *ex ante*, appropriate adaptations thereto" (Williamson, 1975; p. 9). For this reason, Williamson argues that "governance structures have therefore to be designed to complete contracts for parties who will be confronted with the need to adapt to unanticipated disturbances that arise by reason of gaps, errors and omissions in the original contract" (2002, p. 174).

Williamson (1975) argues that it becomes necessary for parties to make "an assessment of alternative organizational modes" between the different governance structures in which the relative efficiency of each form of governance will be considered in a rational manner and determined by a matching between the underlying dimensions of the transaction and the governance structure through a process of discriminating alignment.

Williamson (1985, p.60). argues that it is "imperative that the parties devise a machinery to 'work things out'-since contractual gaps will be larger and the occasions for sequential adaptations will increase in number and importance as the degree of uncertainty increases. Also, and relatedly, concerns over the behavioral uncertainties referred to above now intrude",

However, Williamson maintains that a key complicating factor in devising a suitable governance structure to attenuate these problems is that the *ex ante* and *ex post* costs of contract are

interdependent and must be addressed simultaneously at the outset (1985, p.21). For Williamson (1985, 42), governance structures are established that "accommodate and/or make express provision for bounds on rationality and the hazards of opportunism".

The efficiency of any governance structure is determined by its ability to minimise transaction costs. Transaction costs include expenditures for activities such as search, negotiation, bargaining, writing and enforcing contingent contracts, and monitoring performance (Joskow, 1987; Williamson, 1975, 1985).

It is claimed that "efficiency purposes are served by matching governance structures to the attributes of transactions in a discriminating way" (Williamson, 1985; p 68) and that "an extant form of organization for which no feasible superior alternative can be described and implemented with expected net gains is presumed to be efficient" (Williamson, 1998; p.6). Efficiency is therefore achieved, according to Williamson by comparing the choice of governance structures available and opting for the one that minimises transaction costs the most. Achieving efficiency, therefore, is reduced by Williamson into a exercise of comparing governance structures with transaction costs as the unit of analysis.

Several fundamental criticisms of the depiction of efficiency can be made. The first is that it is a comparative rather than an absolute standard that is proposed. Parties are depicted as only choosing the governance structure that minimises transaction costs based on a comparison with other available governance structures. This means that other measures of economic efficiency are not either considered or included within transaction cost analysis. A second criticism is that the unit of analysis which determines economic efficiency is the individual transaction (Williamson, 1975). Such an approach has been criticised for overlooking forms of relationship, mostly of a co-operative and trusting kind, that seeks joint value maximisation for both parties to a relationship (Zajac and Olsen, 1993). Transaction Cost Analysis can be criticised for focusing on cost economising for the individual firm rather than maximisation of gains for the relationship itself.

The argument put forward by Williamson that a party to a relationship will choose a form of governance at the outset of the relationship, based on discriminating alignment that economises on transaction costs can be criticised on the grounds that there is an internal inconsistency in Williamson's arguments. How is it possible that boundedly rational agents are able to devise and implement the efficient, transaction costs minimizing governance structure for all transactions? On the one hand, it is impossible to craft a contract *ab initio* that anticipates every eventuality but it is possible, nonetheless, to make a choice of governance at the outset of the relationship.

Given that Williamson accepts that the amount of transaction specific assets present in the

relationship is likely to change throughout the duration of the relationship there have to be differing levels of likelihood that vertical integration will be chosen as the choice of governance. It is hard to see that a party, even a party envisaged by Williamson (1996) to have “farsightedness” could predict which governance structure is the best suited to their future circumstances

A number of additional criticisms can be made about this governance within transaction cost analysis. The choice of governance structure which is needed to solve the adaptation problems that arise from incomplete contracts is, according to the logic of Williamson (1975) solved through the choice of a single form of governance. The focus is always on a single governance form. Bradach and Eccles (1989) challenge this view and argue that firms may purposely combine different governance forms by using a “plural forms” approach. The central criticism made by these authors is that transaction cost analysis does not correspond to reality in the sense that frequently more than one form of governance may be chosen to organize a particular activity. This is seen in situations in which a company has to organize its sales activities. It is not uncommon for part of the activities to be carried out in-house (i.e., by a hierarchy) and partly by a third party sales agency (i.e., the market).

A more fundamental criticism that may be made against transaction cost analysis relates to the actual feasibility of making choices of governance. Since the need to adopt efficient governance structures necessitates a comparison of alternative governance structures it is implicitly assumed that such a choice can be made. However, a core criticism that might be raised against it is the actual feasibility of it occurring in the real world. In many exchange relationships the vulnerable party may be considerably smaller and unable financially to actually contemplate vertical integration (if that is the appropriate governance choice) in such a situation. Even if a party incurred additional transaction costs and was persuaded of the merits of vertical integration it is difficult to envisage vertical integration occurring because the party does not have sufficient resources to achieve it.

Another criticism relates to the range of alternative governance structures that are available to the parties. Although Williamson (1985) accepts the existence of hybrid governance structures he does not recognise relational norms as a form of governance that is an available choice for the parties. The issue of the role of relational norms and the theoretical consequences that flow from this oversight are returned to later in this chapter when the relative merits of alternative governance structures to cope with the problem of adaptation is considered further.

Another core criticism is the essentially static approach adopted by transaction cost analysis which assumes the future to be fixed but unpredictable (Williamson, 1975). The ability to make decisions

concerning governance is depicted as something that can be rationally taken on the basis of fixed potential eventualities. However, this point of view is in conflict with the argument that it is an unrealistic depiction of the real world. This is because the future can be seen as being essentially unknowable in the sense that major events can occur that cannot have been anticipated. Due to this criticism Nooteboom (1991) has suggested that transaction cost analysis moves away from a static analysis towards a dynamic approach. This would have the theoretical consequence that choices of governance would not be made once and for all but could be made as the future unfolds.

Moving from a static to a dynamic approach would have the effect of making the choice of governance within transaction costs analysis potentially more in line with real world decisions. This point is best illustrated by Noorderhaven (1994) who argued that the governance choice decision in transaction cost analysis is seen as the fruits of planned and deliberative action whereas in the real world many governance decisions especially involving relational governance can also have spontaneous origins based on the accumulation of trust over time.

B2.2 ADAPTATION AND GOVERNANCE

According to the logic of Williamson (1991a) different governance structures have varying capacity to deal with “disturbances” and the need to deal with changes to contracts will lead to increased transaction costs as the parties are forced into negotiations related to the changed circumstances. Williamson (1991a) bases his arguments concerning governance structures and their capacity for adaptation on his analysis of disturbances. Williamson (1991a) provides an analysis of the different types of “disturbances” that can occur. When they are of a minor nature, he describes them as “inconsequential disturbances”, The effect of the change of circumstance is so small that it represents a deviation that is of such a minor nature that a party will be prepared to ignore it and it will leave the existing arrangements concerning the transaction unaffected. If the disturbances are greater importance, he describes such changes of circumstances as “consequential disturbances”, it will be possible for the adaptation to be handled by contractual arrangements, such as arbitration clauses or provisions allowing for automatic price increases, act like a loose framework for the parties: showing the direction to solutions in cases of unanticipated disturbances.

Such arrangements do contemplate that there will be disturbances that require acts of adaptation to take place and incorporate into the contracts provisions that allow for some tolerance for allowing adaptation to take place. This level of tolerance is, according to Williamson, not indefinitely elastic. As the level of disturbance becomes more consequential the relationship will endure more severe strain because the parties are autonomous and the disturbances will continuously act as an

incentive for the parties to defect. As the level of disturbance increases it becomes more likely that the contractual framework will be unable to provide a sufficient degree of accommodation to allow for change to take place. Furthermore, such contracts, which Williamson describes as “neo-classical” contracts are expensive to administer in the sense that the adaptation will only take place at great cost: if arbitration is used it will be expensive to administer and its adaptive range is limited.

The final type of change of circumstance is described as “highly consequential disturbances”, Williamson envisages that as the severity and frequency of the disturbances governance structures are required that will provide more capacity for adaptation by being more elastic. The analysis provided by Williamson is difficult because he does not provide examples of the types of disturbance that fall into this category. Instead, he limits his analysis to suggesting that only internal organization in the form of hierarchy provides a sufficiently elastic and adaptive form of governance to deal with disturbances of a “highly consequential” nature.

Williamson (1975, 1985, 1991a) describes adaptation under different governance structures. Adaptation within markets is described as “autonomous adaptation”, It is achieved, according to Williamson (1985), as a result of the price mechanism (i.e., the interplay of supply and demand). It is regarded as being autonomous because it is not achieved as a consequence of co-coordinated actions and is deemed to arise automatically as a result of the interaction of supply and demand within the marketplace.

Adaptation within organizations is described as “purposive adaptation” (Williamson 1985) and refers to the need for all organizations to adapt to the continuously fluctuating environment in which they find themselves. This type of adaptation refers to “the re-adjustment of processes” (Williamson 1996) within organizations and is carried out as a result of the exercise of authority in the form of an employment contract – an “employment relation” (Barnard, 1938; p.163) within the organization. This is described by Williamson (1991a, 1996) as the most elastic and adaptive type of governance structure. This is because adaptation can be facilitated by fiat. He draws on Barnard’s concept of “employment relation” to explain how this is affected.

Three specific aspects of organizations are relevant in this respect. First, organizations have more powerful control and monitoring mechanisms available than do markets because of their ability to measure and reward behaviour as well as output (Eisenhardt, 1985; Oliver and Anderson, 1987). As a result, the firm's ability to detect opportunism and facilitate adaptation is enhanced.

Second, organizations are able to provide rewards that are long term in nature, such as promotion opportunities. The effect of such rewards is to reduce the payoff from opportunistic behaviour.

Third, Williamson (1975) acknowledges the possible effects of the organizational atmosphere, in which organizational culture and socialisation processes may create convergent goals between parties and reduce opportunism *ex ante*.

Williamson (1991a) makes two predictions regarding adaptation in such situations. The first is that hybrid governance structures are unable to manage the upheavals represented by disturbances of a “highly consequential” nature. According to Williamson, each of the different governance structures has different attributes in terms of their respective capacity for dealing with “disturbances”; in broad terms, TCA suggests that greater co-ordination is required to deal with “highly consequential” changes in circumstances. In practical terms, TCA argues that organizations are more efficient than markets at organising adaptation in the face of severe changes because of their ability to co-ordinate the adaptation (Williamson, 1985, 1991a, 1996).

The second prediction is that as levels of external uncertainty increase organizations will choose to internalise the business function by carrying it out within the organization (or “hierarchy”, as it is described by Williamson (1985) rather than to obtain it from the market. This is because it is argued that hierarchies are more efficient at adaptation than markets because of their superior capacity to co-ordinate adaptation. By choosing to carry out the adaptation within a hierarchy economic efficiency is achieved because lower transaction costs will be associated with the adaptation.

The focus of the second part of the literature review is to examine literature that considers Williamson’s arguments concerning adaptation under different governance structures. In particular, Williamson’s (1991a, p.291) argument that hybrid governance is inappropriate for handling “bilateral dependence and co-ordinated adaptation when medium or high asset specificity is paired with frequent disturbances (environmental uncertainty) in business to business relationships” will be considered. Essentially, Williamson is making two arguments. The first sees him arguing that higher uncertainty decreases the probability of hybrid forms (more precisely, those where adaptations require consent), and increases the probability of polar forms, such as market and hierarchy (1991a, 1996) being adopted. The second argument made by Williamson is that hybrid governance is incapable of organizing adaptation when confronted by uncertainty.

B2.3 MARKETS AND ADAPTATION INVESTMENTS

The description of markets set out by Williamson (1975) is based on Hayek's (1945) price theory regarding the allocation of resources. The core argument of Hayek (1945) was that the inter-play of buyers and sellers is induced in response to price changes. In setting out his theory on adaptation within markets, Williamson applies Hayek's argument regarding the use of the price mechanism as a means of effecting adaptation.

The depiction of adaptation in markets presented by Williamson (1975) can be summarised as follows. Williamson (1975) sets out a theory on the process of adaptation within markets. The process of adaptation is, according to Williamson (1975), uncoordinated in the sense that it arises purely from the inter play of buyers and sellers. In putting forward his theory of adaptation under market governance, Williamson abstracts out certain factors. The identity of the parties is not a factor in determining any adaptation decision. This means that reputational factors based on prior performance and the accumulation of trust are of no relevance.

The conceptualization of market conditions put forward by Williamson is best regarded as an ideal type in the sense put forward by Weber (1922). The role of an ideal type is to serve as an analytical construct that serves the researcher as a measuring rod to ascertain similarities as well as deviations in concrete cases. It provides a point of reference in Williamson's analysis because he uses it as a starting point in the development of his arguments regarding the effects of the key transaction cost analysis constructs, in particular uncertainty and opportunism, on governance. It should not therefore be seen as approximately to any real life situation other than perhaps to some commodity exchanges where the criteria set out above are most closely matched. The depiction of markets is subject to so many limitations that it is of limited practical benefit. From a theoretical perspective, however, it is used by Williamson (1975) as something that allows for adaptation under hierarchies and hybrids to be compared and contrasted (1975, 1985, 1991a).

The key element underlying Williamson's (1975) theory of adaptation under market conditions is its reliance on the efficiency of the price mechanism. A substantial limitation of the explanatory power of his theory of markets to cope with adaptation is their need to function within the constraints of the price mechanism. This implies that prices must serve as sufficient statistics for transactions to adapt autonomously (Williamson, 1991a). However, price data is subject two major limitations. The first is that price data is an inadequate method for measuring goods and services if it is difficult to determine the underlying value of the goods or service in question. Additionally, it is extremely difficult to make decisions based on price for innovative products where the parties have no prior experience.

Uncertainty is also not a problem within Williamson's (1975) theory of adaptation within markets because information within the market is complete and unimpacted. Interactions are short-term in nature. Adaptation occurs autonomously in markets according to Williamson (1975) since a party can adapt without needing to obtain the agreement of any other party. Under market conditions a party will simply make a new contract. Market governance corresponds to discrete governance as used by Macneil (1980).

Opportunism is attenuated by the credible risk of being able to switch to other readily available suppliers. Joshi and Stump (1999) point out that market governance enables the manufacturer to verify the comparative benefits of doing business with various suppliers while also curbing the risk of opportunism from the existing supplier. Another advantage of market governance is that contract bids tend to be discrete. This gives the manufacturer the flexibility to pursue several supplier relationships concurrently over time (Williamson, 1985).

Additionally, under market governance, since all transactions are discrete adaptation investments do not exist. Accordingly, no dependence exists between buyers and sellers in the sense that there are no ties arising from the presence of transaction specific assets. It also means that it is not necessary for decisions to be taken about adaptation investments since such assets cannot exist in a situation in which all transactions are discrete and unrelated to any other.

B2.4 HIERARCHIES AND ADAPTATION INVESTMENTS

Williamson (1975, 1985, 1991a, 1996) argues that hierarchies have the greatest adaptive capacity of any governance structure. According to Williamson (1991a), hierarchies are the most efficient form of governance for organizing adaptation. Williamson (1991a) does not make specific reference to adaptation investments in putting forward his ideas on adaptation under hierarchies..

Drawing on the organizational theories of Barnard (1938), Williamson (1991a) argues that the "truly distinctive" feature of hierarchies, and the reason for their superior capacity to organize adaptation, is the existence of an "employment contract" (Williamson 1975) between the organization and its employees. The employment contract provides an authority structure in the sense that managerial fiat, i.e., the orders of the organisation's management relating to adaptation are expected to be followed by the staff.

Williamson relies on Barnard's (1938) argument that the existence of the employment contract creates a shared purpose within organizations adaptation by organizations is described as "purposive", The advantages of purposive, co-ordinated adaptation (as described by Williamson

(1975, 1985, 1991a) over the undirected autonomous adaptation that takes place in markets can be described as follows. First, purposive adaptation is possible even in the absence of prices or markets since it is organized by fiat rather than by the interplay of buyers and sellers. Second, it allows organizations to pursue dynamic efficiency, which creates new options and expands the scope of activities beyond those that markets alone can co-ordinate efficiently. Third, organizations have more powerful control and monitoring mechanisms available than do markets because of their ability to measure and reward behaviour as well as output (Eisenhardt, 1985; Oliver and Anderson, 1987). As a result, the firm's ability to detect opportunism and facilitate adaptation is enhanced. Additionally, organizations are able to provide rewards that are long term in nature, such as promotion opportunities. The effect of such rewards is to reduce the payoff from opportunistic behaviour.

Williamson's analysis of incomplete contracting when applied to hierarchies (Williamson, 1991a) has the following suggested effects. It is argued that hierarchies have superior incentive arrangements to hybrid governance based on career rewards and profit sharing. If vertical integration has occurred then there will no longer be a contract in existence between independent parties. This obviates the need to gain any agreement from another party before adaptation can take place. Additionally, whereas under hybrid governance arrangement, based on long term contracts, disputes between the parties will give rise to legal expense arising from arbitration and court based expenses. Williamson (1991a) points out that under United States law, courts have traditionally refrained from interfering in the governance of organizations regarding such matters as private matters for the owners to determine among themselves. Under hierarchical governance, internal disputes are resolved by managerial fiat.

However, the fundamental point that Williamson raises is that adaptation under hierarchies is the most robust form of governance for handling disturbances of the most consequential kind. In Williamson's analysis of this aspect of his analysis of hierarchies, the arguments centre on the adaptive capacity of long term contracts. In such cases, according to the arguments of Williamson (1991a), the adaptive capacity is substantially limited by the need to gain agreement from another party before changes can be made. Williamson (1991a) argues that under hierarchical governance, such agreements are not necessary since decisions regarding adaptation are determined by managerial fiat rather than by consensual agreement.

These arguments have been criticized on the grounds that there is evidence (Ghoshal and Moran, 1996) within the literature of organizational theory that suggests that the use of hierarchical

authority does not always lead to adaptation occurring as suggested by Barnard (1938) and Williamson (1975).

The analysis put forward by Williamson does not appear to have been empirically tested and it has been subjected to criticism for the over-emphasis it places on employment contracts as means of achieving the co-ordination and co-operation necessary to adapt in the face of “highly consequential” disturbances (Ghoshal and Moran, 1996).

The criticisms levelled against Williamson’s arguments are two-fold. Firstly, employment contracts do not always achieve their stated aims. This is because the use of authority can be counter-productive in the sense that the use of authority can inspire opportunism rather than co-ordination and co-operation. This is because there sometimes occurs a breakdown in the authority relationship; the use of authority does not always imply that instructions will be carried out (Ghoshal and Moran, 1996).

In particular, the arguments relating to fiat have been heavily criticised (Ghoshal and Moran, 1996) on the grounds that fiat can be a blunt instrument in the sense that by focusing attention on a small number of activities that are capable of observation, measurement and evaluation, fiat will may give rise to opportunism by enhancing any negative feelings, such as feelings of bias or unfairness towards the organization.

A more fundamental criticism of Williamson’s (1991a) analysis is that he does not put forward any explanation for decisions to invest in adaptation investments (apart from his suggestions regarding the need to have safeguards in place) not only under markets and hierarchies (for the reasons set out above) but also for such decisions when hybrid forms of governance are in place. Williamson (1991a), in putting forward his analysis of adaptation under markets and hierarchies, relates it to the fundamental problem of incomplete contracts. Williamson does not specifically include within his arguments anything relating specifically to decisions to make adaptation investments.

In the next part of this charter an examination will be made hybrid governance. It will start with some general observations on hybrid goveranance under transaction cost analysis.

B2.5 HYBRID GOVERNANCE AND ADAPTATION INVESTMENTS

A central argument of Williamson is that hierarchies are the most efficient form of governance because of the purposive effects of hierarchical governance. The central argument of Williamson (1991a) is that these effects can only be found under hierarchical governance. The logic of Williamson’s argument has been criticised for failing to recognise that purposive effects can also

be achieved between independent firms (Heide and John, 1992). The basis of this particular criticism rests on sociological and organisational literature which has argued that close ties between independent firms can replicate the purposive effects of hierarchies (Stinchcombe, 1985; Granovetter, 1985). The idea is that purposive adaptation between independent firms is achievable is consistent with the political economy paradigm's construct of vertical coordination. Vertical coordination was first elaborated in marketing by Stern and Reve (1980) in their "political economy" framework, and later operationalized in empirical work by John and Reve (1982) and Reve and Stern (1986).

Williamson (1985) responded to these general criticisms by broadening his conceptualization about the choice of governance to expand the theoretical role of hybrid governance within transaction cost analysis. Williamson (1991a) in putting forward his arguments relating to adaptation under hybrid governance relates them long-term contracting. This form of governance is the first form of hybrid governance that is considered in this part of the literature review. It will be followed by a consideration of relational norms. In each case, specific reference will be made to any literature concerning decisions to make adaptation investments.

B2.5.1 Long term contracts and adaptation investments

According to Williamson (1991a), adaptation is facilitated under long term contracts by incorporating into the contract "special adaptive mechanisms" (Joskow, 1985, p.210). Williamson (1991a, p.271) describes the same thing as an "elastic contracting mechanism", The key aspect of these mechanisms is seen in contractual provisions that contemplate unanticipated disturbances which require adaptation. Examples given by Williamson (1991a) of such provisions include adjustment clauses allowing price changes if supporting information is provided by a party and provisions allowing for private arbitration as a means of resolving disputes. Williamson (1991a) does not relate his arguments to decisions to make adaptation investments. The theoretical arguments put forward by Williamson (1991a) relate to the process of adaptation rather than to decisions to make adaptation investments.

In analysing adaptation organized under governance by long term contracts, Williamson (1991a) states that such contracts exist between utility companies and their customers and also in long-term franchise contracts. Williamson does not provide any evidence for the prevalence of such provisions in contracts either within the two areas which he quotes as examples or in other areas such as manufacturing or service contracts. Nor does he comment on whether short-term contracts can contain adaptive provisions. There does not seem to be any logical reason why this cannot be the case.

The fundamental difficulty facing adaptation under hybrid governance, according to Williamson (1991, p.271) is that it is only possible to achieve it in cases that are not included within the “tolerance zone” if the consent of both parties to the contract is obtained. The process of obtaining this consent when disturbances occur is likely to be lengthy according to Williamson (1991a, p.282) “because of disagreements and self-interested bargaining” and “maladaptation costs are incurred”,

According to the arguments of Williamson (1991a), obtaining the consent of both parties can be a lengthy and expensive process. According to the description of the theory put forward by Williamson (1991a), when the effects of uncertainty are combined with a situation of dependence created by the presence of transaction cost assets, it will have the effect of increasing transaction costs and make it more likely that the transaction will be carried out internally through a hierarchy form of governance or through the market (Williamson, 1991). Williamson (1996, p. 116) explains that the hybrid mode is arguably the most susceptible, because “hybrid adaptations cannot be made unilaterally (as with market governance) or by fiat (as with hierarchy) but require mutual consent.”

Williamson (1991a, p.282) extends this argument by suggesting that when uncertainty gets too enormous, the hybrid has limited efficiency for organising economic activity, since a transformation towards either the firm or the market will take place, he states: “Although the efficacy of all forms of governance may deteriorate in the face of more frequent disturbances, the hybrid mode is arguably the most susceptible. That is because hybrid adaptations cannot be made unilaterally (as with market governance) or by fiat (as with hierarchy) but require mutual consent.

Consent, however, takes time. If a hybrid mode is negotiating an adjustment to one disturbance only to be hit by another, failures of adaptation predictably obtain (Ashby, 1960). An increase in market and hierarchy and a decrease in hybrid will thus be associated with an (above threshold) increase in the frequency of disturbances.

Williamson emphasises that the effect of disturbances makes hybrid governance the most susceptible to their effects. This is because, according to Williamson (1991a, p.291) unilateral (“autonomous” of the kind envisaged by Hayek (1945) in markets) adaptation under hybrids is not

possible nor is adaptation by fiat (in the “purposive” sense used by Marshall in hierarchies) is possible because adaptation will always require the consent of the other party. Williamson argues that this has the effect of making hybrid governance the least effective form of governance for achieving adaptation.

Even though interfirm contractual arrangements were the earliest form of hybrid governance that received consideration in the literature, it has not been possible to identify literature that has specifically tested Williamson’s theoretical assumptions regarding adaptation under long term contractual arrangements. Moreover, it has not been possible to find literature that relates adaptation investment decisions to long-term contracting.

The existing literature on long-term contracting under transaction cost analysis has focussed on testing the duration and structure of long term contracts. Examples include Saussier’s (2000) analysis of the effect of transaction specific assets on the duration of utility contracts. The study showed that the presence of these assets had a significant effect on duration of the contracts while greater uncertainty significantly decreases the duration of contracts. Similar significant findings were found by Crocker and Masten (1988) in a study of contracts in the natural gas industry and in a series of studies by Joskow (1985, 1987, 1988 and 1990) of the contracts between coal suppliers and the owners of coal-burning power stations. The reported studies are case studies and the effects of both uncertainty and opportunism on adaptation do not receive receive specific consideration.

At a more general level, opportunism under long term contracts was considered by John (1984). He found that the effect of increased bureaucratic structuring actually increases opportunism. This point of view is supported by Ghoshal and Moran (1996). John (1984) also concluded that long term contracts would only be effective in controlling opportunism if they were combined with methods of social control. This issue is considered more specifically later in this Section with respect to relational norm.

B2.6 RELATIONAL NORMS

A general criticism of transaction cost analysis is that it fails to explain governance by social control structures in the form of norms (Granovetter, 1985). The purpose of this Section is to investigate norms both as a form of governance and as a means of explaining adaptation investments.

Norms have been defined as patterns of accepted and expected sentiments and behaviour shared by members of an exchange system that have the force of a social obligation or pressure (Axelrod, 1986; Bendor and Mookherjee, 1990; Gibbs, 1981; Macneil, 1983; Thibaut, 1968; Thibaut and

Kelley, 1959). Norms have been shown to be a social mechanism that will “simulate the operation of hierarchies” (Stinchcombe, 1985, p.68). This is because norms motivate performance through focusing attention on the shared values of the partners to safeguard and rely on peer pressure and social sanctions to mitigate the risk of opportunistic behaviour.

Norms are of relevance because they provide a general frame of reference, order, and standards against which to guide and assess appropriate behaviour in uncertain and ambiguous situations and since norms involve expectations rather than rigid requirements of behaviour, they create a co-operative as opposed to a confrontational environment for negotiating adaptations (Noordewier *et al.*, 1990).

Although more recent transaction cost analysis work by Williamson (1996, 1999) does not consider the role of norms within exchanges, the early work (Williamson, 1975) did consider the possibility of variations in exchange norms. The role of industry norms as discussed by Macaulay (1963) is recognized explicitly in the original analysis. Williamson (1975) dimensionalized norms along a continuum running from opportunism to stewardship and offered some hints that those differences in norms would have an impact on the structure of relations. Williamson (1991a) does not consider that norms, and other types of what he calls, stewardship behaviour is capable of acting as a form of governance since it is based essentially on social control which is not robust as a means of controlling human behaviour when compared to hierarchical governance.

Incorporation of norms into transaction cost analysis also poses a problem because of the static perspective adopted within this paradigm. Within transaction cost analysis, the individual transaction is the unit of analysis and past and future transactions are not considered. However, it has been shown that norm development takes place over an extended period of time through many interactions between the partners (Håkansson 1982; Frazier and Anita, 1995; Ring and Van de Ven, 1994; Wilson, 1995). For example, Dwyer, Schurr, and Oh (1987) suggest that tacit relational norms emerge as partners interact during the exploration stage of relationship development. Furthermore, norms are designed to enhance the wellbeing of the relationship as a whole” (Heide and John, 1992; p. 34) in which both past behaviour and future anticipated behaviour are of relevance. Studies of norms emphasise that the relationship is the unit of analysis and a dynamic perspective is taken. This contrasts with transaction cost analysis in which the unit of analysis is the individual transaction which means that past and future transactions are not considered. In order for norms to be integrated into transaction cost analysis it is necessary to move from a static to a dynamic perspective and to treat the relationship rather than the transaction as the unit of analysis.

In the remaining part of this Section, the theoretical background to relational norms will be considered.

According to a framework put forward by Macneil (1980), norms within exchanges are arrayed on a continuum that ranges from discrete to relational. Macneil (1980) explains this point by arguing that as the exchanges become more relational they will take on the properties of a “minisociety with a vast array of norms beyond those centered on the exchange and its immediate processes” (Macneil, 1978; p.901). Macneil emphasizes that norms “guide, control or regulate proper and acceptable behaviour” (Macneil, 1980; p.38).

In discrete exchanges the identity of the party is irrelevant, the parties remain autonomous, i.e. the transaction is at arm’s length, and the transaction is typically “sharp in by clear agreement, sharp out by clear performance” (Macneil, 1974; p.738). Relational exchanges are characterized as being longer-term, cooperative and interactive exchanges where the relationship is important in and of itself and there is the expectation that it will provide future and mutual benefits (Paulin *et al.* 1997). The conceptual analysis put forward by Macneil envisages that relational exchanges will take account of the wider historical and social context in which the exchange takes place.

The conceptualization of discrete exchange put forward by Macneil (1974) has been described as a “fiction” by both Williamson (1985, p.71) and Dwyer *et al.* (1987, p. 18) but a better way of looking at the role of discrete is to regard it as an ideal type in the sense put forward by Weber (1922). The role of an ideal type is to serve as an analytical construct that serves the researcher as a measuring rod to ascertain similarities as well as deviations in concrete cases. It provides a point of reference in Macneil’s analysis because he argues that as the “duration and complexity” (Macneil, 1978; p.885) of the exchange increases it will move away from being discrete to become more relational.

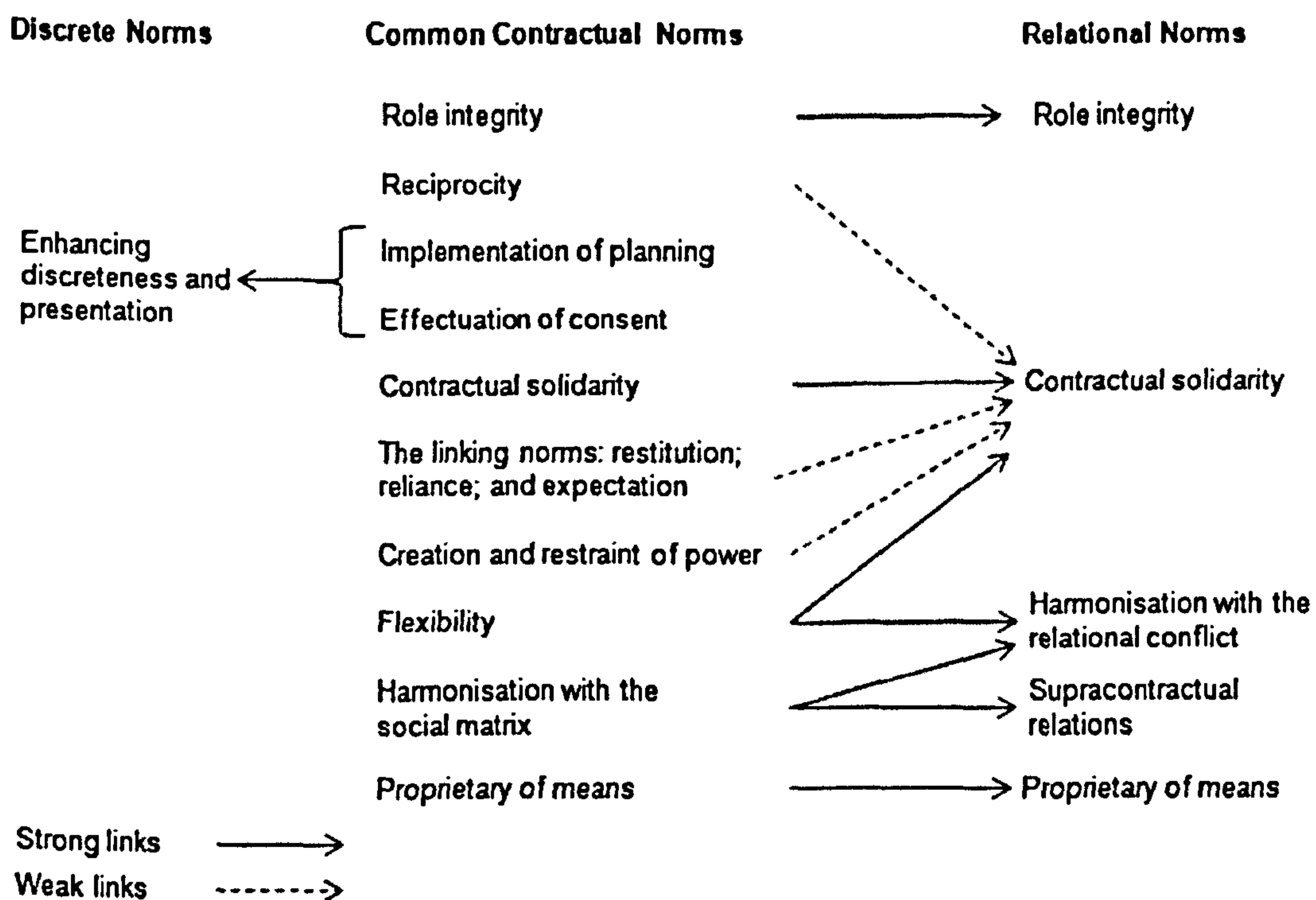
In putting forward his ideas on the role of norms, the focus of Macneil’s thinking is on explaining the limitations of legal theories on contract that fail to consider the role played in norms in governing behaviour between business partners. The essential point made by Macneil (1980) is that even though contracts may be in existence between the parties their actual behaviour is determined by the norms that exist within the relationship. Macneil pointed out that “underlying formal contracts are a host of backstage interpersonal dynamics that mobilise and direct the formal contracting process but are seldom visible or explicitly written into the formal contract” (Ring and Van de Ven, 1989; p.179).

Macneil initially put forward twenty eight dimensions along which governance will vary depending on whether the exchange is relational or not (Macneil, 1978; pp. 14-16). However, Macneil does not

provide any operationalisations of the norms nor does he provide a systematic description of role of the specific norms. His choice of norms was based on his own judgement about what were the most relevant, and the list also suffers from not having any empirical validation. Another more fundamental problem is the number of norms put forward is so large that it would pose considerable problems to subject them to empirical testing.

Macneil (1980) subsequently put forward a revised framework of norms. The framework consists of a shorter list of ten contracting norms : (1) role integrity; (2) reciprocity (mutuality); (3) implementation of planning; (4) effectuation of consent; (5) flexibility; (6) contractual solidarity; (7) restitution, reliance and expectation interests (linking norms); (8) creation and restraint of power; (9) propriety of means; and (10) harmonization with the social matrix.

Figure B2.1: Macneil's common contractual norms and their contributions to relation and to discrete norms. Source: Blois (2002) "Business To Business Exchanges: A Rich Descriptive Apparatus Derived From Macneil's and Menger's Analyses", *Journal of Management Studies*, 39(4), pp.523-551.



Macneil argues that the ten norms will undergo a transformation process. According to Macneil (1980), when an exchange becomes relational five norms have the greatest significance. Two of these ("role integrity" and, "proprietary of means") are identical to two of the common contract

norms with the same name. The other three (“preservation of the relation”, “harmonisation of relational conflict” and, “supracontractual norms”) are each based on a combination of a number of the other eight common contract norms (see Figure B2.1).

The arguments put forward by Macneil (1980) are complex since the transformation process is put forward without any empirical support. Thus a fundamental element of Macneil’s position is that the norms applicable to behaviour at the ends of the spectrum discrete/relational are not mirror images and that, depending on where an exchange falls in the range between discrete and relational, not only is greater or less emphasis given to some of the norms but they are also transformed. The analogy of viewing the common contract norms in a distorting mirror (Blois, 2002) illuminates Macneil’s thinking, which is that the original norms remain the source of the image being received but the image is received in a distorted form.

Macneil also argues that transformation of norms also occurs in the case of discrete exchanges where he argues that two of the common contract norms, “implementation of planning” and “effectuation of consent” are greatly magnified and merged into one norm that he labels: “enhancing discreteness and presentiation”(see Figure B2.1). By creating this term he is seeking to emphasise that an exchange can only be purely discrete if it is 100 per cent planned; 100 per cent consented to and “separated from all else between the participants at the same time and before and after” (Macneil, 1980; p. 60).

The mechanism by which the contracting norms are transformed into either discrete or relational norms is not explained by Macneil (1980). The effect of the transformation appears quite radical in the case of the common contractual norms of reciprocity, implementation of planning, effectuation of consent, flexibility, contractual solidarity, restitution, reliance and expectation interests (the linking norms), and creation and restraint of power. The norms are transformed into a relational norm called preservation of the relation. The implication of Macneil’s thinking seems to be that the norms when they have been transformed into relational norms represent a syndrome of norms of behaviour.

The complexity of Macneil’s depiction of the ten common norms and their process of transformation may be an explanation for why it has not been possible to identify any studies that have operationalised all of the ten norms. Nor does Macneil provide any hypotheses against which his framework can be tested. Accordingly, fundamental questions about the antecedents of relational norms and the consequential effects of relational norms remain unanswered.

Existing research into relational norms is relatively under-developed. A number of papers have investigated the effect of relational norms on behaviour within marketing dyads. Gundlach, Achrol

and Mentzer (1995) found that relational norms had a positive effect on commitment. Dant and Schurr (1992) investigated the effect of the norm of role integrity on conflict resolution strategies. Other papers have investigated the effect relational norms had on perceptions of fairness (Kaufmann and Stern, 1988), trust (Doney and Cannon, 1997), and the level of commitment of the other party (Jap and Ganesan, 2000). The presence of relational norms was found to have a positive effect on these perceptions.

Another group of papers has investigated the effect of relational norms on relationship variables. The duration of relationships was investigated by Haugland (1996). The effect of relational norms on performance was investigated by Noordewier *et al.* (1990), Lusch and Brown (1996), Bello and Gilliland (1997) and Cannon *et al.* (2000). The effect on relationship quality was investigated by Gassenheimer *et al.* (1995) and the effect on acquisition and operating costs was investigated by Cannon and Homburg (2001). In none of these papers were significant findings found for the hypothesised linkages and the Noordewier *et al.* (1990) paper only found a positive, significant linkage when the environment was characterised by high uncertainty.

The extent to which relational norms are capable of acting as a form of governance is an unresolved issue. Certainly, Williamson (1991a, 1996) has doubted the capacity of all social structures to act as successful governance structures. However, even advocates of relational norms suggest that the influence of norms may be limited in practice. Heide and John (1992) said that they felt the norms would only have a moderating influence and Kauffmann (1987) felt that relational norms would not be deterministic of behaviour.

B2.7 RELATIONAL NORMS AND ADAPTATION INVESTMENTS

In both the political economy framework (Stern and Reve, 1980) and to the IMP model (Håkansson, 1982; Metcalf, Freer and Krishnan, 1992), co-operation and relational closeness have been put forward as an antecedent to decisions to make adaptation investments. Therefore, since relational norms have been put forward as something that encourages co-operative behaviour Cannon and Perreault (1999) and relational closeness (Dwyer *et al.*, 1987), it is reasonable to anticipate a strong correlation between the presence of relational norms and decisions to make adaptation investments. The existing research which has tested the direct effect of relational norms on decisions to make adaptation investments is now considered.

Cannon and Perreault (1999) found that there was a strong correlation between the presence of cooperative norms in relationships and adaptation investments occurring. In presenting the idea of

cooperative norms, Cannon and Perreault (1999, p.443) do not provide any specific empirical basis for their operationalisation apart from saying that the construct “ cuts across many of the relational norms proposed by Macneil (1980), including flexibility in response to changing conditions (Heide and John, 1992) and solidarity (Kaufmann and Stern, 1988)”. The exact role of particular norms is unclear from the reported findings”.

The presence of the norm of information exchange as an influence on adaptation has been considered specifically by Noordewier (1990) who argued that adaptation is enhanced by the increased presence of the norm of information exchange, together with the norms of solidarity and flexibility but the model put forward does not specifically test this proposition. In a subsequent paper by Lusch and Brown (1996), it was argued by the authors that the three norms of information exchange, solidarity and flexibility are linked with increased adaptation but the proposition is not specifically tested.

Therefore, although Cannon and Perreault (1999) put forward some evidence linking co-operative norms with decisions to make adaptation investments, several areas remain unclear. The first is the exact role that particular norms play in such decisions. The norms of information exchange, solidarity and flexibility are of particular relevance here since the effect of these norms was not tested specifically by Lusch and Brown (1996). The second aspect that is in need of some clarification is whether relational norms have the same positive effect on decisions to make both technological and non-technological adaptation investments. In Chapter B it was shown that adaptation investments were made in the Japanese motor industry (Dyer, 1996) and in other situations were made even though hierarchical governance was not in place. The inference from these decisions is that some form of social governance structure, such as relational norms was in place but also it raises an issue regarding the type of asset that is invested in has any relevance. Technological assets may induce a different reaction to non-technological assets.

The effect of adaptation investments on relational norms has also received some limited consideration. Heide and John (1990) found that adaptation investments significantly increased the level of joint action within relationships. The term joint action was defined by the authors to include close working relationships that included joint planning of activities. Ivens and Blois (2004) use this paper as well as the earlier paper of Palay (1984) as evidence of the antecedents of the relational norm of implementation of planning. However, the role of this norm is not specifically included (or even mentioned) by Heide and John (1990) (or by Palay, 1984) but since the type of behaviour which is characterised as joint action equates to behaviours seen when the

norm of implementation of planning is present (Cannon, Achrol and Mentzer, 1995), the paper does provide circumstantial support for the proposition.

B2.8 RELATIONAL NORMS, UNCERTAINTY AND ADAPTATION INVESTMENTS

In the Chapter B1 it was shown that the effect on governance decisions of different forms of uncertainty had been identified in the literature. In particular, it was shown that technological uncertainty did not induce vertical integration decisions whereas volume uncertainty did lead to vertical integration. In this Section of the literature review the relationship between relational norms, uncertainty and adaptation will be considered. It will consist of two parts. The first part considers the relationship between relational norms and uncertainty and the second part considers the interaction effect on adaptation investments of relational norms and uncertainty. In each part the existing research on relational norms that are of relevance to the discussion will be high-lighted.

Uncertainty is depicted as causing a problem within transaction cost analysis because of the incomplete contracts problem which presents the future as fixed but unpredictable to boundedly rational decision-makers. Although it has not been possible to identify any research that has specifically tested the direct effects of relational norms on uncertainty, the following observations can be made about the existing research on relational norms.

Several norms are associated in the literature with behaviours that may counter the negative effects of uncertainty. Since uncertainty is depicted within transaction cost analysis by Williamson (1975) as unpredictability, the norm of information exchange is associated with an increased willingness to provide information about future plans (Bonner and Calantone, 2005), keeping exchange partners advised of changes that may affect them (Heide and John, 1992) and providing information about events that may affect the other party (Lusch and Brown, 1996).

Uncertainty causes disturbances to have a negative effect on relationships (Williamson, 1991). Norms of behaviour that help the parties to the relationship to cope with the disruptive effect of coping with uncertainty are likely to counter the negative effects. The relational norms of solidarity and flexibility appear to be of relevance here.

The norm of solidarity implies continuity of exchanges and future co-operative intent (Kaufmann and Stern, 1988). The norm of flexibility is associated with an increased willingness to make changes to meet the changing needs of exchange partners (Noordewier, John and Nevin, 1990). The presence of these norms will encourage the parties to work through the disruptive effects of uncertainty. However, it has not been possible to identify any research which has tested the effects

of relational norms on uncertainty.

It has not been possible to identify any research which has tested the interaction effect on adaptation investments of relational norms on uncertainty. However, some guidance on the likely effects can be found in a study by Noordewier, John and Nevin (1990). In this study significant evidence was found that performance was enhanced by the effect of relational elements on uncertainty. The authors used a relational syndrome of norms so it is not possible to identify the impact of individual norms on the outcomes. Performance in this paper was related to the costs relating to purchase and acquisition of spare parts. The interaction effect on adaptation investments of relational norms on uncertainty has not been specifically tested in the literature and represent an identifiable gap in our understanding.

B2.9 RELATIONAL NORMS, OPPORTUNISM AND ADAPTATION INVESTMENTS

Several papers have investigated the effects of relational norms on opportunism. Gundlach *et al.* (1995) hypothesized that opportunism would be negatively related to the existence of relational norms. They tested the effects of a syndrome of relational norms made up of solidarity, mutuality, flexibility, role integrity, and harmonization of conflict based on previous conceptualisations in the literature on opportunism. The authors found strong support for the hypothesis. Achrol and Gundlach (1999) applied the operationalisation of relational norms developed by Gundlach *et al.* (1995) in a computer simulation study. Just as in the Gundlach *et al.* (1995) study, a strong negative correlation between the two constructs was reported. The findings are of limited generalisability since the data were obtained by means of a computer simulation involving respondents who did not have direct personal experience of buyer –seller relationships.

Additional findings that support a strong negative correlation between the presence of relational norms and opportunism include Brown *et al.* (2000), who used a research setting of vertical relationships within the hotel sector in north America. The authors found strong positive support for their hypothesis. The relational norms were modeled as the norms of preservation of the relationship, role integrity and harmonization of conflict. The authors state that they have adopted these three norms, which are three of the five relational norms depicted by Macneil (1980), set out in figure B2.1 of this Section. No explanation is offered as to why the other two norms are not included in the model. In presenting these norms as a syndrome of norms (Brown *et al.*, 2000) it is not possible to determine what the influence, if any, of the individual norms was in the study. Lai *et al.* (2005) carried out a survey of 131 Taiwanese purchasing managers in the ICT sector, using a

syndrome of three relational norms made up of information exchange, solidarity and flexibility. The syndrome was adopted from Heide and John (1992). Relational norms were found to reduce opportunism.

Adaptation investments create dependence in the sense that the investing party becomes vulnerable to the opportunistic behaviour of the exchange party. Heide and John, 1992 adopted the logic of Grossman and Hart (1986) and treated the investment process as a decision control process. According to their logic, decision control is a zero sum phenomenon in which one party gain additional control in a relationship only at the expense of the other party. Heide and John (1992) applied this logic to see adaptation investments by buyers led to decreased control by the buyer over the supplier. The authors found significant support for this proposition. The construct of control was operationalised to include items relating to matters such as design and engineering changes, selection of sub-suppliers, quality control procedures and production processes. Therefore, control refers to the ability to influence several business critical matters that could involve situations in which opportunism could arise. Accordingly, the Heide and John (1992) findings should be seen as evidence of a connection between adaptation investments and a loss of control over situations in which opportunism could arise rather than as direct evidence of a connection between adaptation investments and opportunism arising.

Heide and John (1992) also considered the interaction effect on supplier decisions of relational norms and adaptation investments. The authors found significant support for the proposition when relational elements were present at a high level but not at a low level. The relational elements were made up of a syndrome of norms made up of information exchange, solidarity and flexibility. The paper is limited in the sense that it does not include results for the individual norms but the findings are of importance in the sense that they show that relational norms can still influence decision control even when a situation of vulnerability created by adaptation investments is in existence. However, the paper does not specifically test the interaction effect of relational norms and opportunism on investment decisions. This represents an important research gap.

Rokkan, Heide and Wathne (2003) specifically tested the interaction effect on opportunism of the norm of solidarity on adaptation investments. They found significant support for the proposition that when the norm of solidarity is strong the effect of making adaptation investments is to decrease opportunism; they also found that where the norm was weak, there was actually an increase in opportunism. Vazquez and Iglesias (2007) tested the effect on opportunism of the interaction of relational norms and credible commitments. They found significant support for the proposition that where relational norms are present in a relationship, adaptation investments by a distributor will not

lead to more opportunism when the other party is a supplier. However, they did not find support where the investing party is a supplier and the other party is a distributor. The authors rationalise the different findings because the focal area of the study was the Spanish processed food market where distributors face extremely high levels of competition and there is a continuous need to maintain pressure on suppliers in order to stay competitive. The paper relies on a syndrome of different relational norms without setting out results for individual norms.

PART C

CONCEPTUAL FRAMEWORK AND RESEARCH METHODOLOGY

This Section comprises four chapters:

- ❖ *Chapter C1: Conceptual framework*
- ❖ *Chapter C2: Research methodology (I)*
- ❖ *Chapter C2: Research methodology (II)*
- ❖ *Chapter C2: Research methodology (III)*

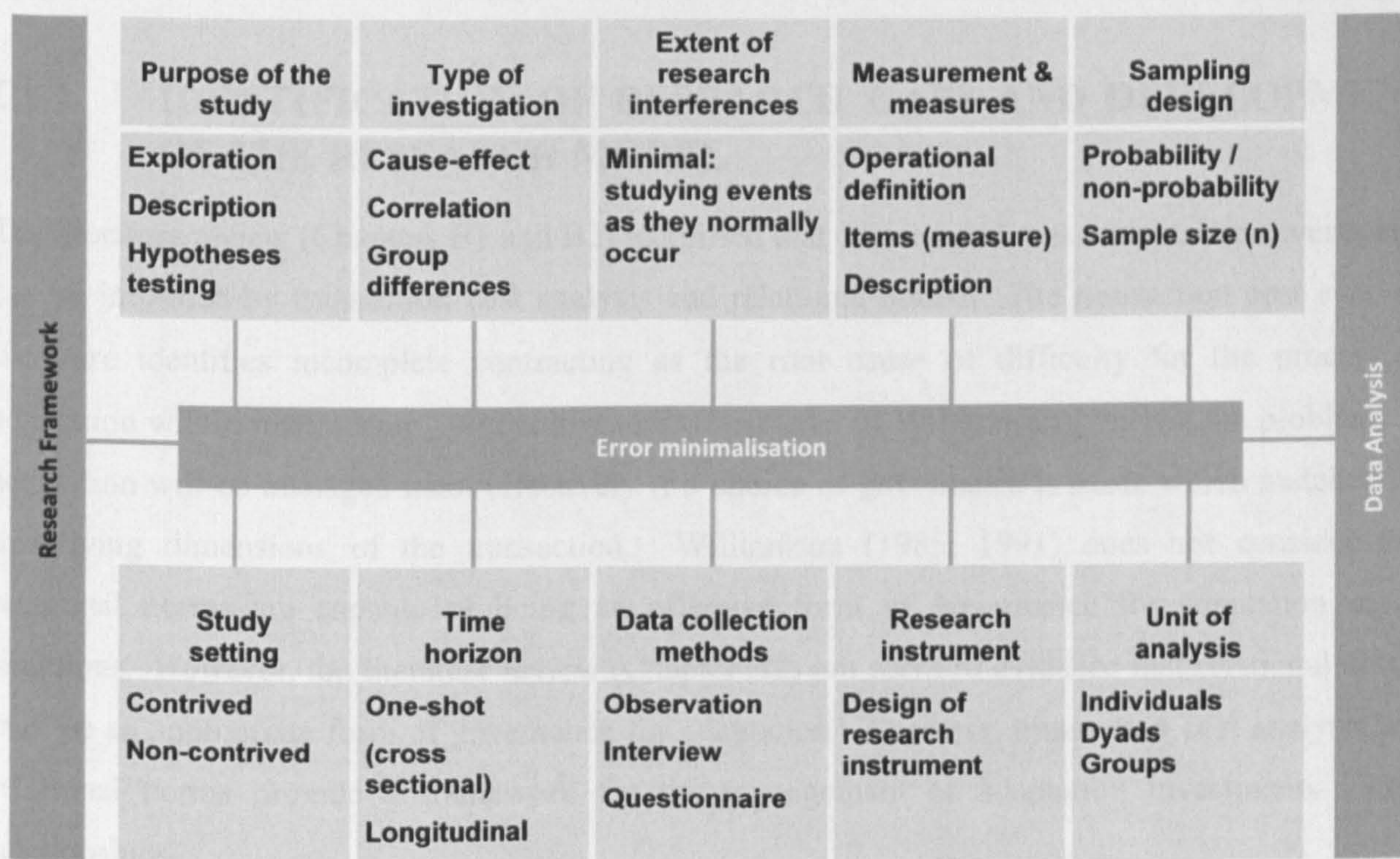
CHAPTER C1: CONCEPTUAL FRAMEWORK

C1.1 BACKGROUND TO THE CONCEPTUAL FRAMEWORK

The structure of this, and the following three chapters in this part of the thesis, follows the research design framework suggested by Sekaran (2002) which is illustrated in Figure C1.1. Such a framework can be defined as:

“The specification of methods and procedures for acquiring the information needed to structure or solve problems. It is the overall operational pattern or framework of the project that stipulates what information is to be collected, from which sources, and by what procedures.” (Green *et al.*, 1988: p. 68)

Figure C1.1: The research process



Source: Sekaran, U. (2002) *Research Methods for Business: A skill Building Approach*. 4th edition. New York: John Wiley and Sons Inc.

The adoption of a research design framework ensures that the methodological considerations and decisions will be relevant to the research problem, and that economical procedures will be employed in fulfilling the research aim and objectives (Churchill, 1979).

Each of the cells depicted in Figure C1.1 represents a discrete, but not mutually exclusive, set of activities/decisions designed to ensure the robustness of the research. Given that written communications must be presented sequentially, each cell in the research design is discussed

separately. However it must be noted that research is an iterative process and hence some of the methodological elements, particularly the ones associated with data collection are interlinked with other elements (Hawkins and Tull, 1994).

For each cell the main alternatives are listed in Figure C1.1 while in the text emphasis is placed on the rationale and operational explanation of the adopted alternative(s). The shaded cell in Figure C1.1 depicts the component of the research process dealt with in the specific chapter, e.g., the main purpose of this chapter is the development and justification of the research framework.

In the next Section the research gaps are identified followed by the development of the research model. to such gaps. This is followed by details of the competing models (see Sections C1.2 and C1.3). The chapter concludes with Section C1.4, which presents the philosophical foundations of this research.

C1.2 IDENTIFICATION OF RESEARCH GAPS AND DEVELOPMENT OF THE RESEARCH MODEL

The literature review (Chapters B1 and B2) identified that decisions to make adaptation investments can be informed by transaction cost analysis and relational norms. The transaction cost analysis literature identifies incomplete contracting as the root cause of difficulty for the process of adaptation within relationship. According to the strictures of Williamson (1991a), the problems of adaptation will be managed most effectively if a choice of governance is made which matches the underlying dimensions of the transaction. Williamson (1985, 1991) does not consider that relational norms are capable of being an effective form of governance for adaptation in all situations. However, the literature review (Chapter B2) put forward evidence that relational norms may be an appropriate form of governance for adaptation. Together, transaction cost analysis and relational norms provide a framework for the management of adaptation investments within relationships.

The review of adaptation in the transaction cost analysis literature identified that uncertainty and opportunism will impact on the process of making adaptation investments within relationships (see Chapter B1). Furthermore, the review also shows that according to Williamson, the difficulties posed by uncertainty and opportunism need to be managed through a choice of governance that will be effective if adaptation is to be successfully achieved within relationships.

This study is designed to examine the effectiveness of relational norms as a governance structure in relation to decisions to make adaptation investments. This will involve the author building on

previous calls for further research in areas such as the use of social governance structures as a means of governance. In the remainder of this Chapter, the author will present the high level research model and related research hypothesis before presenting the lower level operational model and hypotheses.

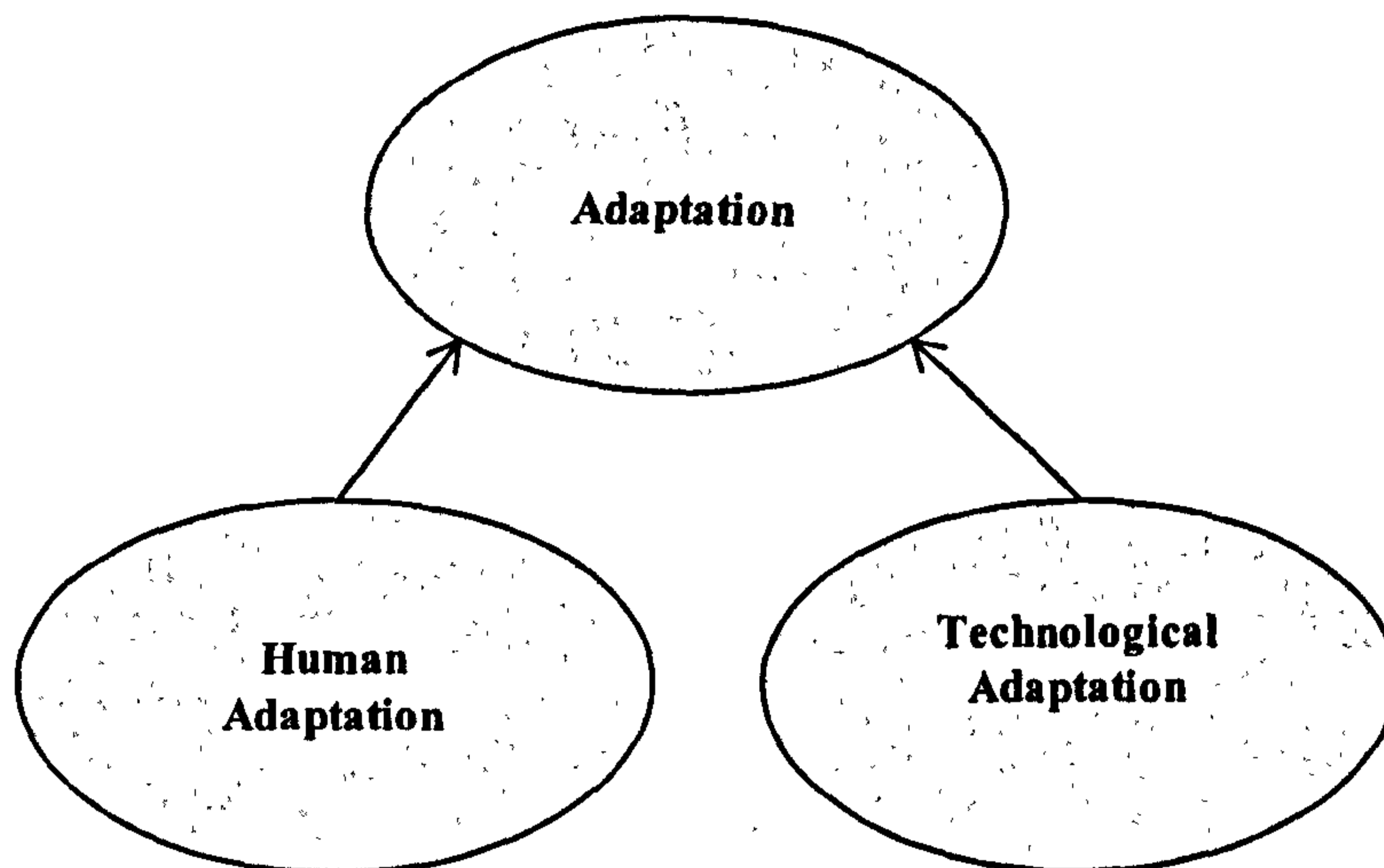
C1.3 RESEARCH MODEL

The aim of the study (see Chapter A1.3) is to examine the effectiveness of relational norms as a means of enhancing adaptation investment within relationships. The review of the extant literature on adaptation investments within transaction cost analysis identified gaps which have been used to develop the research model (see Figure C1.4). Using this model, the author will investigate adaptation investments within relationships. To assist the reader, the author provides a brief overview of adaptation investments and relational norms before presenting the rationale for the five hypotheses. This starts with adaptation investments.

C1.3.1 Adaptation investments

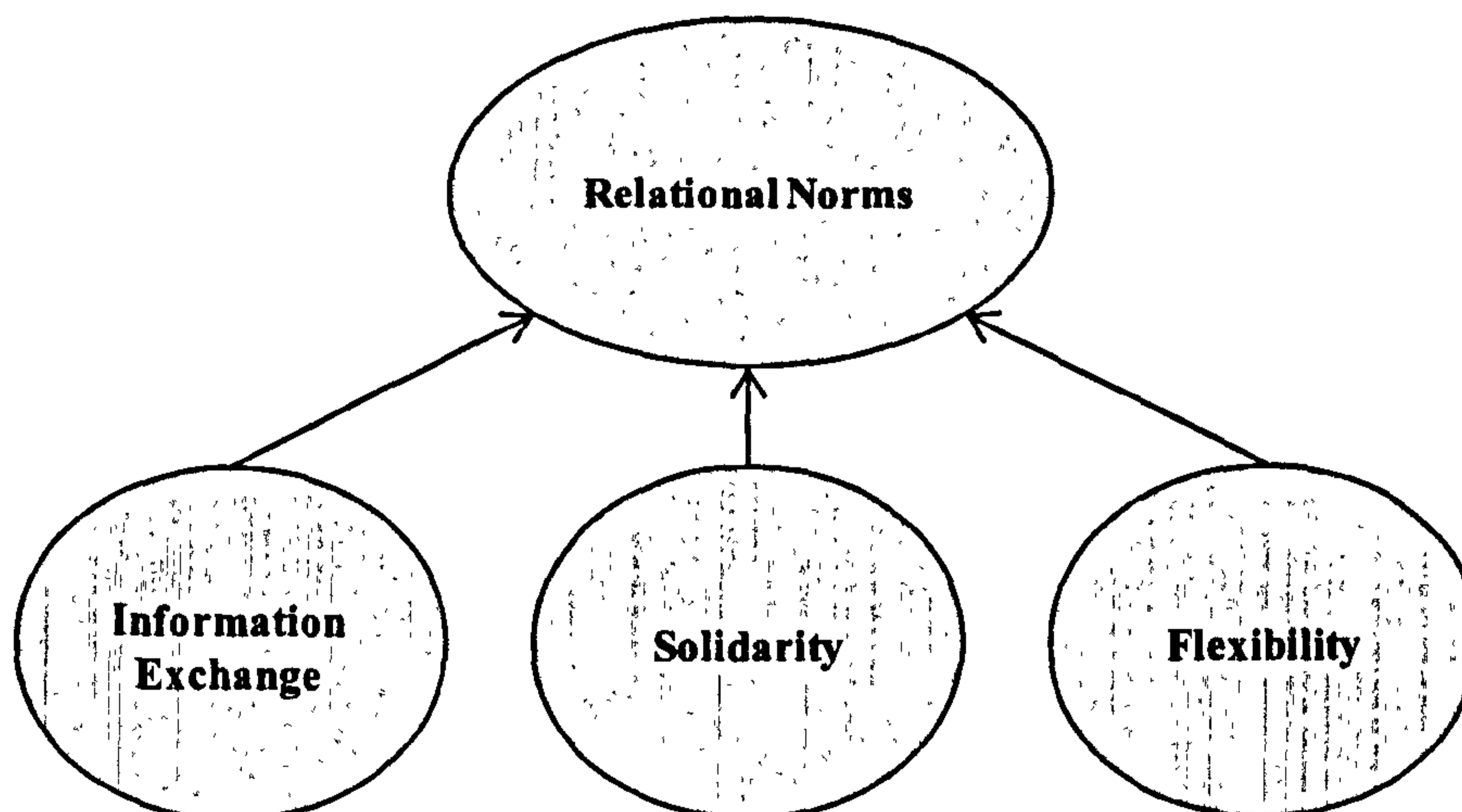
Within the literature review it was shown that transaction specific assets are theoretically analogous to adaptation investments. In general, the focus of existing research has been on examining the effect that the presence of these assets has on governance decisions (Artz, 1999; Heide, 1994; Heide and John, 1988, 1992; Joshi and Stump, 1999; Neilson, 1996). The assets are treated as an independent variable and are viewed as exogenous to the governance structure decision. Their theoretical role has been to test the predictions regarding choice of governance set out in transaction cost analysis. The status of existing research was noted by Williamson (1993, p. 27) "To be sure, there is much to be done, hence there is no basis for complacency. . . most (empirical studies) are regressions in which asset specificity appear as independent variables",

This study is a response, at least in part, to the call from Masten (1995, p.60) who said that "The specificity of assets and the level of investment in those assets that determine the size of appropriable quasi-rents are themselves decision variables. The location of facilities, the adoption of specialized designs or equipment, and the scale of investments should all, by rights, be treated as endogenous variables." Accordingly, in this study, adaptation investments is the dependent variable. In this study the adaptation construct, which comprises human and technological adaptation, is depicted in Figure C1.2.

Figure C1.2: The Adaptation investment construct

C1.3.2 Relational norms

Literature on relational norms has tended to present relational norms as a syndrome made up of underlying norms (e.g., Heide and John, 1992) and to not provide details of the results generated by testing the underlying norms independently of the syndrome itself. In this particular study, the construct of relational norms is made up of three norms: information exchange, solidarity and flexibility. This is illustrated in Figure C1.2.3.

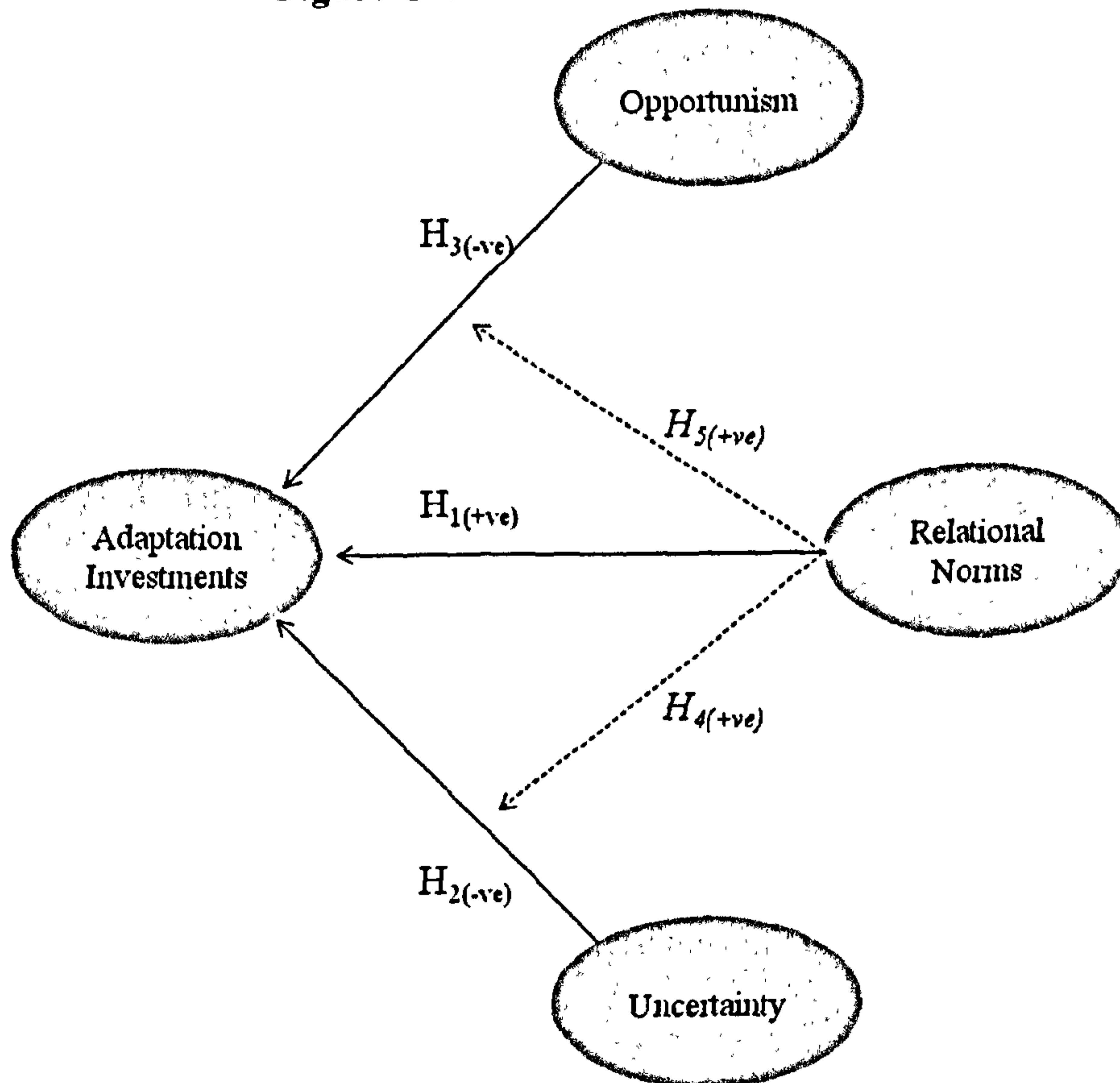
Figure C1.3: The relational norms construct

By presenting relational norms both as a syndrome in the research model and allowing for them to be tested independently within the second competing model, the author will be adding to the body of knowledge on the effect of relational norms.

Relational norms and adaptation

The existing literature on relational norms is lacking in studies where their effects on adaptation have been specifically investigated. However, it is possible to develop an argument that relational norms are likely to have a positive effect on adaptation investments. In several papers it has been shown that relational norms are associated with an increased closeness (Dwyer *et al.*, 1987) and it has also been shown that relational norms are associated with increased cooperation within relationships (Cannon and Perreault, 1999).

Figure C1.4: The Research Model



In other research paradigms the existence of these relational qualities – closeness and cooperation – have been shown to be associated with a positive effect on adaptation within relationships. For example, within the IMP paradigm, Ford (1982) demonstrated that adaptation was associated with closeness within relationships. Metcalf, Frear and Krishnan (1992), found a positive association between co-operative behaviour and adaptation occurring within relationships. Therefore, the following hypothesis is proposed.

H₁: There is a positive relationship between relational norms and adaptation.

Uncertainty and Adaptation

In Chapter A, it was shown that Williamson's arguments concerning adaptation are based on incomplete contracting theory. According to Williamson's arguments (1975, 1985, 1991), boundedly rational contracting parties are unable to create contracts that anticipate all future contingencies because the effect of uncertainty is to make the future unpredictable. As the future unfolds and unpredicted events occur the parties will need to work out how to deal with the new events. This will incur transaction costs in the form of time and effort spent negotiating over the changes needed. Uncertainty, therefore, has a negative effect on adaptation, according to Williamson (1991a) and it necessitates the parties putting in place governance structures that can manage the process of adaptation.

In Section B1.2 it was shown that the predominant theme in the literature on uncertainty within transaction cost analysis is to investigate its effect on governance decisions. Although, Williamson predicts that uncertainty will have a negative effect on adaptation, empirical investigations are lacking. This lack of literature also extends to investigations in the specific effect of uncertainty on adaptation investments. In Section B1.2 it was shown that although the predicted effects of uncertainty on adaptation investments are negative, it has not been specifically investigated within transaction cost analysis although some investigations have occurred in other paradigms. It is therefore proposed that:

H₂: There is a negative relationship between uncertainty and adaptation.

Opportunism and adaptation

In Section B1.3, it was shown that the process of adaptation is vulnerable to the risk of opportunism occurring, according to Williamson (1975), unless appropriate governance structures are in place. Research into the main effects of opportunism on adaptation in general and on the effects of opportunism on adaptation investments in particular are lacking. Therefore, in order to test the main effect of opportunism on adaptation investments, and in order to test the arguments set out in Chapter 2 in the literature review, it is therefore proposed that:

H₃: There is a negative relationship between opportunism and adaptation.

The effect of relational norms on the negative relationship of uncertainty on adaptation.

The fourth element of the Research Model relates to the capacity of relational norms to influence adaptation in circumstances in which uncertainty is present. In order to assess the capacity for relational norms to act as a governance structure it is necessary to enquire into their ability to cope

with the effects of uncertainty and opportunism on adaptation. Since specific investigations into the effect on adaptation of controlling the negative effects of uncertainty by means of relational norms are lacking, it is necessary to advance some arguments concerning the likely outcome. It has been shown that more collaborative behaviour within relationships dampens the effects of uncertainty (Joshi and Campbell, 1999). Jap (1999) also found that more collaborative relationships led to more adaptation occurring within relationships. Since relational norms are associated with more collaborative behaviour (Cannon and Perreault, 1999) it is proposed that:

H₄: The negative relationship between uncertainty and adaptation decreases for relatively high levels of relational norms.

The effect of relational norms on the negative relationship of opportunism on adaptation.

In the literature review it was shown that Heide and John (1992) adopted an argument put forward by Grossman and Hart (1986) which suggests that decision control is a zero sum game in which an increase in one party's control comes at the expense of the other party. Heide and John (1992) demonstrated that investments in transaction specific assets led to a loss of control by the investing party which arises out of the dependence created by the investment in the asset. This implies, according to the logic of transaction cost analysis that the investing party will be vulnerable to opportunism. However, the important finding made by Heide and John (1992) was that in circumstances in which relational norms were present at high levels a loss of control did not take place from the buyer (as the investing party) to the supplier. Heide and John (1992) hypothesised that in such situation the effect of high levels of relational norms interacting with investments in transaction specific assets was to lead to an increase in control passing to the buyer. This finding implies that the risk of opportunism will also be reduced in such a situation. However, since the Heide and John (1992) did not specifically test the effect of the interaction of relational norms and opportunism on adaptation, it is appropriate that it is investigated. Accordingly, it is proposed that:

H₅: The negative relationship between opportunism and adaptation decreases for relatively high levels of relational norms.

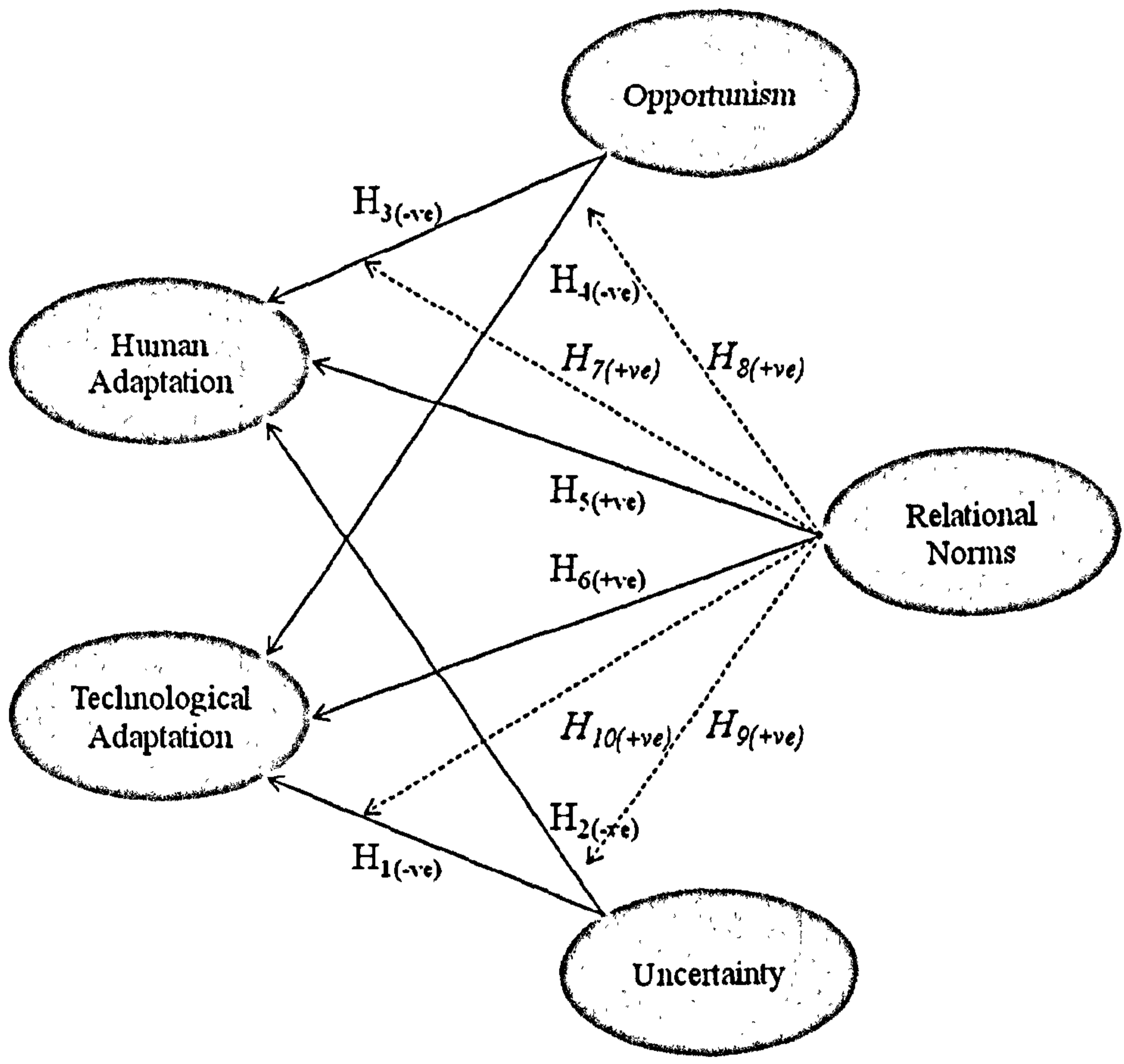
C1.4 COMPETING MODELS

There is general agreement that when examining multiple structural relationships (as in this study), the researcher should compare rival or competing models rather than testing a single model (Bollen and Long, 1992). In this study, the research model has been disaggregated and two competing

models comprising lower order dimensions of the research model constructs are presented in Figures C1.5 and C1.6.

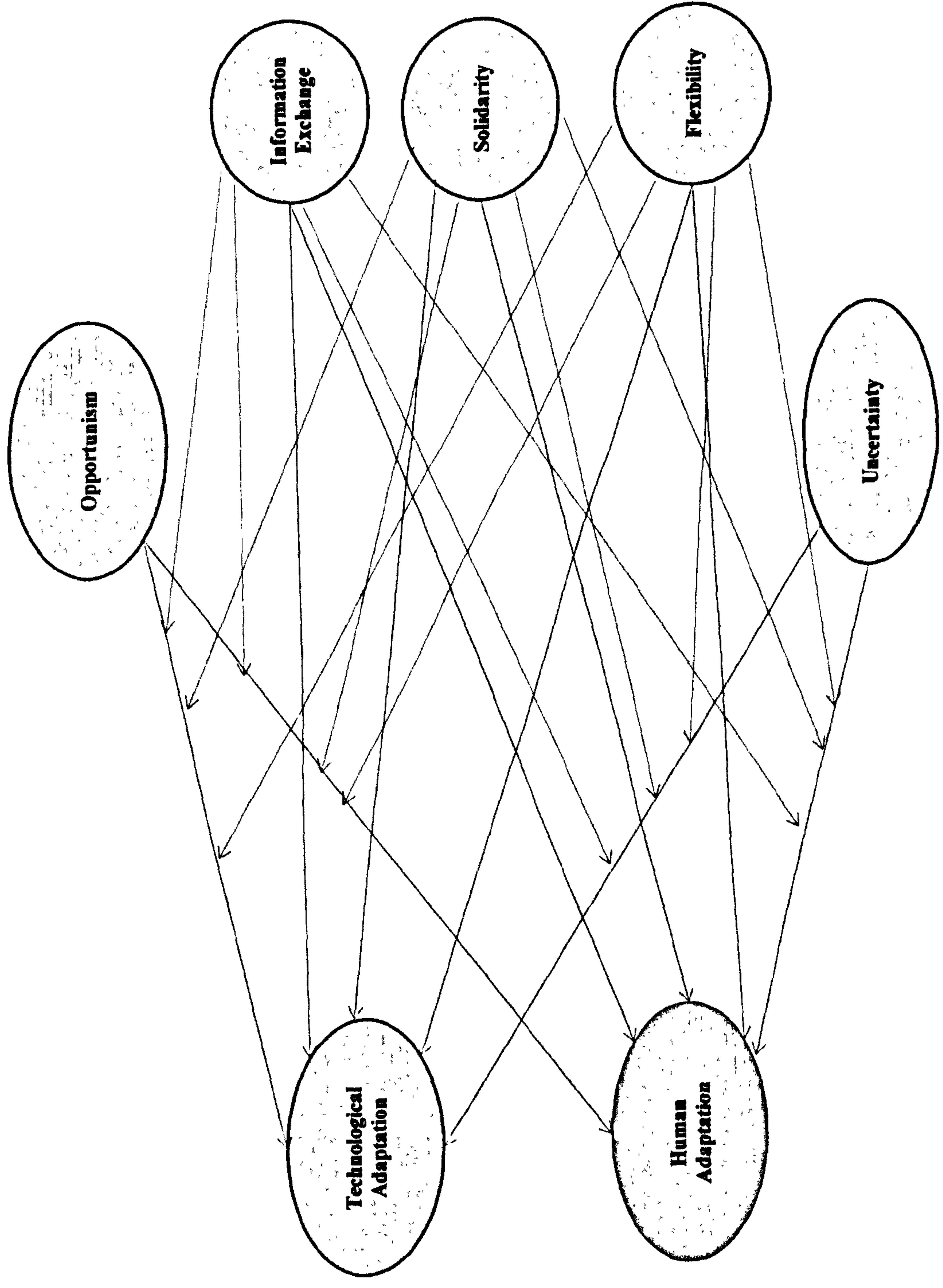
In the first competing model, the adaptation construct is disaggregated into human and technological adaptation.

Figure C1.5: The First Competing Model



In the second competing model, relational norms are disaggregated into the norms of information exchange, solidarity and flexibility. For visual simplicity and brevity, the hypotheses are not presented here but are in line with the general rationale and logic presented above. They have the same signs as the research model.

Figure C1.6: The Second Competing Model



C1.5 PHILOSOPHICAL ORIENTATION AND RESEARCH ACTIVITIES

From the preceding comments in this Chapter, it is clear that this study will be undertaken in accordance with the principles of scientific enquiry which necessitate a systematic, step-by-step, logical, organized and rigorous process of identifying the problems, gathering data, analysis of the data and drawing empirically derived conclusions.

The philosophical paradigm that this research study is located within is best explained by first examining the differences between empirical and theoretical studies. According to the Oxford Companion to Philosophy (1995, p.226), “empirical” means to be “based on experience”, The definition set out in this publication goes on to state that experience means something that is assimilated through sensory experience, meaning that “an idea or concept is empirical if it is derived ultimately from the five senses, to which introspection is sometimes added”, The Oxford Companion to Philosophy (1995, p.870), defines “theory” as “an attempt to bind together (in) a systematic fashion the knowledge that one has of some particular aspect of the world of experience”, In order for an empirical study to be carried out there needs to be some level of “understanding of the material under investigation and therefore some kind of theoretical position” (Remenyi *et al.*, 2005; p.31). The approach of empiricists is to make conclusions based on studying observations and collecting related evidence; the conclusions made by the empiricists contribute to the body of knowledge on the subject. The approach of the theorist is, however, different in that they will choose to study the subject without actually observing or collecting any evidence. This study will adopt an empirical approach.

Within empirical studies, two main orientations can be identified: positivism and phenomenology. Phenomenology is defined by Cohen and Manion (quoted by Remenyi *et al.*, 2005; p.31), as “ a theoretical point of view that advocates the study of direct experience taken at face value, and one which sees behaviour as determined by the phenomena of experience rather than by external, objective and physically described reality”,

Researchers adopting a (logical) positivist approach are considered to be objective in their analysis, and to interpret a tangible, social reality. This position is predicated on the acceptance of a belief that the social world exists externally and that it is capable of being objectively measured (Easterby-Smith *et al.*, 2002). A positivist approach assumes that a process of observation will be undertaken, evidence will be produced and then a process of generalisation or mathematical modelling of the object of the study will be undertaken. Additionally, the principle of parsimony (sometimes referred to as “Ockham’s razor”) will be observed. The Oxford Companion to

Table C1.1: Key Features of Positivist and Phenomenological Paradigms

	Positivist Paradigm	Phenomenological Paradigm
Basic Beliefs	World is external and objective. Observer is independent Science is value-free	World is socially constructed and subjective Observer is part of what is observed Science is driven by human interest
Researchers should :	Focus on facts Look for causality and fundamental laws. Reduce phenomena to simplest elements. Formulate and test hypotheses.	Focus on meaning Try to understand what is happening Look at totality of each situation. Develop ideas through induction from evidence
Preferred method	Operationalise concepts so that they can be measured. Take large samples Use multiple methods to establish different views of phenomena	Small samples investigated in depth or over time

Source: Remenyi, D., Williams, B., Money, A & Schwartz, E. (2005) *Doing Research in Business and Management: An Introduction to Process and Method*. London: Sage Publications Ltd (p.104).

Philosophy (1995) describes parsimony as “a methodological principle dictating a bias towards a simplicity in theory construction, where the parameters of simplicity vary from kinds of entity to the number of presupposed axioms to characteristics of curves drawn between data points”, By way of illustration, the main features of the positivist and phenomenological paradigms are set out in Table C1.1.

C1.6 SUMMARY

From the above it is clear that this study has attempted to adhere to the principles of scientific enquiry which involves a step by step, logical, organized and rigorous sequence of identifying problems, gathering data, analyzing the data and drawing valid conclusions.

The philosophical foundations of this research are located partially within logical empiricism (i.e., use of formative measures) and mainly within scientific realism (i.e., use of reflective measures). In this respect, it adheres to the view expressed by Hunt (2002), who believes that although different research programmes in marketing science rely on both kinds of measures, realist measures predominate. This orientation stems from the author’s conviction that all data can be classified and measured and, consequently, should be collected through quantitative methods as compared to the qualitative means of data collection that lead to phenomenological or constructivist orientation (Ghuri *et al.*, 1995).

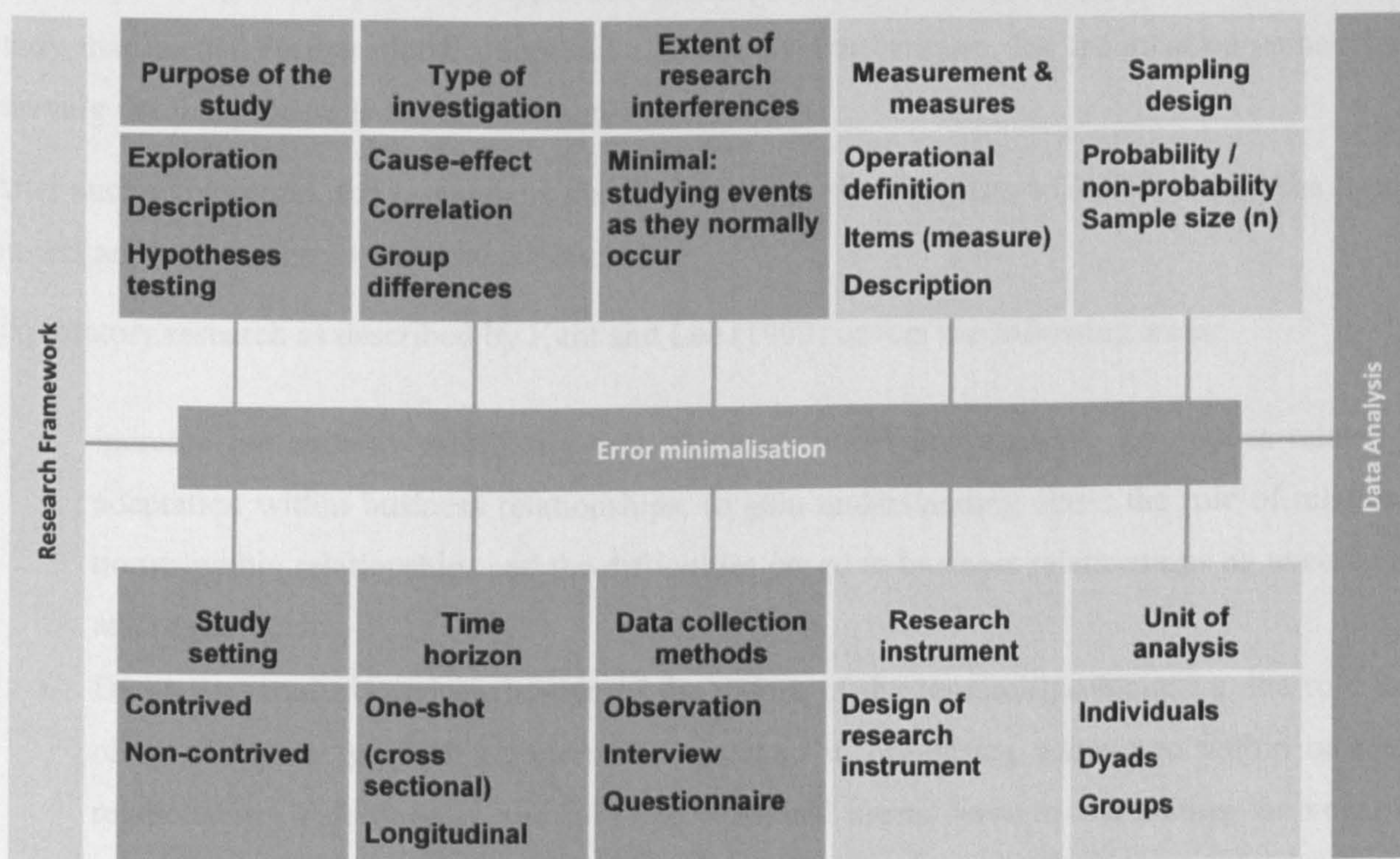
The above clearly reflect the adopted methodology, i.e., starting with a theoretical framework, followed by the development of a research model, empirical research, data analysis and finally concluding with logical deductions based on the results of this study. Consequently, we can say that a hypothetico-deductive method of research has been followed (Sekaran, 2002).

The next chapter discusses the issues pertaining to study setting, type of investigation, research interference, data collection methods and the formulation of the research instrument (questionnaire)

CHAPTER C2: RESEARCH METHODOLOGY (I)

The description of the methodological research considerations designed to provide the operational framework for the study is divided into three chapters (i.e., chapters C2, C3 and C4). Figure C2.1 below highlights the research design issues that are to be discussed in this chapter. These are the purpose of the study (Section C2.1), study setting and extent of research interference (Section 2.2), type of investigation (Section 2.3), time horizon (Section 2.4) and data collection methods (Section 2.5).

Figure C2.1: The research design (for Chapter C2)



Source: Sekaran, U. (2002) *Research Methods for Business: A skill Building Approach*. 4th edition. New York: John Wiley and Sons Inc.

C2.1 PURPOSE OF THE STUDY

It is possible to categorise research methodologies for investigating marketing phenomena into four basic types (Kinnear and Taylor (1996) These are exploratory, descriptive, hypotheses testing and model building. Given the nature of this study, exploratory, hypothesis testing and model building were employed.

C2.1.1 Exploratory research

Prior to the field study, exploratory research was undertaken, designed to shape the direction, structure and operationalisation of the main study (Churchill, 2001).

The purpose of the exploratory research process is a progressive narrowing of the scope of the research topic and a transformation of the discovered problems into defined ones, incorporating specific research objectives. The exploratory stage of the research process initially consisted of a thorough review of existing academic literature, examination of other forms of published material, and personal observations. This provided a broad overview of the issues identified as relevant to this study. Using this exploratory approach the author was able to identify issues relevant to this study that needed further clarification and elaboration. Furthermore, the information gained from carrying out this process is fed into the survey instrument.

After such exploration, the researchers should know exactly what data to collect during the formal project and how the project will be conducted.

Exploratory research as described by Kent and Lee (1999) covers the following areas:

- Increase the author's familiarity with the topic under investigation, i.e., issues related to adaptation within business relationships, to gain understanding about the role of relational norms within relationships and the difficulties posed to business relationships by uncertainty and opportunism.
- Diagnosis, analysis and evaluation of the nature of the research problem, i.e. the role that relational norms play as a governance structure in organising adaptation within business relationships. Additionally, the role that relational norms have in attenuating the negative effects of uncertainty and opportunism on adaptation within business relationships.
- Establishment of the priorities and objectives of the research, i.e., to determine the extent to which the presence of relational norms can influence adaptation within business relationships and to identify factors that would require further investigation.
- Provision of information related to practical problems involved with the research, such as determining issues of data collection, i.e., the style of enquiry and willingness by organizations and individuals to cooperate with the study. For example, due to commercial sensitivity, a number of organizations did not take part as a matter of course.
- Ideas, insights and suggestions for hypotheses that could be tested, i.e., the interaction effect of relational norms and both uncertainty and opportunism on adaptation occurring within relationships.

More specifically, in view of the complexity of the subject matter, prior to the commencement of the field data collection phase, face-to-face interviews were conducted with expert informants. The Collins Concise Dictionary (1997) defines experts as persons who have extensive skills or knowledge in a particular field. The decision to seek information from experts is in line with Dalebout and Wierenga's (1997) assertions on the importance of soliciting expert opinions and perceptions about complex marketing phenomena. In addition, using experts during the exploratory phase has been recognised by scholars as a valid way of obtaining consensus and developing a holistic appreciation of the relevant issues (Winkler, 1981). In fact, according to Winkler (1981) experts possess relevant information and may have conducted and/or been involved in studies related to the issues under examination.

Therefore the selection of face-to-face depth interview method was primarily based on its appropriateness in uncovering the beliefs and attitudes concerning the intricate topics of adaptation, uncertainty, opportunism and relational norms. However as face-to-face depth interviews are difficult to arrange and can be expensive, practically in academic research they are mostly applied to a small population (Gubrium and Holstein (2001).

Face-to face depth interviews were undertaken with two 'expert informants'. The interviewees were very experienced managers who each had over ten years experience in managing buyer-seller relationships within the UK motor industry. Within the context of this study, these individuals were experts in the management of relationships within the UK car components sector and b-to-b purchasing relationship management. Since the expert informants had extensive experience of business relationships it was reasonable to assume that they had experienced many situations in which adaptation occurred within relationships that they had responsibility for managing.

In order to bring focus to the interviews, a number of key issues were identified as subjects for discussion. These issues can be summarised as follows:

Nature of adaptation: Face to face interviews would provide details about the nature of adaptation occurring within relationships . Additionally, issues such as the impact of uncertainty and behaviour that can be characterised as opportunistic could be discussed with decision makers who had experience of managing relationships. In particular, issues such as the extent to which uncertainty was a major problem facing the interviewees as decision makers was considered to be something that needed clarifying.

The use of adaptation within business relationships: It was necessary to explore the types of adaptation that took place within relationships since the literature implied that opportunism and

uncertainty would have different effects on the different types of adaptation

The face-to-face interview method were also used for modifying and acquiring new information about the adaptation, uncertainty and opportunism scales. Details of this area of the research is set out in Chapter C3.

Following the qualitative approaches suggested by Gubrium and Holstein (2001), the time for the interview was prearranged and information to be discussed was emailed to the respondent a couple of days before the meeting. This familiarised the respondent with the issues that would to be discussed during the interview. Respondents were given an opportunity to express their views/comments/opinions within the broad domain of adaptation within b-to-b relationships. The expert informants from the motor industry spoke at length about the types of uncertainty facing companies. Additionally, they commented on the extent to which opportunism arose in the motor sector and the nature of the long-term relationships they had with their manufacturing partners. Depth face-to-face interviews resulted in the following general and specific information:

- **Nature of adaptation:** The interviews allowed the author to acquire a clearer and more comprehensive view as to the different ways in which firms adapt.
- **Companies behaviour towards uncertainty, opportunism and relational norms:** The interviewees underlined issues surrounding the management of uncertainty and opportunism within relationships. The role of relational norms, which can be defined as unwritten rules of behaviour, became clearer and more apparent.
- **Previous research in the area and research technicalities:** Finally, the interviews with the academic researchers have provided an in-depth discussion into relational norms and its applicability to this research area.

The role that these interviews played in the development of the scales in considered in Chapter C3.

C2.1.2 Hypotheses testing

From Chapter C1, it is apparent that the examination of causal pathways between the research constructs forms a central part of this study. Given the fact that these pathways are grounded on theoretical considerations, data have been collected specifically in order to formally/statistically test these causal relationships; we can conclude that the research follows a hypothetico-deductive approach.

C2.1.3 Model building

Using the results of the causal investigation defined above, normative guidelines for the hypothesised linkages will be proposed. With regard to the normative guidelines, this research has assumed that adaptation within business to business relationships takes the form of a rational process.

C2.2 STUDY SETTING AND EXTENT OF RESEARCH INTERFERENCE

The approach to study setting was non-contrived because research was done in natural/normal environment without hindering/disturbing the flow of work. The research was carried out among a cross-section of U.K. car component manufacturers and since no manipulation of the exogenous constructs was involved, it took place without any interference from the researcher.

C2.3 TYPE OF INVESTIGATION

Authors such as Sekaran (2002) and Kinnear and Taylor (1996) posit that a researcher should determine whether a causal or a non-causal study is needed to answer the research question(s). Causal investigations are employed when the aim is to establish a 'cause-effect' relationship, while in cases where the purpose is to identify associations between relevant factors/constructs a correlation investigation is employed. Although the element of this investigation is the examination of cause-effect relationships, due to the lack of control over events, we cannot be certain that the relationships to be uncovered are "true" relationships. Instead the independent variables are viewed as affording plausible explanations of the dependent variable. In this respect this investigation is classified as an *ex post facto* research (Sekaran, 2002; Churchill and Iacobucci, 2005).

C2.4 TIME HORIZON

Studies can be either: 1) cross sectional i.e., data represents a snapshot of the research issues at a single point in time or 2) longitudinal, i.e., data are collected at two or more points in time (Sekaran, 2002). Due to time and cost constraints, cross sectional approach has been used in this study. It is appreciated that the abilities of a cross sectional study in detecting change are weaker than a longitudinal study. Thus, the results presented here provide only temporal evidence of the relationship between the variables and not about the factors that have led to, or the manner in which the management of these factors has contributed to, a specific outcome.

C2.5 DATA COLLECTION METHOD

As stated by McDaniel and Gates (2002), the three primary data collection methods used most often in marketing research are survey, observation and experimentation. The survey method includes a questionnaire given to a sample of the population and is designed to elicit the required information. The observation method involves recording the behavioural patterns of people, objects or occurrences without direct interaction, such as questioning or communicating with them. Finally the experimentation method involves the manipulation of one or more independent factors by the experimenter who then measures the effects on one or more dependent factors (Malhotra and Birks, 2007). Of these, the survey method administered by means of telephone interviews was considered to be most suitable method for this study. The reasons that lead to this decision were:

Comparatively low cost: given the geographical dispersion of the targeted companies within the UK, the positive financial economies associated with the use of a survey made it a preferred method.

Economical use of time: use of survey method meant that data collection could be managed in 4-4 months which was within the time frame allocated to this activity.

Ethical and co-operation issues: the survey method allows the respondent whether or not to reveal their information at their own free will. This option of total willingness to participate aids/improves the quality of response as the respondent is under no obligation or influence to take part.

Flexibility of data collection: Due to the geographical distances involved, the flexibility of data collection was critical in this study. The survey method provides a number of flexible approaches (e.g., mail survey, telephone survey, e-mail survey), which led to this being the method of choice.

Diversity: By using the survey method based on a detailed questionnaire, a wide variety of questions could be designed in order to elicit respondents' thinking. In contrast, by using observation method, issues such as underlying motives, beliefs and attitudes could not be easily brought out and understood (Rossi *et al.*, 1998).

Ease of administration: As the data to be collected involved respondents' attitudes, opinions and behaviours, the use of a survey was considered to represent an appropriate mean of obtaining such information without the use of field force (Fowler 2002).

Use in the marketing domain: Finally the survey method has been extensively adopted in papers on the subject of marketing (Deshpande 1983).

Although surveys offer a number of benefits, they are also subject to several drawbacks:

Compared with other methods of administration of survey, mail surveys require a longer time period to collect the data (Fowler 2002). As surveys contain a list of written questions (irrespective of whether these questions are pre-coded or open-ended), there is the potential of biases which can take the forms of measurement instrument bias, response bias, etc. (McDaniel and Gates, 2002; Malhotra and Birks, 2007). These biases were minimised by using a careful research methodology based on pre-pilot and pilot study prior to final data collection (Section C4).

A number of authors such as McDaniel and Gates (2002) and Aaker *et al.* (2000) have indicated that the use of surveys is just a 'somewhat appropriate method' in causal studies, and go on to state that 'experimentation is the only type of research that has the potential to demonstrate that a change in one variable causes some predictable changes in another variable'. This is supported by Hawkins and Tull (1994) who point out that surveys are seldom used in the examination of causal relationships. Although surveys can be used to examine firms' behaviours and intentions, the respondents may not give the actual answers to the survey. That is, there may be discrepancies between given answers and actual behaviour (i.e., response bias, for details refer to Section C4.2). Therefore, the accuracy provided by responses obtained from surveys is not always as high as that of experimentation. In order to minimise the probability of such circumstances arising, methods such as promised confidentiality and a copy of research summary report have been utilised to reduce the bias.

C2.5.1 Mode of survey administration

Four basic methods of survey administration have been identified by Malhotra and Birks (2007) and Churchill and Iacobucci (2001). These are personal (face-to-face) interviews, telephone interviews, mail surveys and electronic surveys which include the use of fax, e-mail and Internet (Kent and Lee, 1999).

After weighing the pros and cons of the listed survey administration methods, telephone interviews was considered to be the most suitable for this study. The reasons for this choice were:

- Telephone interviews are considered to be more appropriate for dealing with sensitive issues than face to face interviews) since they offer more perceived anonymity than face to face interviews. As a result, it is a useful method for collecting data on sensitive or intimate subjects (MacGivern, 2003). Due to the need to collect information about a number of sensitive issues (such as opportunistic behaviour), telephone interviews were deemed to be the most appropriate option.

- Another advantage of telephone interviews over face to face interviews is the ease of access to respondents who are geographically dispersed that a telephone survey offers
- An additional advantage is the low cost of a telephone interview in comparison with the much higher cost of organising face to face interviews which inevitably have time and cost implications. It is faster to administer than face to face or telephone interviews: more questions are answered in a shorter period of time and project turnarounds are faster.
- The use of telephone interviews offers control in terms of who answers the questionnaire. With mail surveys there is little control that the respondent is actually the person who completed the questionnaire. Even though the questionnaires can be addressed to a named person, it is a possibility that they are passed to another member of staff whose knowledge and decision-making authority is limited. However, with a telephone interview, when the call is made to an identified individual this risk is minimised.
- The response rate of telephone interviews has been found to be high in comparison with mail surveys (Malhotra and Birks, 2007; Churchill and Iacobucci, 2001).

Despite the above advantages, telephone surveys have been found to be associated with a number of drawbacks:

- A traditional reason for not using telephone interviews was because of the low levels of ownership of telephones in some Sections of society. Whilst this may still be a problem with certain types of research (e.g., research into low income social groups), this is no longer a problem when carrying out business research
- Nowadays, issues such as the rise of telemarketing has made people suspicious of bona fide telephone research and this has impacted on response rates in business research that is carried out in the form of telephone interviews. The negative implications of this trend is seen in secretaries acting as gatekeepers to prevent interviewers being able to access respondents and in the adoption of blanket policies banning staff from participation in telephone surveys.
- Telephone interviews require more field resource involvement, such as active participation of interviewers. This entails cost implications.

C2.5.2 Communication method

The telephone survey was administered through a structured-undisguised communication method.

The reasons for this were:

Degree of structure: This refers to the degree of standardisation imposed on the questionnaire (Churchill and Iacobucci, 2001). Using a highly structured method, the questions asked and the responses permitted are strictly predefined. The questionnaire followed a strict sequence and relied primarily on scaled response (7-point Likert scale) .

Amount of disguise: This involves the extent to which the respondent is aware of the underlying purpose of the research (Hawkins and Tull, 1994). There was no compelling reason to disguise the research purpose, and it was believed that by stating the purpose of the research at the outset, the respondents could be in a better position to provide accurate and relevant responses (Hawkins and Tull, 1994). Consequently, the respondents were informed of the purpose and legitimacy of the study before commencing the telephone interview.

Respondent targeting: Name and position of each of the respondent was entered into a database. Directing the telephone call to a named respondent helps increase/improve the response rate as it is most likely that the telephone call will reach the person in the best position to complete it (Dillman, 1978).

Identification of the Interviewer: Each telephone call followed a predefined format. In doing so, the good practices set out by Dillman (1978) were observed. The call began with an introduction stage. This entailed the interviewer introducing himself. He identified himself as a researcher from Kingston Business School who was carrying out research into business relationships in the U.K. motor sector. A process of checking that the call had gone through to the person listed in the sampling frame. It was also explained to the respondent that details of their name and position had been obtained from a publication of the Society of Motor Manufacturers and Traders: Annual Yearbook 2006. The second stage of the telephone interview was designed to seek the approval of the respondent that they were able to participate in the interview. In order to obtain their approval, it was explained to them that the duration of the interview was between ten and fifteen minutes. Offers of incentives (which are outlined later in this Section) were made to the respondents. Screening questions (which are also outlined later in this Section) were also included at this stage in order to check that the respondent was suitable to participate in the survey.

Incentives: Inducements have been offered within research studies to help increase the response rate (Nederhof, 1984). However due to the academic nature of the study no tangible paybacks could be

offered due to the possibility of a response bias. However, a 'survey summary report' was promised to each respondent which have been reported to have positive effect on questionnaire return rates (Powers and Alderman, 1982). Since in this instance the surveys were conducted by telephone, a separate file was compiled of participants who wished to receive the 'survey summary report'.

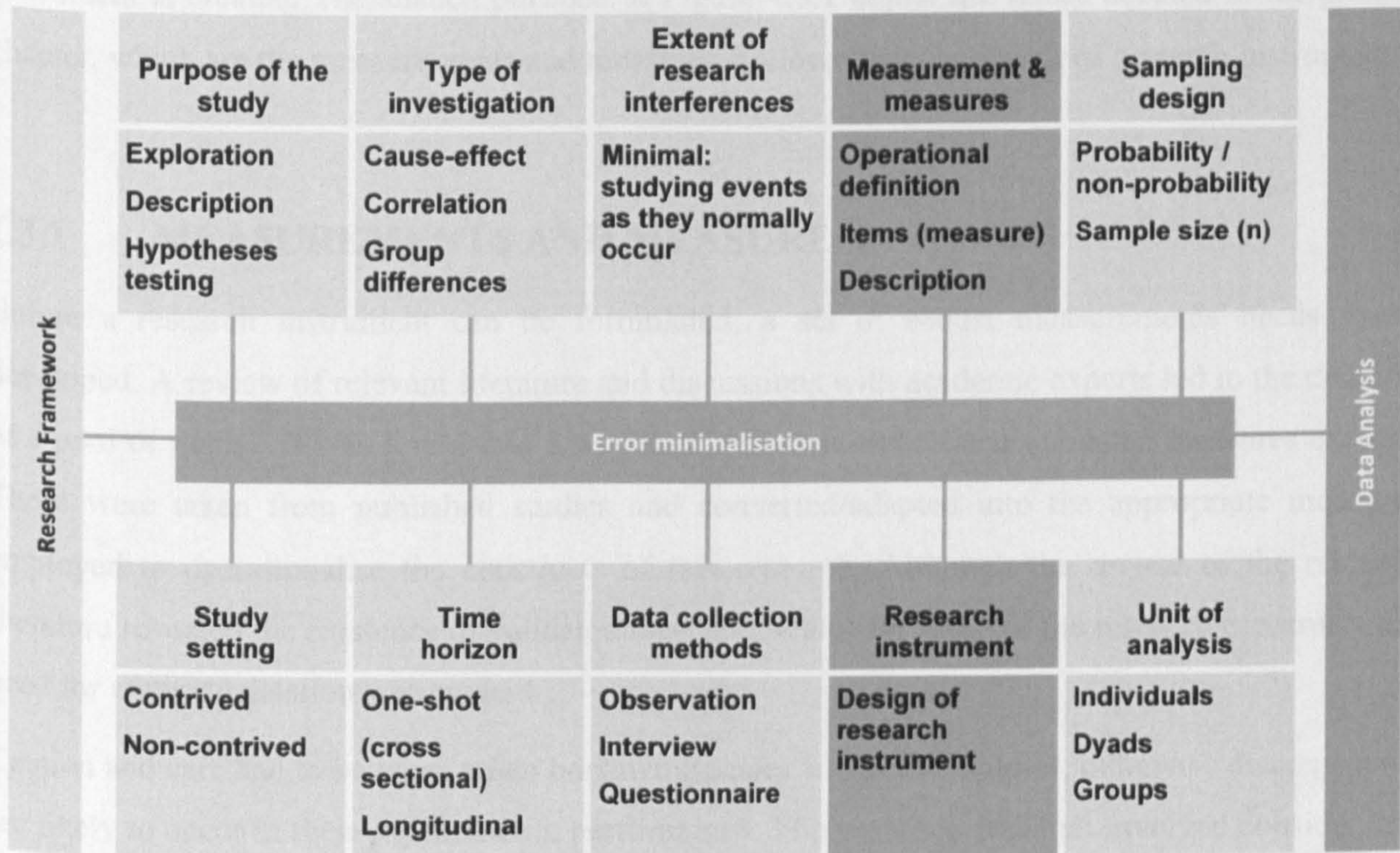
Making telephone calls: All phone calls were made during normal business hours from Monday to Friday. Advance notice of the calls was not given to the respondents; however, they were asked at the outset of the interview if it was a convenient time in which to take part. In circumstances in which it was inconvenient, an alternative day and time for the interview was offered. In all cases details of the outcome of the call were noted on a database. If the caller was unavailable, further call-backs would be made. In general, no more than three calls would be made to the respondent before no further action was taken. In some cases, the interviewer was advised that the company did not allow staff to participate in telephone surveys. In such cases, the details of the company were changed on the database to ensure that no further calls would be made.

The interviewer read out instructions on the procedures for answering the questions. When the respondent gave an answer to a question the details were entered on the online questionnaire by the interviewer. This procedure was followed in every case.

CHAPTER C3: RESEARCH METHODOLOGY (II)

The purpose of this chapter is to explain the process under which the research instrument was created. In order to achieve this goal, it was necessary to give due consideration to the important issues of measurement and measures.

Figure C3.1: The Research Process



Source: Sekaran, U. (2002) *Research Methods for Business: A skill Building Approach*. 4th edition. New York: John Wiley and Sons Inc.

Generally the measurement of business relationship constructs, such as adaptation, uncertainty and information exchange, is influenced by the particular nature of many market phenomena where the constructs themselves are often latent. That is to say that they are theoretical constructs that cannot be physically observed and therefore are not directly quantifiable. However, what are generally quantifiable and, hence, measurable, are some manifest variables linked to the underlying theoretical construct(s). These quantifiable and specific variables are assumed to represent indicators of the latent construct. It is from this point that fundamental questions arise about the links between the indicators used (the measurement scales), the observed variables (the antecedents and consequences) and the latent construct to be measured. Importantly, questions about the validity and reliability of the measurements need to be addressed. In this respect, the first question relates to

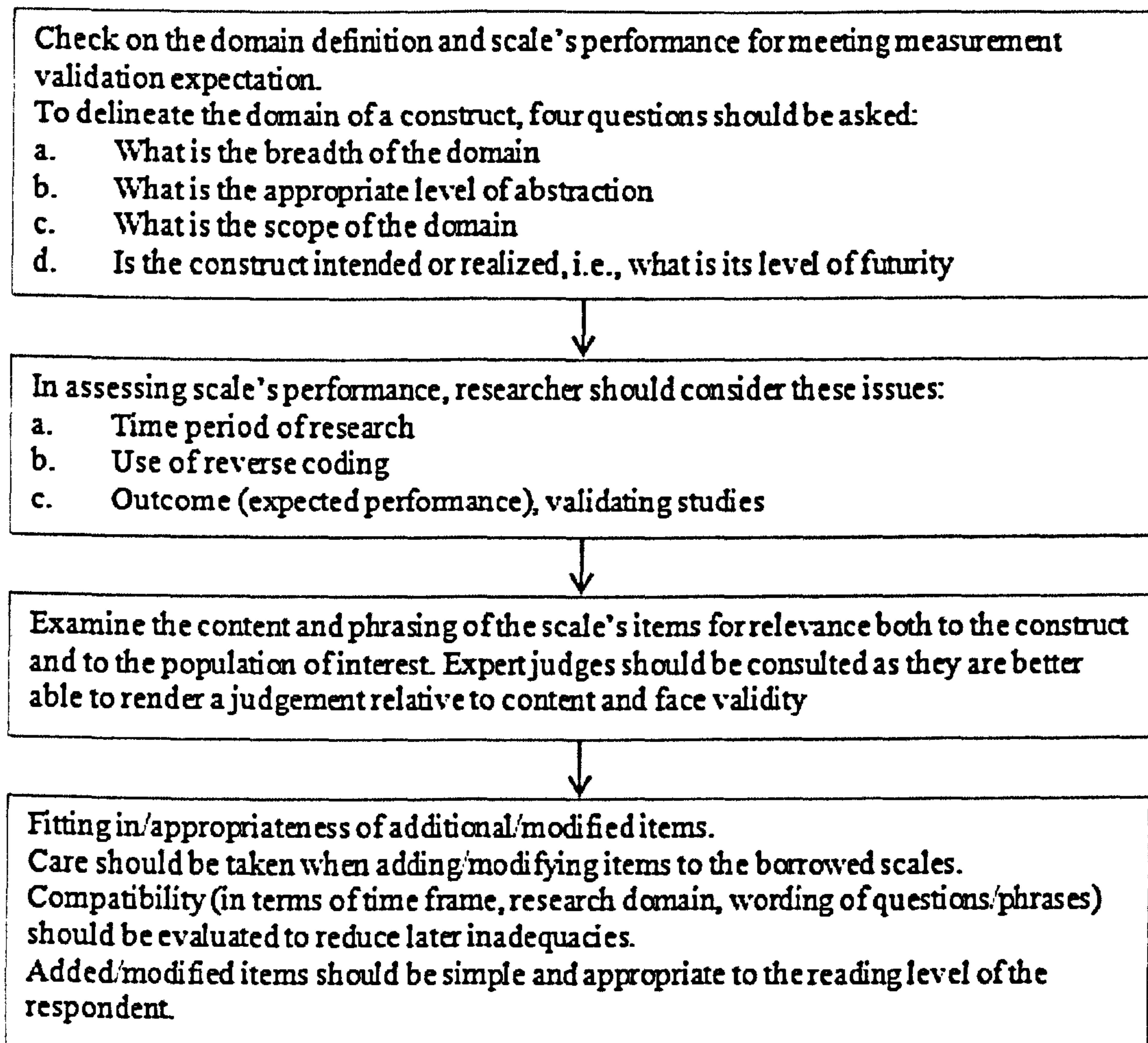
the measurements' capacity to effectively express related theoretical concepts (*validity*). The second question is related to the stability in measurements when repeated over time (*reliability*). Thus, the measurement of marketing constructs is the process of linking abstract concepts to empirical indicators, and the main aim is to meet the two fundamental psychometric properties (i.e., reliability and validity) of the resultant measures. In order for the research instrument to achieve its aims it is essential that issues of validity and reliability are addressed during the process in which the instrument is created. The shaded portions in Figure 4.3.1 depict the issues debated in the present chapter, which are the measurements and measures, followed by the design of research instruments.

C3.1 MEASUREMENTS AND MEASURES

Before a research instrument can be formulated, a set of robust measurements needs to be developed. A review of relevant literature and discussions with academic experts led to the creation of a pool of items. It was found that a wealth of research and related validated measures existed. These were taken from published studies and converted/adapted into the appropriate measures employed to operationalise the constructs of this research. Although the review of the relevant literature revealed the existence of validated measures/scales for some of the research constructs the need for contextualisation was evident.

Caution and care had to be taken when borrowing scales from other studies, otherwise discrepancies are likely to occur in their psychometric performance. The proposed research involved considerable borrowing of scales, hence it was imperative that potential pitfalls/problems linked to scale borrowing were identified, understood and eliminated or at least reduced.

Being cognisant of the potential problems associated with borrowed scales, a framework suggested by Engelland *et al.* (2001) and illustrated in Figure 3.1 was applied in order to ensure the appropriateness of the adopted scales for this study. The framework was utilised as a benchmark to assess and acknowledge the fitness of borrowed scales for use within the proposed investigation. The succinct form of Engelland *et al.* (2001) framework is shown in Figure 3.2 above.

Figure C3.2: “Cautions and precautions on the use of borrowed scales”

Source: Engelland, B. T., Alford, B. L. and Taylor, R. D. (2001) "Cautions and precautions on the use of 'borrowed' scales in marketing research", in T. A. Suter (ed.) *Marketing advances in pedagogy, process and philosophy: Proceedings of the annual meeting of the society for marketing advances*, New Orleans, LA, November 6-10, pp. 152-153

The application of the Engelland *et al.* (2001) framework to the proposed research was as follows:

Step 1 – Selection of scales to borrow: Review of academic papers (for journal quality/impact assessment see: Hult *et al.*, 1997; Baumgartner and Pieters, 2003; Geary *et al.*, 2004; Harzing, 2006), textbooks (especially scale books by Bruner *et al.*, (2001) and Beardon and Netemeyer (1999). Discussions with expert informants provided a sound based for the specification of the concepts related to the research constructs. Additionally, a review of adaptation papers, textbooks and examination of other relevant information sources (such as business newspapers, magazines and electronic publications) assisted in the process. In particular, a thorough study of published operationalisations in reputable journals provided the initial pool of scales. Papers by Artz and Brush (2000), Heide and John (1992), Heide (1994), Lusch and Brown (1996), Rokkan, Heide and

Wathne (2003), Stump and Heide (1996) were amongst the prime studies that included the focal constructs and their operationalizations.

Step 2 – Assessing the scale’s performance: The scales were largely borrowed from papers and books that were representative of current thinking. Consequently, the borrowed scales were up-to-date. Examination of the psychometric properties of the scales assisted in the selection process and confirmed the stability of the adopted ones. Even though most of the borrowed scales had acceptable validity and reliability, all the scales were subsequently reassessed for reliability and validity (see Section D1.2.1 and D1.2.2 for reassessed reliability and validity results). Hence using scales with acceptable reliability and validity in the first place was considered as a constructive initial step in evaluating their appropriateness for the proposed investigation. Reaffirming their reliability and validity further substantiated their suitability for the intended use.

Step 3 – Examining the content and phrasing of the scale’s items for relevance both to the construct and to the population of interest: The effectiveness of measurement scales in conveying the meaning of the intended variable in a clear and succinct manner was tested in expert informant meetings (see Chapter C2). Changes relating to the use of jargon, item similarity, duplication of items and rephrasing of items were suggested. Relevant feedback was incorporated to revise the scales.

Step 4 – Appropriateness of modified scales: After making the changes suggested by expert informants, a pilot study was conducted to establish the adequacy and appropriateness of scales in measuring the proposed constructs (see Chapter C.2). The results of these studies indicated that deployed scales were explicit in their meaning and were clearly understood by majority of the respondents. Validity (content and discriminant validity) and reliability (Cronbach’s α value, item-to-total correlation and composite reliability) values being within the acceptable range further supported the suitability of scales for proposed research (see Chapter D1.2.1 and D1.2.2 for reliability and validity results).

C3.2 ADAPTATION

This construct refers to adaptation investments. The following six (6) items were developed. The constituent elements and the sources of the original scales are summarised below.

Table C3.1: Adaptation

	Item	Summary
1	In response to their needs we have made a substantial investment in personnel specifically dealing with our main customer	This item measures the degree to which the supplier has invested in dedicated human specific assets in order to provide for the needs of their main customer (Anderson and Weitz, 1992).
2	In response to their requests for assistance, we have dedicated some of our staff in training our main customer to use our products	This item also seeks to capture adaptations in human capital that have been made. In this case, it refers to efforts made to train the main customer to use the supplied products (Anderson and Weitz, 1992).
3	Most of the training that our staff have undertaken as a result of our main customer's requirements cannot be easily adapted for use with another customer	This is the third item that seeks to capture dedicated adaptation in the form of human specific assets. This item has been used to ascertain if training was carried out to meet the needs of a specific customer (Stump and Heide, 1996).
4	Our main customer has some unusual technological standards that have required extensive adaptation by us	This item was developed to capture modifications in the form of the adoption of unusual standards (Heide, 1990). It seeks to capture adaptations in the form of idiosyncratic technological standards that have been made in order to meet the requirements of the main customer.
5	In response to their needs, we have made significant investments in tooling and equipment dedicated to our relationship with our main customer	This item was included in order to assess the degree to which adaptations in the form of investments have been made in tooling and equipment that is specific to the needs of the main customer (Heide, 1990)
6	Following requests from our main customer, we have modified our production system to meet their requirements.	This item follows on from the previous item and seeks to determine the degree to which modifications to the production system have taken place (Heide, 1990).

C3.2.1 Opportunism

This construct aims to capture the degree to which the relationship has been subject to opportunism. It focuses on the effects of opportunism that arise during the existence of the relationship. A five-item scale has been developed that is based on borrowed items that have been subject to some minor modifications.

Table C3.2: Opportunism

	Item	Summary
1	Our main customer sometimes modifies the facts or withholds information in order to get what they want	This item is a form of opportunism that has been described as "active opportunism" and was developed to capture actions involving the distortion or withholding of information (Rokkan <i>et al.</i> 2003)..
2	Our main customer sometimes promises to do things without actually doing them	This item seeks to examine whether the main customer will break promises (Rokkan <i>et al.</i> 2003).
3	Our main customer sometimes does not act in accordance with our contract	This measure examines the extent to which the main customer adheres to the terms of the contract ((Rokkan <i>et al.</i> 2003).).
4	Our main customer sometimes insists on compliance with the contract even if the purpose of the contract has changed	This item reflects behaviour that has been described as "passive opportunism", It is seen in situations where a party demands strict adherence to a contract even if the commercial purpose of the contract has changed (Williamson, 1979).
5	Our main customer sometimes uses unexpected events to extract concessions from our firm	This item examines if "active opportunism" in the form of exploitation takes place when unexpected events occur((Rokkan <i>et al.</i> 2003).).

C3.2.2 Uncertainty

This refers to the effect of certain changes in circumstance on business relationships. It consists of six items designed to measure the effects of volatility, technological and volume uncertainty on the relationship.

Table C3.3: Uncertainty

	Item	Summary
1	Changes in the specifications of the product we sell to our main customer are very predictable	This item was constructed to measure the predictability of changes in specifications to the product sold (Heide and John, 1990).
2	Technological improvements to the product we sell to our customer are very predictable	This measure examines the impact of technological change on the relationship (Heide and John, 1990).
3	The market is highly volatile	The general rate of change occurring within the market-place is sought to be measured by this item (Artz, 2000).
4	It is difficult for us to estimate the expected sales volume for the product we sell to this customer	Uncertainty over the anticipated sales volume is measured by this item (Heide and John, 1990).
5	It is difficult for us to predict our price for this product	Predictability about the pricing structure for the product sold is measured by this item (Artz, 2000).
6	It is difficult for us to predict changes in specifications and features to the products we sell	This item follows on from the previous item by measuring the uncertainty over changes in specification and features of the product sold (Artz, 2000)..

C3.2.3 Information exchange

This construct refers to the exchange of explicit information between the exchange partners. It aims to examine the manner in which one partner attains certain information from the other; the extent to which there is sharing of important information within the relationship, and also the provision of information about changes or events that may affect a party. It is made up of four items.

Table C3.4: Information Exchange

	Item	Summary
1	Exchange of information in this relationship takes place frequently and informally, and not only according to a pre-specified agreement	This measure is designed to capture the manner in which information is passed within the relationship (Heide and John, 1992).
2	It is expected that we keep each other informed about events or changes that may affect the other party	This item measures the extent to which events and changes of relevance to a party are provided within the relationship (Lusch and Brown, 1996).
3	In this relationship, it is expected that any information that might help the other party will be provided to them	This item examines the expectation that information that might be of use to a party will be provided to them (Lusch and Brown, 1996).
4	It is expected that the parties will provide proprietary information if it can help the other party	This item seeks to examine the extent to which confidential information sharing occurs within the relationship (Lusch and Brown, 1996).

C3.2.4 Solidarity

This construct seeks to examine the extent to which the parties will show perseverance in the face of difficulty. The scale for solidarity is measured using 4 items.

Table C3.5: Solidarity

	Item	Summary
1	Problems that arise in the course of this relationship are treated by the parties as joint rather than individual responsibilities.	The purpose of this item was to measure the extent to which the parties share difficulties (Heide and John, 1992).
2	The parties are committed to improvements that will benefit the relationship as a whole, and not only the individual parties.	This measure seeks to evaluate the extent to which the parties work together for the common good of the relationship rather than in their own narrow self-interest(Heide and John, 1992).
3	The parties in this relationship do not mind owing each other favours	This measure shows that the parties are prepared to(Heide and John, 1992)
4	A high sense of unity exists between the parties in this relationship.	This measure examines the extent to which the parties work together and have the common interests of the relationship as a common aim (Kim, 2000).

C3.2.5 Flexibility

This construct is designed to examine the extent to which the parties adopt a flexible approach in the face of changed circumstances.

Table C3.6: Flexibility

	Item	Summary
1	Flexibility in response to requests for changes is a characteristic of this relationship.	This measure shows the extent to which responses to requests for change are met with flexibility rather than rigidity (Heide, 1994).
2	The parties expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances.	This measure examines the extent to which there is an expectation that adjustments will take place within the relationship (Heide, 1994).
3	When some unexpected situation arises, the parties would rather work out a new deal than hold each other to the original terms.	This measure is designed to capture the willingness of the parties to find new solutions to problems, as they arise, rather than to insist on literal compliance with the contract (Heide, 1994).

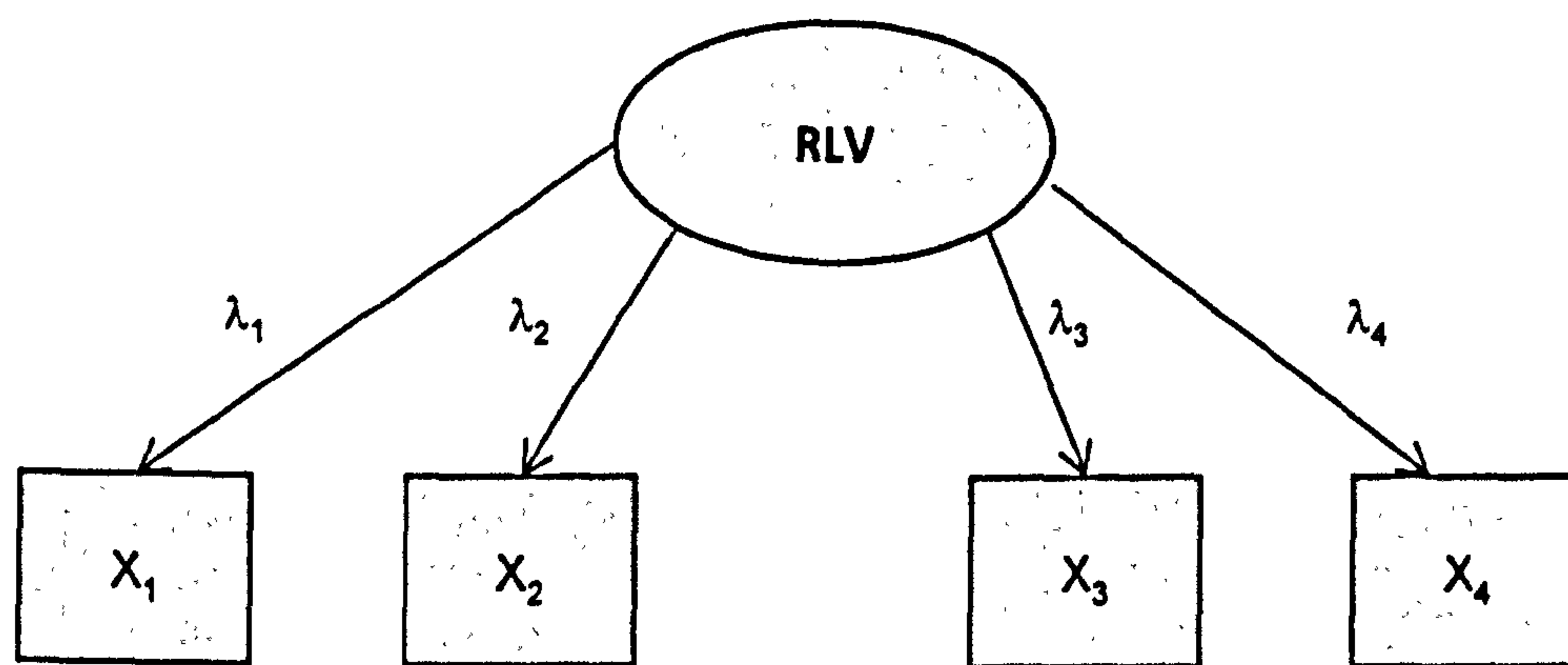
C3.3 CONCEPTUALISATION OF THE RESEARCH CONSTRUCTS (REFLECTIVE VS. FORMATIVE)

There is currently emerging interest in the marketing literature as to the potential effect that misspecification of the conceptualisation of latent variables (LV) might have had in theory development and testing. More specifically, the debate revolves around issues related to reflective and/versus formative conceptualisations of LV (Cohen *et al.* 1990; Diamantopoulos and Winklhofer, 2001; Diamantopoulos, 1999). Given that all research constructs are in the form of LV, it is considered important to explain the meaning of such conceptualisation and define the clarification of the research LV.

Reflective LVs (RLV) (or *molecular* according to Bagozzi, 1988) are cases where the indicators are considered to be influenced or affected by the underlying LV. The key feature of such LVs is that '[...] a change in the latent variable will be reflected in a change in all indicators' (Diamantopoulos, 1999; p. 445).

An illustration of a RLV is provided in Figure C3.3 below.

Figure C3.3: Illustration of a Reflective Latent Variable (RLV)



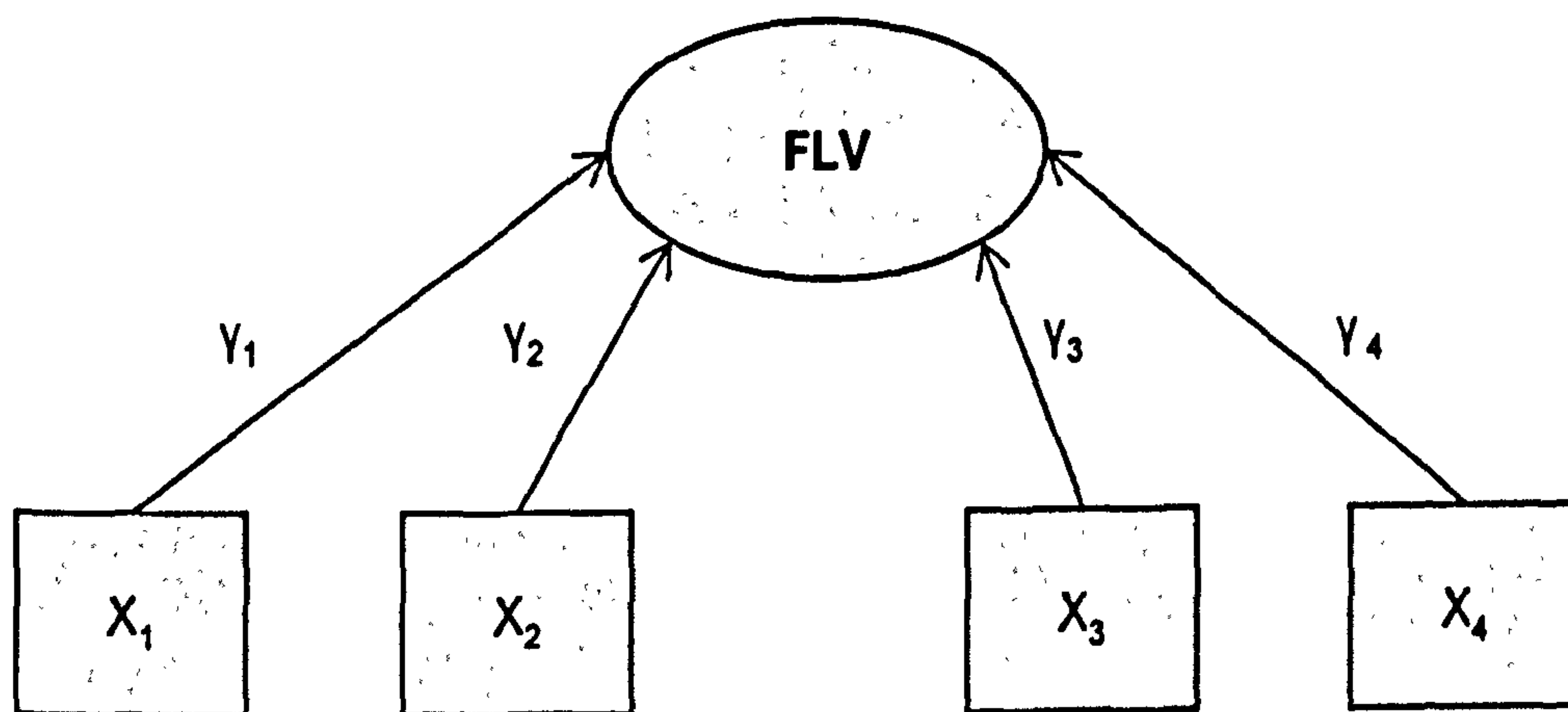
The above imply that there is a one-to-one correspondence between the LV and its indicators (i.e., the indicators are seen as empirical surrogates for a LV). The underlying assumption is that the LV exists, rather than being constructed, and is measured by its indicators or by other lower/first order factors/LVs. Such LVs have their origins in the classical domain-sampling model (Nunnally and Bernstein, 1994) that assumes that the indicators are partially or entirely intercorrelated because of their underlying common LV. It consequently follows that under such a perspective a comparison of the *loadings* (λ_i) would be an indicator of the relative importance of each indicator (i.e. X_1 to X_4) in reflecting the overall LV.

Formative LVs (FLV) (or *molar* according to Bagozzi, 1988), represent variables whose indicators are viewed as causing rather than being caused by the underlying LV. Under such conditions '[...] a change in the latent variable is not necessarily accompanied by a change in all its indicators; rather if any one of the indicators changes, then the latent variable would also change.' (Diamantopoulos, 1999; p. 446). In other words FLVs represent *emergent constructs* that are formed from a set of indicators or lower/first order factors.

We can extend this debate by stating that unlike RLVs, there is no theoretical reason to examine interdependencies (i.e., correlations) among the indicators. It follows that, since the indicators are not necessarily correlated but they can occur independently, it is their relative weights (γ_i) that are used to construct the FLV and these indicate the relative importance of each indicator (i.e. X_1 to X_4).

It is clear from the above that FLVs do not conform to the classical test theory of factor analysis models that treat indicators as effects of a construct. (Bollen and Lennox, 1991). An illustrative example is provided in Figure C3.4.

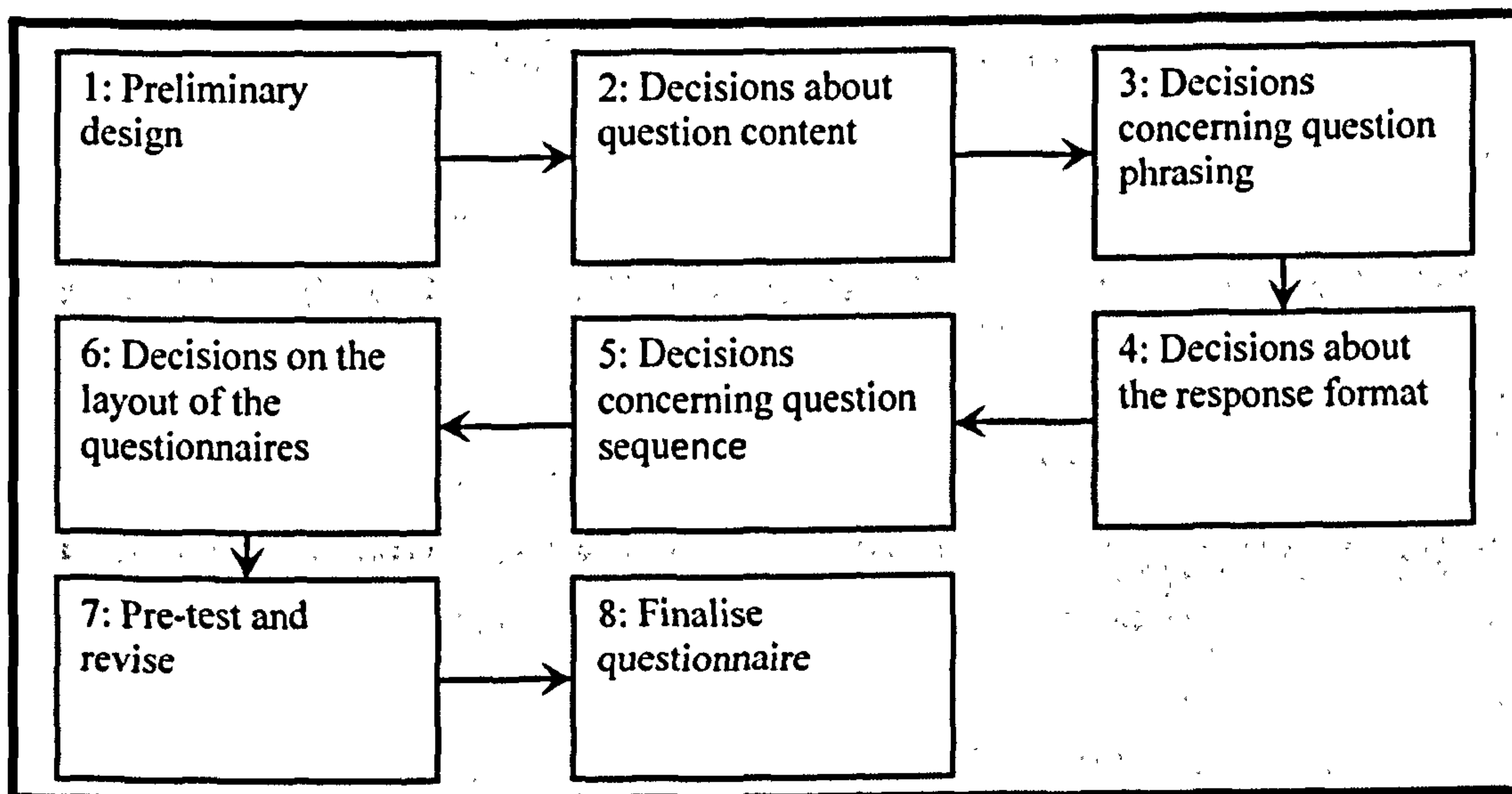
Figure C3.4: Illustration of a Formative Latent Variable (FLV)



C3.4 DESIGN OF RESEARCH INSTRUMENT

In the design of the research instrument, good practices as outlined by, among others, Sudman and Bradburn (1982), Hawkins and Tull (1993), Oppenheim (1994), Churchill, (2001), have been followed. Figure C3.4 illustrates the various issues under consideration which, although depicted as sequential, are interrelated and should be viewed as a guide or checklist.

Figure C3.5: Research Instrument Construction Decisions



Source: Churchill, G. A., and Iacobucci, D. (2001) *Marketing Research: Methodological Foundations*. 9th edition: New York, NY: South-Western College Pub.

Each of the decisions will be discussed in turn.

Preliminary design: Prior to the construction of the actual research instrument, decisions regarding the exact type of information sought from different respondents had to be considered in conjunction with the data collection method to be employed. Given the intended target population, emphasis was placed on professional appearance and ease of completion.

Decisions about questions content: Once the topics were decided, due consideration was given to the question content, i.e. the general nature of the research instrument and the information that it was designed to obtain. Question content was thoroughly verified during expert informant interviews and the pilot stage.

Decisions concerning questions phrasing: Due consideration was given to ensuring that the questions were phrased in a way that were clearly understood by the respondents. Particular attention was placed on issues such as:

- avoiding the use of jargon;
- ensuring the clarity of meaning;
- avoiding leading, double, or bias questions;
- ensuring clearly defined research the context.

Decision about response format: A unified approach in the presentation of measurements has been employed. The response format selected was based on a 7-point Likert scale. The only exceptions were the items referring to customer's size and length of the relationship, which were respectively ordinal and open ended/factual respectively (see Section C3.1.5).

Decisions concerning the sequence of questions: The questions were sequenced in such an order that made it easier/comfortable for the respondent to complete the questionnaire. Relatively sensitive questions (e.g., questions related to adaptation and long-term orientation) were placed towards the end of the questionnaire, and simple 'tick-the-box' questions were placed at the beginning of the questionnaire. This allowed time for the respondent to settle down and feel at ease with the questionnaire.

Pre-test and revision: Despite the extensive exploratory work conducted during the construction of the research instrument, the adequacy of the research instrument was an issue that merited attention (Moser and Kalton, 1979). There is a consensus within marketing literature that pre-testing is an integral part of the research instrument development process. There is a clear message that no survey should be undertaken without a series of pre-test (e.g., Zelnio and Gagnon, 1981; Hunt *et al.*,

1982; Bolton, 1991; Zikmund, 1991; Hawkins and Tull, 1993; Churchill, 2001). In highlighting the importance of pre-testing in the research development process, Churchill, (2001), state that “.... the researcher who avoids a questionnaire pre-test [...] is either naive or a fool. The pre-test is the most inexpensive insurance the researcher can buy to ensure the success of the questionnaire and the research project.”

Pre-testing is defined as the “activity related to the development of the questionnaire to be used in a survey or experiment” (Green *et al.*, 1988; p. 296). The purpose of pre-testing is “[...] to ensure that the expectations of the researcher in terms of the information that will be obtained from the questionnaire are met” (Aaker *et al.*, 2001; p. 268). Furthermore, as language is basically ambiguous and words can have different meanings to different people (Bradburn and Sudman, 1991), it is important to ensure that the words used in survey questions have the meaning to the respondents that the researcher intended them to have (Kinnear and Taylor, 1991). Initially, meetings and consequent discussions were held with several experienced managers with over ten years experience of industrial sales and marketing, to discuss the original pool of questions and any suggested additions/modifications. Following this, a draft version of the research instrument was constructed and, as part of the pilot study, forty questionnaires were distributed to a random sample drawn from the employed sampling frame (see Section C4.2.3). Reliability (item-to-total and Cronbach’s α) and validity (discriminant) tests were performed on the collected data. Discriminant validity was deemed acceptable for all the tested scales, however the reliability results indicated some unacceptable item-to-total correlations for information exchange measurement scales. Appropriate actions i.e., scale redesign through modifications and deletions, were taken to rectify the highlighted problems. In essence, piloting was regarded as a way of confirming and, at the same time, improving the quality of work before proceeding towards the final stages.

Table C3.7: Location of scale items in Questionnaire

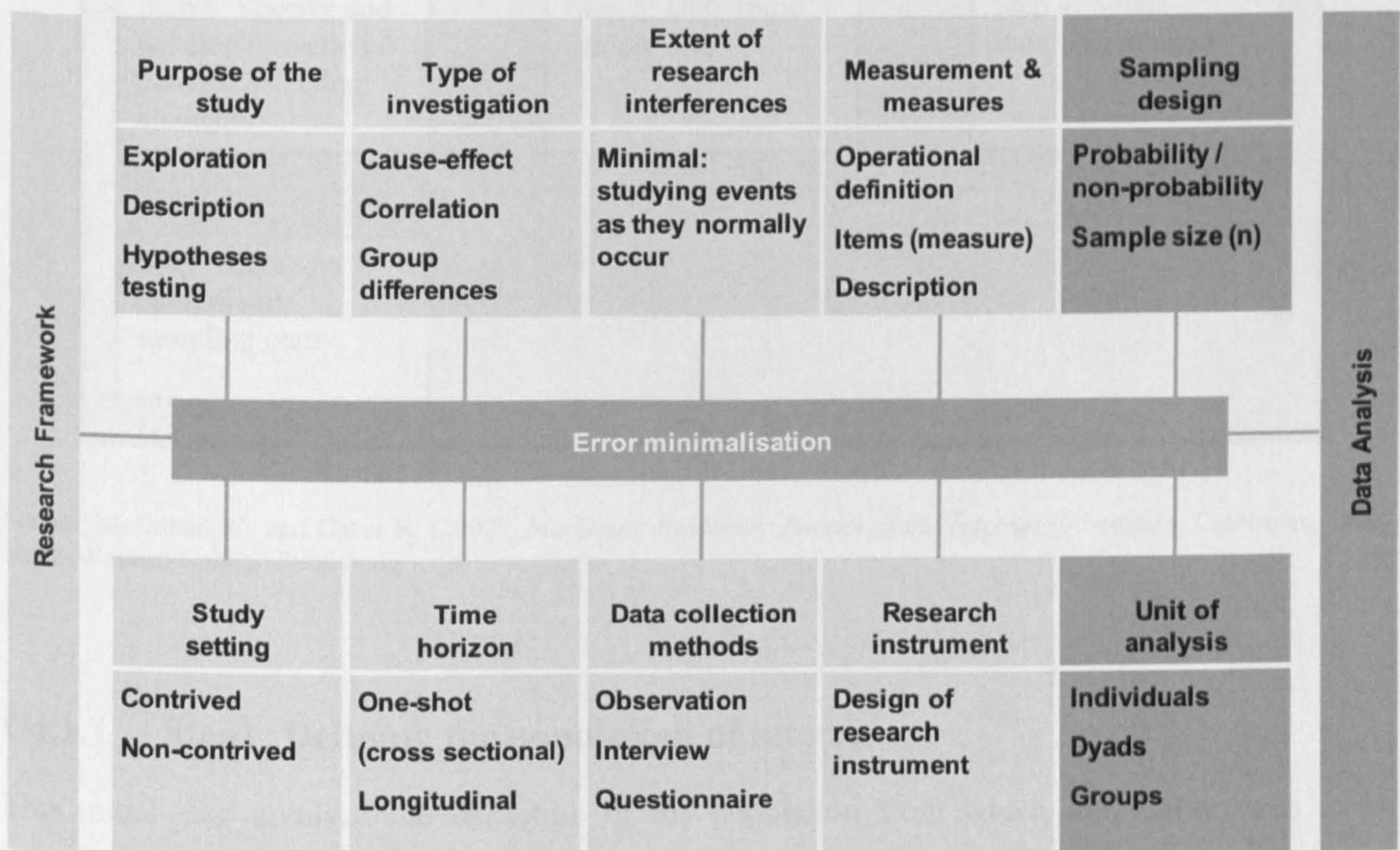
Construct	Question
Uncertainty	Q8 - 9
Opportunism	Q10
Information Exchange	Q11
Solidarity	Q12
Flexibility	Q13
Adaptation	Q14

Finalise questionnaire: The final version of the research instrument (see Appendix 2) reflected the improvements made during the pre-pilot and the pilot stages.

CHAPTER C4: RESEARCH METHODOLOGY (III)

The remaining research methodology components, depicted in the shaded cells in Figure C4, are dealt with in this chapter. The chapter opens with a description of the sampling design and unit of analysis (see Section C4.1). This is followed by a discussion of the techniques adopted in order to minimise error and bias (see Section C4.2). The techniques adopted in order to minimise error and bias are discussed here but they are implicitly related to all aspects of the research design. The problems posed by, and the solutions for missing data are also discussed (see Section C4.3). This Chapter concludes with a brief description of the statistical methods that will be employed in the analysis of the data in Part D (see Section C4.4).

Figure C4: The research design (for Chapter C4)



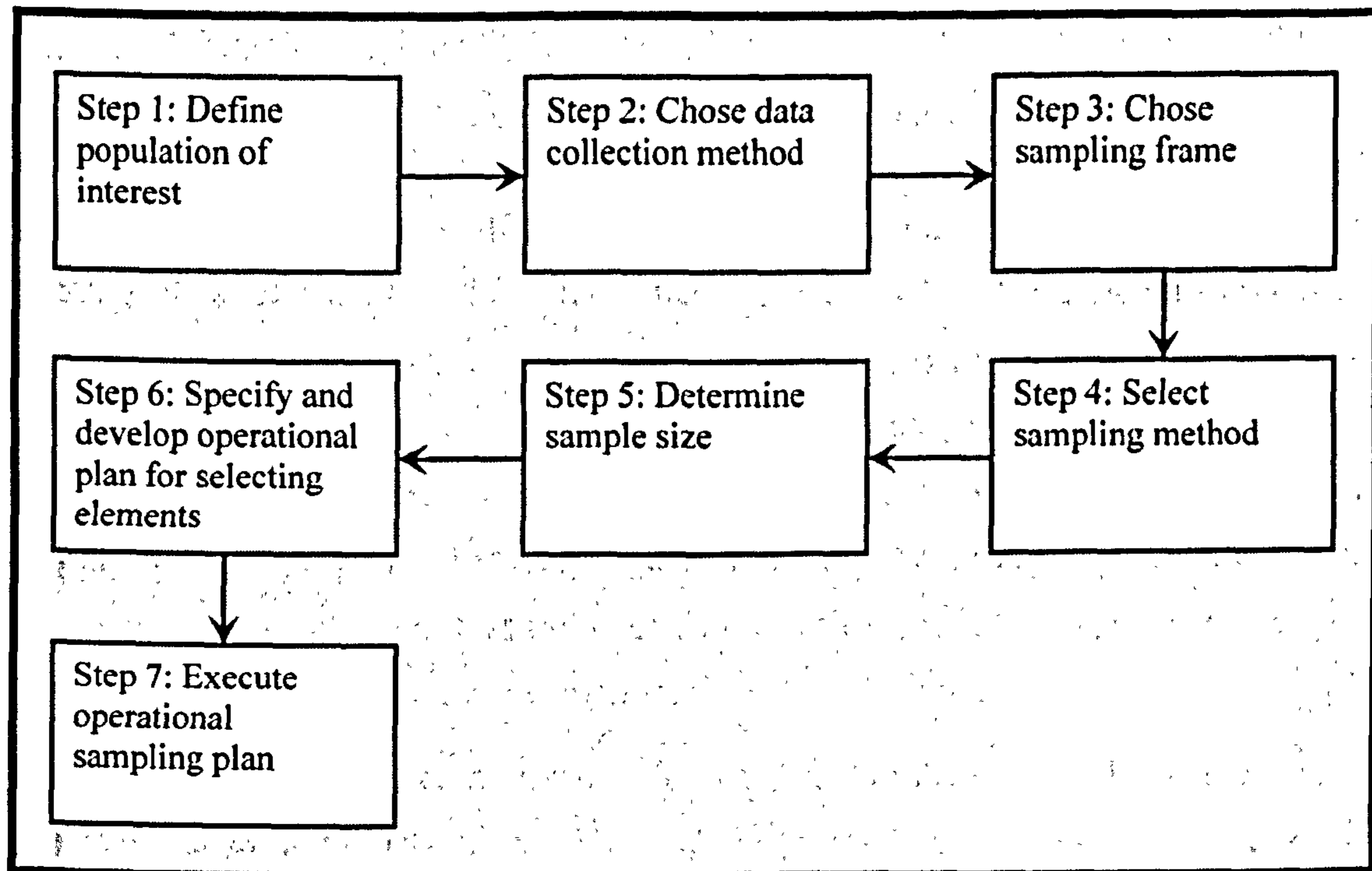
Source: Sekaran, U. (2002) *Research Methods for Business: A skill Building Approach*. 4th edition. New York: John Wiley and Sons Inc.

C4.1 SAMPLE DESIGN AND UNIT OF ANALYSIS

A framework put forward by McDaniel and Gates (2002) has been adopted as a means of adding structure to the process of sample design. It consists of a seven steps process for developing an operational sampling plan, depicted in Figure C4.1. Although, each of the seven steps is discussed

separately, there is an inter-connectedness between the steps that influences the measures taken. Therefore, decisions taken at each stage are contingent on other aspects of the research process (e.g., communication method) and determine subsequent decisions (e.g., permissible type(s) of analysis).

Figure C4.1: Sample design process



Source: McDaniel, C. and Gates R. (2002), *Marketing Research: Impact of the Internet*, 5th edition, Cincinnati, Ohio: South-Western College Publishing

C4.1.1 Step1: Defining the population of interest

This initial step involved the definition of the population from which information was to be collected in order to meet the objectives of the research. Therefore the major decision concerned the selection of an appropriate population of interest (or “target population” Churchill and Iacobucci, 2005) for the investigation of the proposed research issues. The choice of a suitable population requires the researcher to specify the elements that possess the information sought and about which inferences will be made. It was pre-decided to investigate buyer-seller relationships within the U.K car component sector.

For the purpose of this research, the research setting and consequently the target population was defined as follows:

Element: Top Sales personnel (i.e., Sales Managers/Directors, Business Development Managers/Directors).

Sampling Unit: Manufacturers selling to companies in the UK Motor Components sector.

Extent: Motor Component manufacturers based in the U.K.

Time: During the period August, 2006 – November, 2006

The main reason for selecting the UK motor components sector as the research setting were related to the strong likelihood that the focal theoretical variables will all manifest themselves in this setting to varying degrees. Extensive interviews with managers of car component manufacturers and their suppliers, as well as reviews of both academic and trade literature, suggested that the main independent variables were likely to manifest themselves in the setting to varying degrees. The prevalence of b-to-b relationships between firms as a result of the dynamic and volatile nature of the sector and product specialisation that can evoke long-term relationships indicated that the setting was likely to be one in which the focal constructs would manifest themselves.

Senior sales employees were chosen as respondents because of their role as boundary spanners. As they frequently act as a link between the firm and the external environment (i.e., other firms) they are mostly instrumental in initiating and developing firm-to-firm business relationships (Zaheer *et al.*, 1998). This indicated that decisions concerned with adaptation are likely to involve them. This makes them suitable as a target population.

C4.1.2 Step 2: Choice of data collection method

Due consideration was needed in order to ensure the congruence of the adopted sampling and data collection methods. For example, the need for specific information about current attitudes with regard to adaptation in b-to-b relationships required face to face interviews with top management personnel in target population companies followed by a survey conducted at pre-pilot, pilot and final data collection stages. (see Section C2.5 for a detailed account of the data collection method).

C4.1.3 Step 3: Choice of sampling frame

Once the target population was determined, an appropriate sampling frame needed to be defined.

Extensive searches at Kingston University Resource Centre and on the Internet were conducted to identify the data source that satisfied the information needs for the proposed research. After reviewing trade directories produced by Dunn and Bradstreet and Kompass, as well as the online database maintained by the UK Government's Department of Trade and Industry's Auto industry group, it was decided that the annual publication of the UK Society of Motor Manufacturers and Traders, titled "UK Motor Industry Directory 2006" was selected as a suitable sample source. The reasons for this selection were:

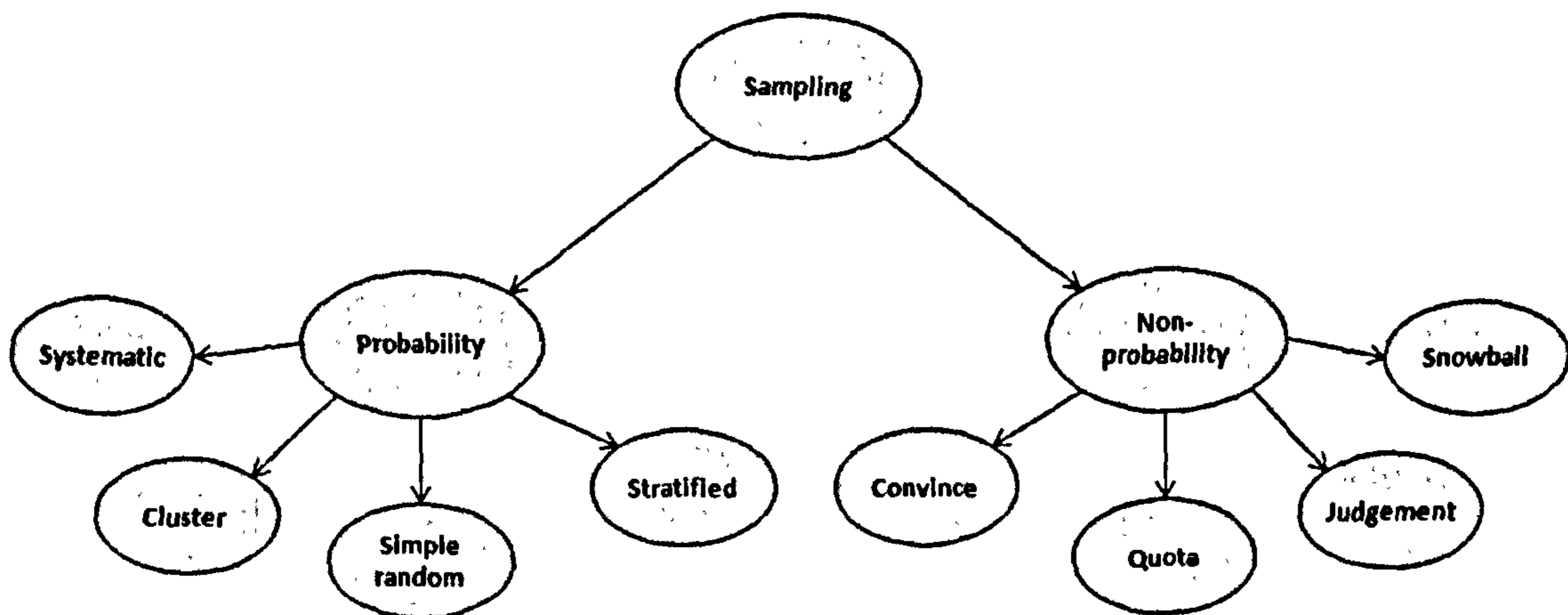
The guide contained company name, telephone, fax, e-mail address, web address, number of employees, key employee names and positions (this enabled the targeting of respondents), details of turnover, details of major clients, products/services offered and position in the distribution channel i.e., manufacturer, distributor, supplier, retailer or buyer questionnaire. The guide contained a large database of companies involved in the UK car sector (over 5000 companies have entries). As the guide was updated annually it was a source of up-to-date information.

Furthermore, clear and practical classification of the sample frame is very useful in the subsequent analysis and clear presentation of the results. As the guide provided details of the products produced by the company as well as the names of their major clients it was possible to identify companies that were involved in buyer-seller relationships in the car components sector.

C4.1.4 Step 4: Selection of sampling method

As illustrated in Figure C4.1.4 the two main types of sampling are probability and non-probability. The relative merits and disadvantages of these sampling methods are well documented (Sudman, 1976; Kinnear and Tylor, 1996; Malhotra and Birks, 2007) and consequently are not debated here.

Figure C4.1.4: Sampling methods



Source: McDaniel, C. and Gates R. (2002), *Marketing Research: Impact of the Internet*, 5th edition, Cincinnati, Ohio: South-Western College Publishing.

In the proposed study as the population source was defined/determined by the author/researcher, both probability and non-probability sampling methods were not needed. However, during the compilation of the sample frame certain constraints had to be applied because the population source contained companies that had no involvement in the manufacture of car components.

Consequently given below is the 'sample selection criteria' that was applied when putting the sample frame together:

- A supplier to a car component manufacturer.
- The relevant respondent must have had at least two years experience of working in a sales capacity in the motor components sector.
- The respondent had to relate the answers to the company that is their main customer and which the respondent is knowledgeable about.

Once the 'sample selection criteria' was determined (as above), the sample entries in the UK Motor Industry Directory 2006 were evaluated against it, one by one, in an ascending alphabetical order. The entry that met the 'selection criteria' was put/stored into the Microsoft Excel database. When the required sample size was achieved the process was stopped.

C4.1.5 Step 5: Determination of sample size

Once the sampling method had been chosen, the next step involved the determination of the appropriate sample size. Research academics point to a number of factors that influence sample

size, namely: a) the degree of accuracy required, b) the need/or not to examine sub-groups or populations, c) nature of population, d) proposed analytical technique(s), e) the method of survey administration, f) the cost of additional information, and g) variation in the variables measured (see for example, Sudman, 1976; Hawkins and Tull, 1993; Churchill and Iacobucci, 2001).

Given the adopted analytical approach (see Chapter C3.5), Barclay *et al.* (1995, p. 292) state, "In general, the most complex regression will involve: (1) the indicators on the most complex formative construct, or (2) the largest number of antecedent constructs leading to an endogenous construct....Sample size requirements, using the "rule of thumb" of 10 case per predictor, become ten times the number of predictors from (1) or (2), whichever is the greater", The single FLV (adaptation) is operationalised with six indicators and in the competing models the largest number of antecedent constructs is two. Using the above approach implies that the data should be collected from a minimum of 50 respondents.

C4.1.6 Step 6 and 7: Develop operation procedures for selecting sample elements and execute the operational sampling plan

Once the above actions and decisions had been taken, the researcher implemented the resulting sampling plan.

C4.2 ERROR MINIMISATION

Examination for the presence and minimisation of errors and biases is a necessary condition for empirical validation of models and hypothesis testing (Churchill and Iacobucci, 2001). However as indicated by McDaniel and Gates (2002), Malhorta (2003) and Churchill and Iacobucci (2001), that any effort to obtain information from sample is prone to error. This Section attempts to assess how quality of information obtained in a research of this type can be effected by various errors/biases. The Section also suggests ways of minimising errors.

A measure for what is actually measured encompasses a true mean value and an error value, termed as 'total error'. According to Malhorta (2003), the total error is the variation between the true mean value in the population of the variable of interest and the observed mean value obtained in the research project. The ideology of a measure value is illustrated by 'True Score Model' where a mathematical expression is provided for the understanding of accuracy of a measure. The measure X_0 represents the sum of a number of values (see Malhorta, 2003; Churchill and Iacobucci, 2001):

$$X_O = X_T + \text{Total Error}$$

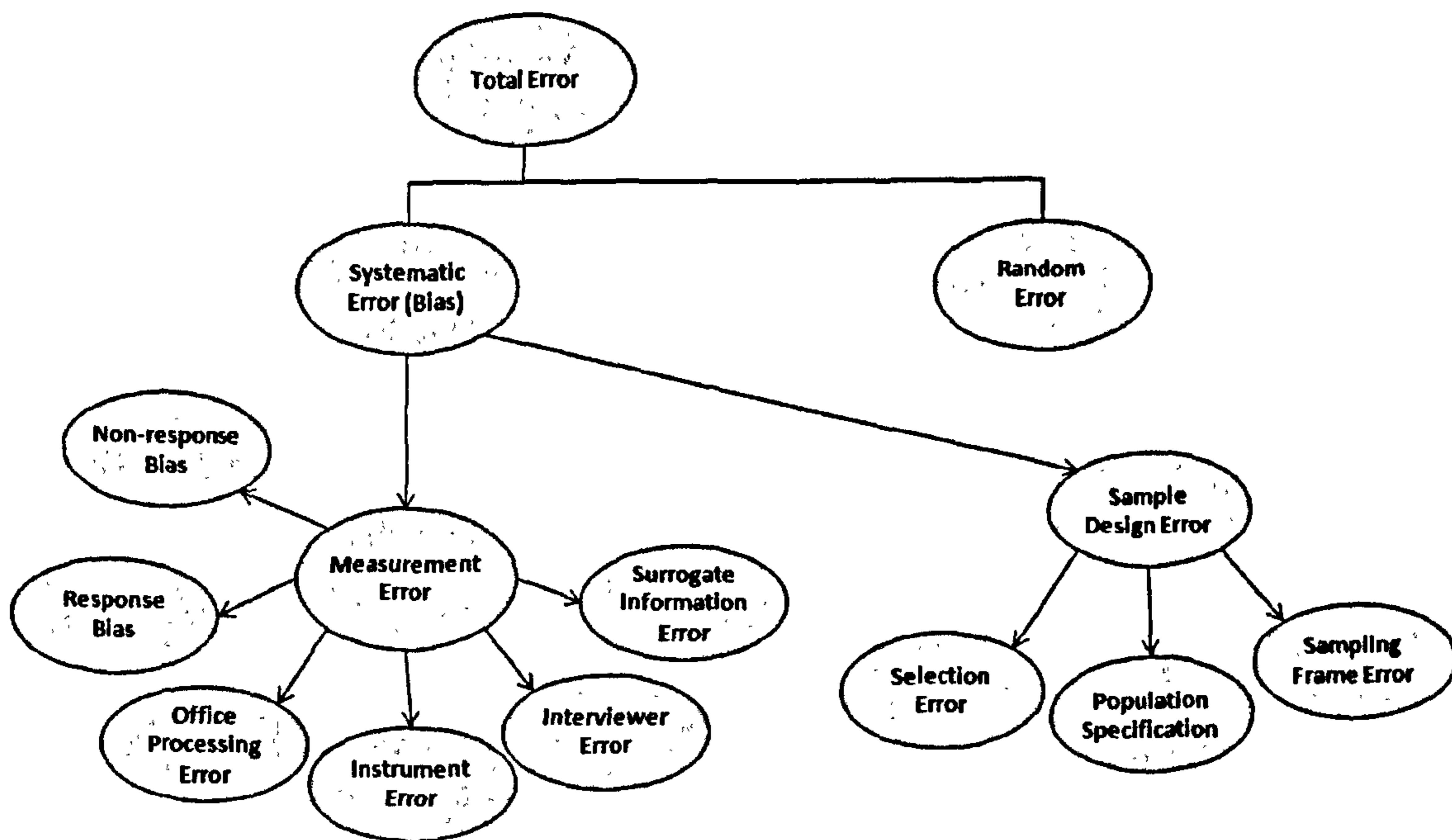
$$\text{Total Error} = (X_R + X_S)$$

Where: X_T represents the true mean value of the characteristic being measured

X_R represents the random error

X_S represents systematic error

Figure C4.2: Total survey error



Source: McDaniel, C. and Gates R. (2002), *Marketing Research: Impact of the Internet*, 5th edition. Cincinnati, Ohio: South-Western College Publishing, pp. 165.

In addition to depicting the relationship between a measured value, a true mean value and an error value, the True Score Model also expounds two components within a total error value, i.e., random error and a systematic error value (also known as bias) (see Figure C4.2). For the purpose of a systematic debate on these two types of errors, the classification of the components of the total error proposed by McDaniel and Gates (2002) is adapted and depicted in Figure C4.2, where we can see that the two basic components of total error are divided into a number of constituent errors.

Individual potential errors and methodologies employed in order to minimise such errors are debated based on Figure C4.2. For a full explanation and relevant definitions the interested reader is directed to, among others, Aaker and Day (1990), Kinnear and Taylor (1996), Hawkins and Tull

(1993), Dillon *et al.* (1994) and Churchill and Iacobucci (2001).

C4.2.1 Systematic errors (bias)

Systematic errors affect the measurements in a constant way and are consequently also known as 'constant errors' or 'constant bias' (Malhorta, 2003; Churchill and Iacobucci, 2005). Such errors result from the research design execution of the research process (McDaniel and Gates, 2002). Efforts were made to eliminate systematic non-sampling errors by ensuring that the information obtained by the measurement technique(s) was a true reflection of a respondent's views and thus provided a reliable platform for subsequent data analysis. Systematic error can be further grouped into measurement errors (see Section C4.2.1.1) and sample design errors (see Section C4.2.1.2). These types of systematic error are dealt with individually and the safeguards are debated.

C4.2.1.1 Measurement errors

Measurement errors result in variation between the information desired and the information observed during the measurement process (McDaniel and Gates, 2002; Malhotra and Birks, 2007). Errors resulting from this situation can be further categorised into: 1) surrogate information errors, 2) interviewer errors, 3) instrument errors, 4) office processing errors, 5) response errors, 6) non-response errors.

Surrogate information errors: These errors occur when there is a discrepancy between the information actually needed for the marketing research problem and the information being sought by the researcher. This problem is mainly, related to how well the researcher can define the research problem (McDaniel and Gates, 2002). Through an extensive review of the relevant literature in the research domain, these types of errors have been minimised.

Interviewer errors: This error results from the interviewer influencing a respondent, consciously or unconsciously, to give untrue or inaccurate answers. Since the survey was personally administered there was a crucial need to minimise this type of error. Several methods were utilised to prevent this occurring such as a strict rule of not expressing any opinions on answers given and refraining from elaboration on issues raised by the questions in the survey instrument.

Instrument errors: Also called questionnaire bias, these errors are a result of problems associated with research measurements or questionnaire for example, unclear instructions, confusing terms,

irrelevant questions and biased words or phrase (McDaniel and Gates, 2002). These errors were minimised through the pre-pilot and pilot stages.

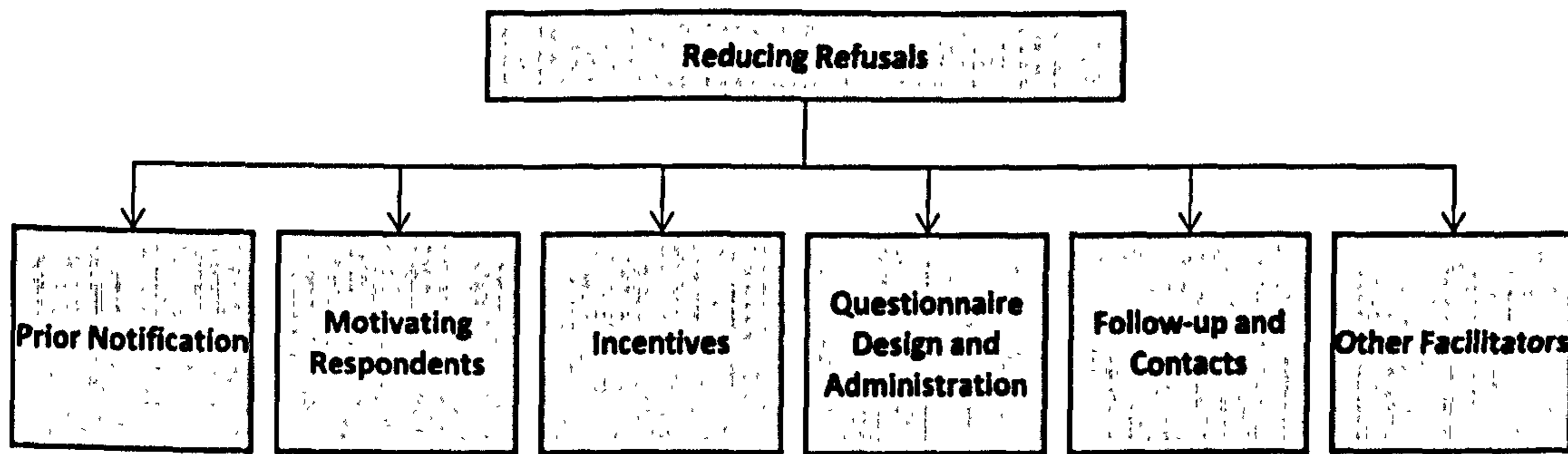
Office processing errors: Office processing error is the error that arises when editing, coding, tabulating or analysing the data (Churchill and Iacobucci, 2005; McDaniel and Gates, 2002). In order to reduce this error, quality-control checks during the transference of data into the computer were carried out. The data input were re-checked and SPSS was used to find any out of range data. Consequently, office-processing error was not considered as a problem and could be ignored.

Response errors: Also referred to as 'field errors' by Churchill and Iacobucci (2005) (who describe this as the most prevalent form of observation error), accrue mainly from individuals participating in the study giving a wrong information or refusing to answer some of the questions, described by Churchill and Iacobucci as "errors of commission and errors of omission", Responses to embarrassing questions or questions associated with income may be biased (Aaker *et al.*, 2000). Such problems were reduced by informing the respondents of the legitimate purpose of the survey and assuring confidentiality of the survey. In addition the questionnaire was pre-tested, through a pilot study, before being sent out before the data collection process commenced. No problems relating to response bias were encountered in the pilot study.

Non response bias: This bias is associated with serious bias in terms of representatives of the received information to the overall sample (Malhorta, 2003). It represents a failure to obtain information from some elements of the population that were selected and designated for the survey. As stated in (Section C2.6.2) mail surveys are associated with relatively poor response rates, which in turn increases the probability of non-response bias (Kinnear and Taylor, 1996). Therefore, in order to increase response rate and reduce the probability of non-response bias, it was decided to administer the survey by means of telephone interviews in which the respondent was contacted and the questions were read out to the respondent by the researcher.

A number of strategies were implemented. An overview of methods designed to improve the response rate is given in Figure C4.2.1.1

Figure C4.2.1.1: Methods to reduce refusals



Source: Malhotra and Birks (2007) *Marketing Research an Applied Orientation*. 3rd edn. Engelwood Cliffs, NJ: Prentice Hall International.

Due to cost and time constraints only some of the above methods were applied. They were chosen because they were supported by a 'survey on surveys' study conducted in the UK by Diamantopoulos and Schlegelmilch (1996).

Incentives: Summary of the results was offered as an incentive. According to Diamantopoulos and Schlegelmilch's (1996) study, this has been identified as a useful strategy to encourage recipients to become involved in the survey without monetary incentives. This strategy was deemed to encourage companies not only to participate but also provide accurate information.

Questionnaire administration: Persuasive wording was used to impact the response rate positively. Although the surveys were not preceded by covering letters, the researcher did precede the administration of the survey by having a brief conversation with the respondent. In the course of this conversation, the recommendations of Dillman, (1978) regarding the use of certain messages/statements was utilised. These are summarised below:

In the event that the respondent did not have time to answer the questionnaire, an appeal was made to forward it to another suitable respondent. 'Egoistic' and 'social utility' requests were made. Terms such as 'your clear appreciation', 'the result will be published in international journals', 'your valuable contribution as an industry expert' were included.

Other facilitators:

- If the respondent was too busy to answer the survey at the time of the call, the researcher requested details of when it might be possible to carry out the survey. A diary was utilised to ensure the efficient follow-up of such calls.

- Anonymity/confidentiality: Assurance of confidentiality as well as a promise of non-identification was clearly emphasised.

Table C4.1: Independent Samples Test

		Levene's Test for Equality of Variances		T-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
uncert1	Equal variances assumed	1.222	.270	.387	184	.699
	Equal variances not assumed			.376	123.465	.707
opport3	Equal variances assumed	.164	.686	1.248	184	.214
	Equal variances not assumed			1.228	127.645	.222
info2	Equal variances assumed	.800	.372	1.090	184	.277
	Equal variances not assumed			1.070	126.697	.287
solid2	Equal variances assumed	1.248	.265	1.698	184	.091
	Equal variances not assumed			1.722	139.533	.087
flex3	Equal variances assumed	1.072	.302	.176	184	.861
	Equal variances not assumed			.170	120.441	.866
adpa2	Equal variances assumed	3.093	.080	.550	184	.583
	Equal variances not assumed			.530	120.198	.597
adap5	Equal variances assumed	.087	.769	1.077	184	.283
	Equal variances not assumed			1.061	128.297	.291

Despite all the efforts (as listed above) to design a professional and user-friendly questionnaire to help increase the response rate, not all respondents who were telephoned were willing to participate. Therefore potential non-response bias may have existed and it was considered necessary to test for possible non-response bias. Following the suggestion of Armstrong and Overton (1977), it was decided to treat late respondents (i.e., those who only participated after numerous phone calls) as behaving similar to non-respondents and to test for possible differences between early and late respondents. In the event of a non-significant difference, this will be taken to indicate a lack/absence of non-response error (Maltz, 1994). This assumption has also been adopted by

researchers such as Heide and Stump (1995) when testing for non-response bias. Independent sample t-tests were carried out in order to test possible differences between early and late respondents for all the research items. This is set out in Table C4.1. The mean differences in the list of random items (one taken from each construct) was tested and it was found that none of the significance was lower than 0.05. Consequently, it can be concluded that no apparent bias between early and late respondents is present and therefore there is no evidence of a non-response bias.

C4.2.1.2 Sampling design errors

Sampling design errors result from errors in the sample or sampling process (McDaniel and Gates, 2002; Hawkins and Tull, 1993; Malhorta, 2003) and encompass: 1) sampling frame errors, 2) population specification errors, and 3) selection errors. It is almost inevitable that empirical research will suffer from some form of sampling error. Nevertheless efforts have been made to minimise such error by careful selection of sampling frames and potential respondents (refer to Section C4.1.3).

Sampling frame errors: Sampling frame error refers to the variation between the population defined by the researcher and the population implied by the sampling frame used (Malhotra and Birks, 2007). This type of error is encountered by using an inaccurate/incomplete sampling frame (McDaniel and Gates, 2002). A full debate of the merits of the adopted sampling frame for the target group is provided in Section C4.1 and consequently not repeated here.

Population specification errors: Population specification error arises from an incorrect definition of population from which the sample is chosen (McDaniel and Gates, 2002). Based on a careful definition of the population of interest this error was not considered to be a problem in this study.

Selection errors: Selection error occurs when sampling procedures are incomplete or improper or when appropriate selection procedures are not followed (McDaniel and Gates, 2002). A systematic sampling process was followed where the sampling frame was accurately based on the criterion set in Section C4.1.

C4.2.2 Random errors

Random error is a measurement error that arises from random changes or differences in respondents

or measurement situations (Malhotra and Birks, 2007; Churchill and Iacobucci, 2005). This type of research error affects the observed value in different ways. Each time the test is administered, the outcome is the lack of consistency when the measurement is made repeatedly on the same person or subject. As suggested by McDaniel and Gates (2002) this type of error can be reduced only by increasing the sample size.

C4.3 DATA ANALYSIS

Data analysis comprised assessment/analysis of measurement accuracy (see Chapter D1); evaluation of measurement structures (see Chapter D2); proposed model and hypotheses testing (see Chapter D3) and group analysis (see Chapter D4). This Section provides a brief discussion of methods used during the analysis.

Measurement accuracy (Chapter D1): The analysis included assessments multi-collinearity for the formative and reliability and validity for the reflective constructs. Multi-collinearity was assessed through examination of the tolerance and variance inflation factors (VIF), as well as condition indices and decomposition of coefficient variances. Reliability was examined through Cronbach α , and composite reliability while average variance extracted (AVE) and cross-loadings were used to test for validity.

Data and research model fit and hypotheses testing (Chapter D2): Exclusively SEM techniques were used to analyse the model fit of the proposed measurement structures and the model and the proposed hypotheses.

PART D

DATA ANALYSIS

This Section comprises two chapters that deal with data analysis:

- ❖ Chapter D1: Testing for multicollinearity and measurement accuracy***
- ❖ Chapter D2: Testing for second order structures, model fit and hypothesised pathways***

CHAPTER D1: TESTING FOR: MULTICOLLINEARITY AND MEASUREMENT ACCURACY

In Part D, Section D1.1 begins with a discussion of multicollinearity for the FLV, followed by Section D1.2 that deals with issues related to the accuracy (i.e. reliability and validity) of the RLVs.

D1.1 TESTING MULTICOLLINEARITY IN THE FLV

Two of the six constructs devised for the study were Formative Latent Variables (FLV). In the case of FLVs, it is the weights, and not the loadings, that are of interest since they indicate the extent to which each item/indicator contributes to the development of the construct. Although, unlike RLVs, there is no need to eliminate/omit non-significant indicators, the following passage from Mathieson *et al.* (2001, p.89), indicates that multicollinearity can be a serious problem:

“The... potential problem is if the degree of correlation for the ‘irrelevant item’ and the other items is high, whereupon standard error estimates can increase.”

Consequently, multicollinearity analysis was carried out for the items under Questions 8 and 9 which related to the construct of ‘Uncertainty’ and Question 14 which related to “Adaptation”, Testing multicollinearity was achieved by regressing the indicators of this LV against an appropriate dependent variable, which in this case was the ‘Information Exchange’. When assessing collinearity the author employed two indicators (see Hair *et al.*, 2006):

- The VIF variance inflation factor (VIF) is the inverse of tolerance that, in turn, denotes the amount of variance in the dependent variable not explained by the other independent variables. A conservative cut-off value of 5 has been adopted here.
- The two-part process involving first identifying conditional indices exceeding a value of 15 and then identifying variables with variance proportions above 0.7 (once again adopting a conservative approach).
- In the event of collinearity, the significance of the indicators assisted the decision as to which one to remove.

D1.1.1 Uncertainty – Collinearity analysis

The results presented in Tables D1.1 below indicate that all VIF values were well below the adopted benchmark of 5. In Table D1.2, we observe that the final conditional index 10.659 is well

below the adopted value of 15 and, looking across the line, we can see that all of the indicators are associated with variance proportions that are well below that of the adopted value of 0.70 with only two minor exceptions. Therefore, on the strength of the above, the evidence of collinearity was found to be minimal; consequently all indicators of this construct have been retained.

Table D1.1: Uncertainty – Collinearity Analysis Coefficients

Model	Unstandardised		Standardised	T	Sig.	Collinearity Statistics	
	Coefficients		Coefficients			Tolerance	VIF
	B	St.Error	Beta				
1 (Constant)	1.937	.398		4.871	.000		
Q8a	-.010	.070	-.015	-.144	.886	.529	1.889
Q8b	.046	.057	.064	.807	.421	.855	1.170
Q9a	-.087	.055	-.125	-1.584	.115	.879	1.137
Q9b	.035	.057	.051	.624	.533	.818	1.223
Q9c	-.049	.067	-.064	-.729	.467	.703	1.422
Q9d	-.084	.078	-.112	1.086	.279	.511	1.959

Note: Dependent Variable: Information Exchange

Table D1.2: Uncertainty - Collinearity Diagnostics Collinearity Diagnostics

Model			Variance Proportions						
	Eigenvalue	Conditional Index	Constant	Q8a	Q8b	Q9a	Q9b	Q9c	Q9d
1	6.173	1.000	.00	.00	.00	.01	.00	.00	.00
2	.253	4.940	.00	.01	.51	.23	.05	.01	.00
3	.196	5.615	.00	.00	.08	.73	.14	.05	.01
4	.161	6.195	.01	.16	.14	.01	.32	.00	.15
5	.099	7.914	.11	.21	.00	.00	.46	.38	.00
6	.065	9.778	.88	.01	.16	.03	.01	.35	.01
7	.054	10.659	.00	.60	.10	.00	.01	.21	.82

Note: Dependent Variable: Q11a

D1.1.2 Adaptation – Collinearity analysis

The results presented in Tables D1.3 indicate that all VIF values were below the adopted benchmark.

Table D1.3: Adaptation – Collinearity Analysis Coefficients

Model	Unstandardised		Standardised	T	Sig.	Collinearity Statistics	
	Coefficients		Coefficients			Tolerance	VIF
	B	St.Error	Beta				
1 (Constant)	2.529	.490		5.160	.000		
Q8a	.059	.091	.059	.653	.514	.600	1.666
Q8b	.028	.082	.030	.345	.731	.639	1.566
Q9a	.057	.086	.053	.665	.507	.773	1.294
Q9b	.203	.084	.202	2.421	.016	.707	1.414
Q9c	.132	.095	.128	1.386	.168	.580	1.725
Q9d	-.007	.095	-.007	-.073	.942	.591	1.691

Note: Dependent Variable: Opportunism

Table D1.4: Adaptation - Collinearity Diagnostics

Model	Variance Proportions								
	Eigenvalue	Conditional Index	Constant	Q8a	Q8b	Q9a	Q9b	Q9c	Q9d
1	6.013	1.000	.00	.00	.00	.00	.00	.00	.00
2	.374	4.008	.02	.02	.04	.03	.04	.16	.15
3	.182	5.742	.05	.59	.11	.02	.02	.13	.02
4	.146	6.411	.02	.02	.00	.01	.05	.56	.68
5	.121	7.040	.15	.26	.41	.10	.14	.00	.09
6	.099	7.781	.01	.10	.41	.05	.74	.14	.04
7	.063	9.769	.75	.00	.03	.79	.00	.00	.02

Note: Dependent Variable: Q10c

Furthermore, in Table D1.4, we observe that the final conditional index 9.769 is well below the adopted value of 15 and, looking across the line, we can see that only two of the indicators are associated with variance proportions that are above the adopted value of 0.70. Therefore, on the strength of the above, the evidence of collinearity was found to be so minimal that its likely effect to allow for its retention; consequently all indicators of this construct have been retained.

D1.2 TESTING MEASUREMENT ACCURACY

This Section presents investigations related to the accuracy of the RLVs. This is considered to represent an important step prior to testing the research model. The measurements' accuracy

analysis presented here includes reliability and validity tests. Churchill (1979) states that 'if a measure is valid, it is reliable'. However, Gronlünd (1982) points out that 'reliability is necessary to obtain validity', and, similarly, it has been suggested by Spector (1992) that one should first establish the essential property of reliability before conducting validity tests. Therefore, by following Spector (1992) and Gronlünd (1982), reliability is assessed first, followed by the evaluation of validity.

D1.2.1 Reliability

Reliability concerns the degree of stability and consistency when a scale is used repeatedly (Malhotra & Birks, 2007; Chisnall, 1997). A number of approaches have been recommended to assess reliability, such as scorer reliability, test-retest reliability (repeatability reliability), alternative-form reliability and internal-consistency reliability, each of which is debated in turn (see among others, DeVellis, 1991; Malhotra and Birks, 2007; Tull and Hawkins, 1993; Zikmund, 1997).

Scorer Reliability: Scorer reliability should be carried out in order to ensure the reliability of the judgement made by judges or scorers (Tull and Hawkins, 1993). Data for the current research have been obtained through rating-scale items that did not require the author to judge the scores. Consequently, testing scorer reliability is considered to be unnecessary for the current research.

Test-retest and Alternative-form Reliability: In test-retest reliability, the same participants are administered identical sets of scale items at two different times, with conditions as near equivalent as possible. In alternative-form reliability, two equivalent forms of scales are administered to the same participants at two different times (DeVellis, 1991; Malhotra and Birks, 2007; Tull and Hawkins, 1993). As suggested by Malhotra and Birks (2007), the time interval for both test-retest and alternative-form reliability tests is usually between 2 to 4 weeks. High correlation between the two results is taken to indicate a high degree of reliability. In this study, due to obvious constraints, i.e. engaging senior executives, the author was unable to carry out such tests. For example, although during the pilot stage of the questionnaire development some interviewees agreed to participate in a repeat test, only a very small number of them were able to participate within the recommended time scales due to business commitments. Consequently, neither test-retest nor alternative-form reliability tests were feasible.

Individual Item Reliability: Individual item reliability refers to loadings, or simple correlations of the indicators with their respective LV, and, consequently, implies that such an examination is relevant only for RLVs. Therefore, in the context of this study, since Uncertainty and Adaptation

are formative latent constructs, it is not relevant to test their reliability. Consequently, for reflective indicators, under PLS, those that, (a) exhibited loadings with the intended construct of 0.60 or more, and (b) were found to be significant following bootstrapping analysis, have been retained.

In the case of FLVs, it is the weight and not the loadings that are of interest since they indicate the extent to which each item / indicator contributes to the development of the construct. However, unlike RLVs there is no need to eliminate / omit non-significant formative measures. The following passage from Mathieson *et al.* (2001, p.89) is used as justification:

'The inclusion of non-significant formative measures should not affect the estimates and any re-analyses after dropping non-significant items is not required. Because PLS is based on standard ordinary least squares regression, mis-specification due to the inclusion of 'irrelevant' items will not bias the estimates of significant items.'

However, given the rather limited information provided by PLS, the author, additionally, carried out the following:

- Cronbach's coefficient a reliability tests: Split-half reliability test involves the separation of items on the scale into two parts. If the results of the two parts are highly correlated, this is taken to be an indication of reliability. However, results from split-half tests have been found to be highly dependent on the way the items have been separated (Malhotra and Birks, 2007) and, consequently, this test has not been applied here. Instead, an alternative method designed to overcome this problem is Cronbach's coefficient α , which involves calculating the average of all possible split-half coefficients. This method has been used in the present study.

Two Cronbach's coefficient a indices, i.e. the a value and item-to-total correlations were utilised. The benchmark level of acceptable a values suggested by academics varies. For example, Nunnally (1978) recommended 0.5 to be the cut-off value, while the suggestion of Malhotra and Birks (2007) and Hawkins and Tull (1993) is 0.6 and that of Churchill (1997) is 0.7. In this study, the cut-off value adopted was 0.6, i.e. if the a value was less than 0.6, the item that could improve the a value was removed in order to increase the reliability of the scale. The acceptable benchmark level for item-to-total correlation was set at above 0.3, i.e. any item that exhibited an item-to-total correlation lower than this value was removed. In general, the process continued until both the a value and all item-to-total correlations were acceptable.

- Internal Consistency (Fornell and Larcker, 1981): This measure is similar to Cronbach's coefficient α as a measure of internal consistency, except that the latter presumes *a priori* that each indicator of a construct contributes equally. In addition, Fornell and Larcker (1981) argue that their measure is more advanced than Cronbach's coefficient α since it uses the item loadings estimated within the causal model. Furthermore, their measure, which is not influenced by the number of items in the scale, is more general than Cronbach's coefficient α . The adopted benchmark is 0.7.

The following three Sections present the results of the tests detailed above. The sequence in which the tests were undertaken and the results reported are first, the Cronbach α , followed by PLS Loadings and finally, Internal Consistency. The details in the tables reflect this order. It should be noted that any changes made after the Cronbach α tests were carried forward to CFA and similarly any changes made after CFA, were carried forward to PLS.

D1.2.1.2 Opportunism

As seen in Table D1.4, the Cronbach's α was 0.872 and all item-to-total correlations were above 0.3, therefore, no change to the scale was deemed necessary.

Table D1.5: Internal Consistency of "Opportunism"

Construct/Items	Cronbach's α		Internal Consistency	
	Item-to-total correlation	α value	Loadings (t-values)	CR
		.872		.906
Q10a	.765		.868 (30.61)***	
Q10b	.699		.788 (16.39)***	
Q10c	.764		.854 (26.96)***	
Q10d	.591		.716 (8.59)***	
Q10e	.672		.823 (25.64)***	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

In addition, all loadings for the PLS solution were significant and the Internal Consistency value of 0.906 is also above the acceptable benchmark of 0.7. Consequently, no purification was deemed necessary.

D1.2.1.3 Information Exchange

As seen in Table D1.5, the initial Cronbach's α was 0.811 and all item-to-total correlations were above 0.3, therefore, no change to the scale was deemed necessary.

Table D1.6: Internal Consistency of "Information Exchange"

Construct/Items	Cronbach's α		Internal Consistency	
	Item-to-total correlation	α value	Loadings (t-values)	CR
		.811		.878
Q11a	.526		.762 (6.126)***	
Q11b	.677		.815 (8.451)***	
Q11c	.703		.823 (6.904)***	
Q11d	.632		.805 (6.193)***	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

In addition, all loadings for the PLS solution were significant and the IC value of 0.878 is also above the acceptable benchmark of 0.7. Consequently, no purification was deemed necessary.

D1.2.1.4 Solidarity

As above, all items met the set criteria, see Table D1.6. The Cronbach α was 0.778. In addition, all loading for the PLS solution were significant. The IC value of 0.861 is above the adopted benchmark.

Table D1.6: Internal Consistency of "Solidarity"

Construct/Items	Cronbach's α		Internal Consistency	
	Item-to-total correlation	α value	Loadings (t-values)	CR
		.778		.861
Q12a	.536		.710 (5.873)***	
Q12b	.692		.832 (11.033)***	
Q12c	.530		.787 (9.349)***	
Q12d	.600		.782 (8.78)***	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

D1.2.1.5 Flexibility

As shown in Table D1.7 all criteria were above the cut-off points, all loading for the PLS loading; the internal consistency value at 0.861 was above the acceptable benchmark of 0.7. were significant and therefore no purification was necessary.

Table D1.7: Internal Consistency of “Flexibility”

Construct/Items	Cronbach's α		Internal Consistency	
	Item-to-total correlation	α value	Loadings (t-values)	CR
		.676		.826
Q13a	.500		.791 (5.624)***	
Q13b	.579		.897 (4.899)***	
Q13c	.428		.645 (2.816)***	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

D1.2.2 Validity

Validity is the process by which we can determine whether a construct measures what it is intended to measure (Churchill, 1979). Validity is further inferred from the manner in which a scale was constructed, its ability to predict specific events or its relationships to measures of other constructs. In this Section, three types of validity that correspond to these operations will be examined. These are content validity, convergent validity and discriminant validity and are debated below.

Content and Face Validity: Content validity refers to whether the domain of the characteristics of the constructs is captured by the measure (Churchill, 1979). In order to develop measures capable of capturing the content of the research constructs/dimensions, the procedure proposed by Churchill (1979) was followed during the operationalisation of the measurements. This rigorous procedure relies mainly on experts' opinions and has been widely adopted in marketing research.

The procedure started with an exhaustive study of the subject matter in order to gain a thorough understanding and grounding of the issues involved. An extensive examination of previous studies and theoretical literature was carried out (see Part B - Literature Review and Chapter C - Research Framework). Following this, the measurements of the research constructs/dimensions were operationalised from previous studies that provided the empirical definitions of the constructs/dimensions. The next stage was to interview professionals and practitioners from the target population. At this stage, suggestions were incorporated in order to enrich the content of the measurements, and inappropriate or unclear items measuring the research constructs/dimensions were eliminated or modified (for a detailed discussion, see Section C3.1). This is believed to have provided sufficient evidence of both face and content validity for both RLVs and FLVs.

Convergent Validity: Given that, 'Convergent validity of a construct represents the ratio of the amount of variance of its indicators captured by the construct, relative to the amount of total variance, including the variance due to measurement error' (Cool *et al.*, 1989), it is apparent that

such validity can only be examined when we have RLVs. In other words, convergent validity requires that a measure should correlate highly with other measures of the same construct (Malhotra and Birks, 2007). Two approaches were utilised for the purposes of this research, these were Average Variance Extracted (AVE) and Cross Loadings (obtained from PLS) *Average Variance Extracted* (AVE): as suggested by Fornell and Larcker (1981), provides a measure of convergent validity. In this study their recommendation that AVE should be greater than 0.50, i.e. that 50% or more variance of the indicators should be accounted for, is adopted.

Cross Loadings: Similar to employing factor analysis, the loadings and cross-loadings of the reflective indicators of the RLV, as provided by PLS (i.e., the theta matrix) are also examined. The indicators assumed to reflect the same LV should show high correlation on a hypothesised LV and low correlation with other indicators assumed to reflect different sets of common underlying dimensions/LVs. Although all constructs were examined simultaneously, in order to simplify the presentation of the results only the cross-loading of those constructs allocated to the same dimensions are presented. Gefen and Straub suggest that the square root of the AVE of each construct needs to be much larger (but also point out that the extent of the difference does not appear anywhere as guidelines) than any correlation between this construct and any other construct. In the next part of this discussion, the square root figure appears in parenthesis next to the AVE figure.

D1.2.2.1 Opportunism:

The AVE value of 0.659 was above the adopted benchmark of 0.5. Given the overall stability of the solution, no changes were made and the results confirmed the convergent validity of this construct. The results confirmed the convergent validity of this construct and no further change were made.

Table D1.8: PLS Loadings & Cross Loadings of RLVs for 'Opportunism'

	Information					
	Adaptation	Uncertainty	Opportunism	Exchange	Solidarity	Flexibility
Q10a	0.369	0.111	0.868	-0.083	-0.063	-0.015
Q10b	0.256	0.104	0.789	0.028	-0.083	-0.050
Q10c	0.321	0.087	0.855	-0.035	-0.116	-0.016
Q10d	0.278	0.186	0.716	0.076	0.014	0.070
Q10e	0.403	0.147	0.824	-0.039	-0.033	-0.012

D1.2.2.2 Information Exchange

The AVE value for the Information Exchange construct was 0.643, again, above the adopted benchmark. The rest of the statistics presented in Table D1.12 meet the adopted criteria. Consequently, no changes have been made and the results confirmed the convergent validity of this construct.

Table D1.9: PLS Loadings & Cross Loadings of RLVs for "Information Exchange"

	Information					
	Adaptation	Uncertainty	Opportunism	Exchange	Solidarity	Flexibility
Q11a	0.204	0.056	-0.023	0.762	0.364	0.339
Q11b	0.161	0.171	-0.034	0.816	0.397	0.351
Q11c	0.155	0.042	-0.043	0.823	0.330	0.316
Q11d	0.183	0.015	0.023	0.806	0.406	0.379

D1.2.2.3 Solidarity: The AVE value of 0.63 was above the benchmark. The rest of the statistics presented in Table D1.9 meets the adopted criteria. Consequently, no changes have been made and the results confirmed the convergent validity of this construct.

Table D1.10: PLS Loadings & Cross Loadings of RLVs for "Solidarity"

	Information					
	Adaptation	Uncertainty	Opportunism	Exchange	Solidarity	Flexibility
Q12a	0.203	-0.009	-0.071	0.353	0.711	0.477
Q12b	0.223	0.049	-0.102	0.444	0.833	0.526
Q12c	0.295	0.272	0.054	0.294	0.788	0.487
Q12d	0.243	0.050	-0.124	0.393	0.783	0.555

D1.2.2.4 Flexibility: The AVE value of 0.616 was above the accepted benchmark. Thus, convergent validity was confirmed.

Table D1.11: PLS Loadings & Cross Loadings of RLVs for “Flexibility”

	Information					
	Adaptation	Uncertainty	Opportunism	Exchange	Solidarity	Flexibility
Q13a	0.172	0.098	0.028	0.293	0.514	0.792
Q13b	0.253	0.055	0.021	0.435	0.570	0.898
Q13c	0.119	-0.091	-0.109	0.258	0.466	0.645

D1.2.3 Discriminant Validity

Discriminant validity implies that a measure should correlate poorly with other dimensions/items that are supposed to be different (Churchill and Iacobucci, 2001). In this respect, an indication of adequate discriminant validity is that a LV shares more variance with its measures than it does with other constructs in the model. It is recommended that, for a construct to exhibit adequate discriminant validity the square root of the construct’s AVE should be noticeably greater than its bivariate correlation with the other constructs in the model. As seen in Table D1.12 this holds true for all RLV constructs.

Table D1.12: Correlation Matrix for the Dimensions of the Research Constructs

Constructs	Opportunism	Human	Tech	Information	Solidarity	Flexibility
		Adaptation	Adaptation	Exchange		
Opportunism	0.812					
Human Adaptation	0.212	<i>n/a</i>				
Tech Adaptation	0.357	-0.560	<i>n/a</i>			
Information Exchange	0.032	-0.182	0.139	0.802		
Solidarity	0.023	-0.304	0.257	0.574	0.794	
Flexibility	0.043	0.322	0.240	0.424	0.696	0.785

Note: Diagonal elements represent the square roots of AVE of reflective multi-item constructs. Off-diagonal elements are the correlations of the corresponding constructs.

D1.3 CONCLUSION

In the first part of this Chapter, the formative latent variables were tested for multicollinearity constructs included in the study: Uncertainty and Adaptation. Two indicators were employed: the VIF and Conditional indices. For both indicators, the results for collinearity were within acceptable limits for both Uncertainty and Adaptation. In the second part of the Chapter, the accuracy (i.e., the reliability and validity of the reflective latent variables of opportunism, information exchange,

solidarity and flexibility were examined. All of the reported results for reliability and for validity for all of the constructs were found to be above the adopted benchmarks

CHAPTER D2: TESTING HYPOTHESISED PATHWAYS USING A RESEARCH MODEL AND TWO COMPETING MODELS

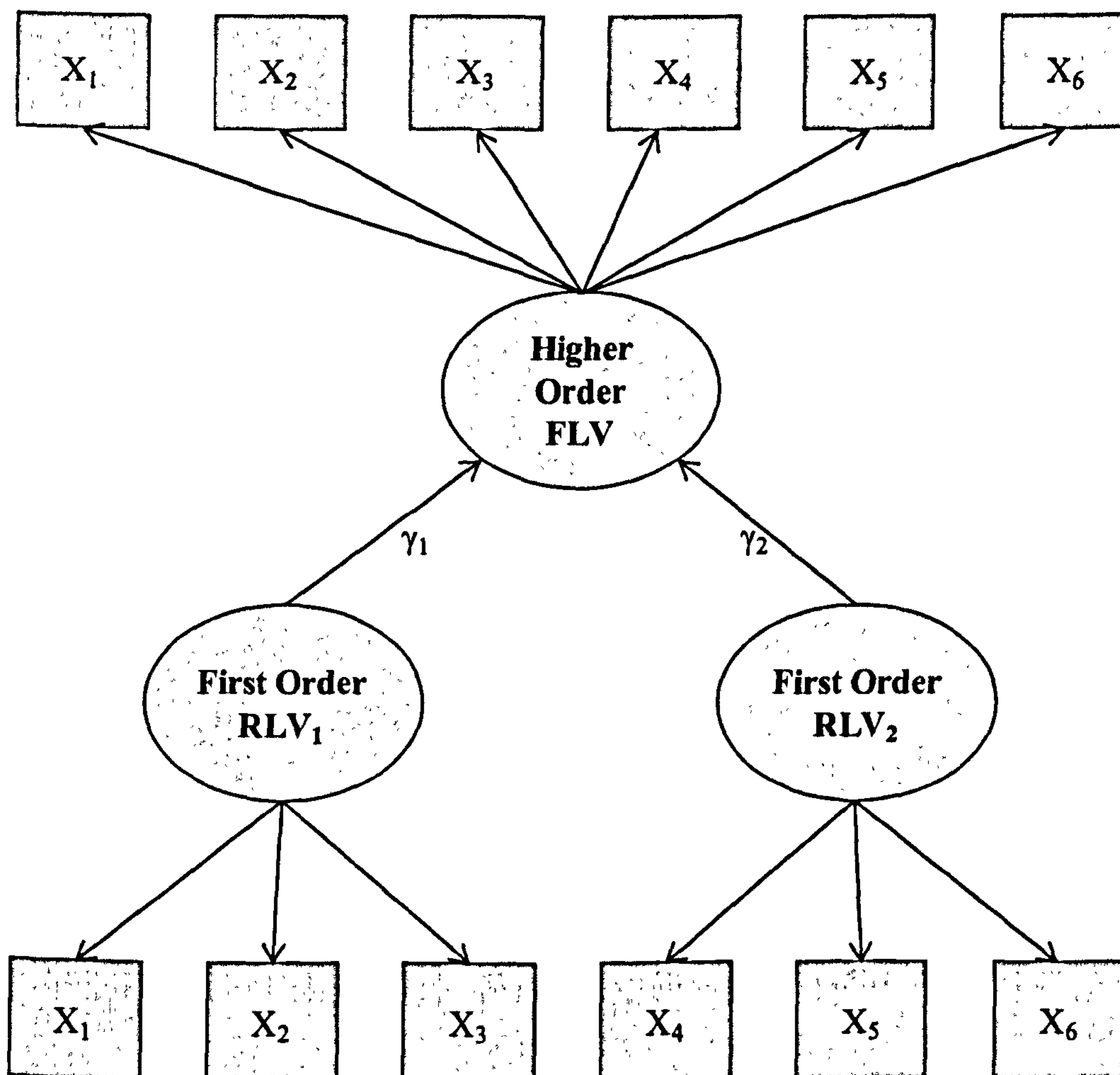
D2.1 INTRODUCTION

The focus of this Chapter is the analysis of the research and two competing models. However, before proceeding to test the hypothesised functional relationships the proposed higher order structure of adaptation and relational norms are examined.

D2.2 HIGHER ORDER STRUCTURES

An acceptable method of testing for second order structures is according to Chin (set out under the FAQ heading of his PLS website (<http://disc-nt.cba.uh.edu/chin/plsfaq/plsfaq.htm>)) a process of repeated manifest variables.

Figure D2.1: Example of Testing Higher Order Structures using Repeated Measures.

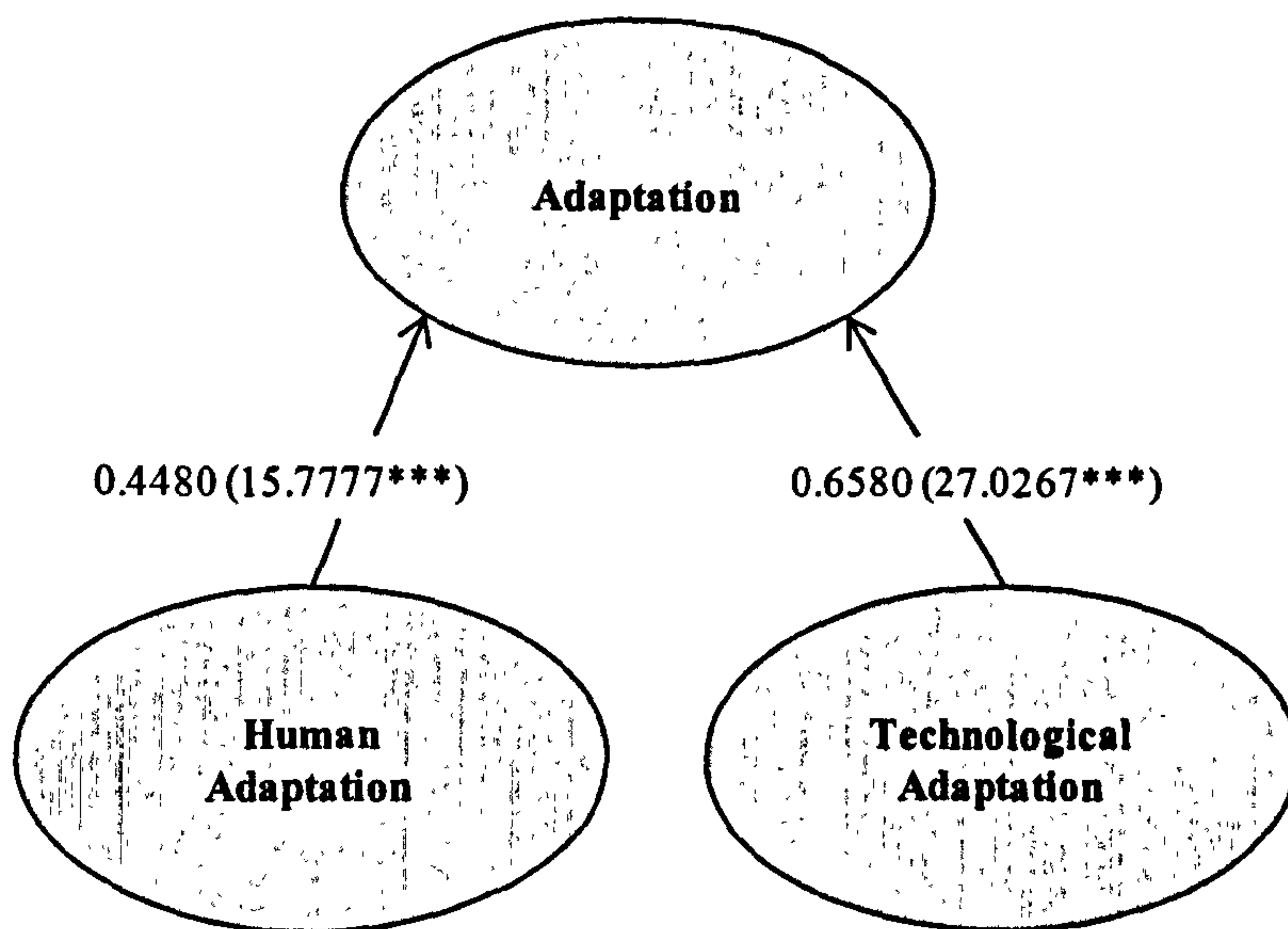


The process of using repeated manifest variables implies that the indicators of the first order constructs are also assigned to the higher order construct. Therefore, in the context of the example set out in Figure D2.1, the higher order FLV is operationalised as a composite of X_1 to X_6 which are the indicators of the two first order FLVs. In order for the structure to be supported, the regression coefficients γ_1 and γ_2 should be statistically significant.

D2.2.1 Higher order structure of adaptation

Adaptation is hypothesized to represent a higher order FLV that comprises two lower order constructs (i.e., human adaptation and technological adaptation). The solution presented in Figure D2.2 indicates that all regression coefficients are significant thus confirming the proposed structure.

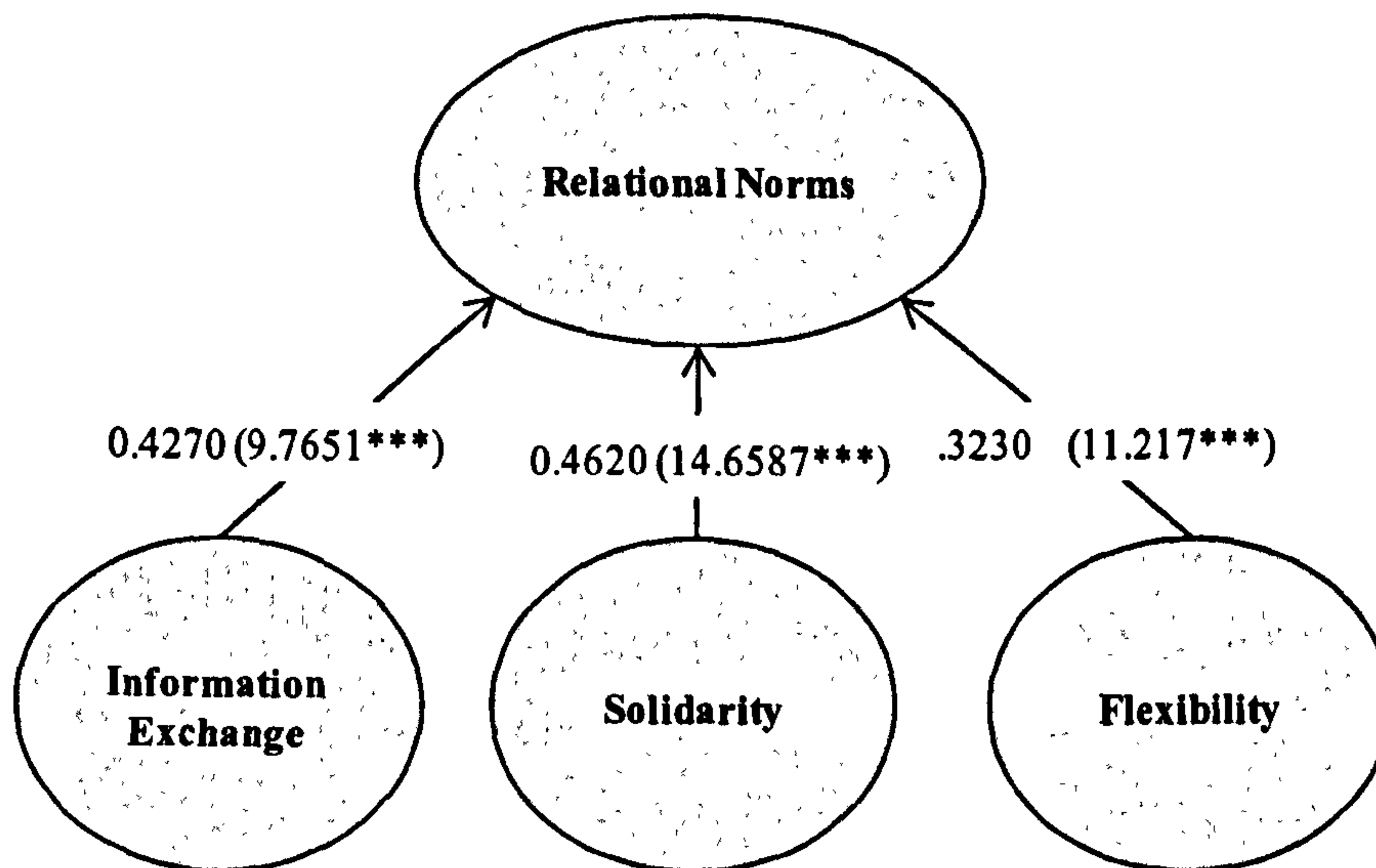
Figure D2.3: Second order structure of Adaptation



Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

D2.2.2 Higher order structure of relational norms

Examination of the regression coefficients linking the first order LVs (i.e., information exchange, solidarity and flexibility) to the hypothesized higher order of relational norms indicates that all are significant thus confirming the proposed structure. (Figure D2.4).

Figure D2.4: Second order structure of Relational Norms

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Therefore, in conclusion it can be seen that as explained in Section D2.21 and D2.2.2, both adaptation and relational norms are conceptualized as second order formative constructs. The information presented in figures D2.1 and D2.2 indicates that all regression coefficients linking each dimension with its respective higher order construct are significant. Therefore, the proposed structure is confirmed.

D2.3 TESTING THE RESEARCH AND COMPETING MODEL: ANALYTICAL APPROACH

D2.3.1 PLS

Unlike CB-SEM that provides a clearly defined approach for testing higher-order structures, the situation with PLS is less clear. However, Chin, under the FAQ heading of his PLS web page (<http://disc-nt.cba.uh.edu/chin/plsfaq>), suggests that the method of repeated manifest variables is an acceptable approach. Quoting from a reply provided by Chin on his web page 'If the number of indicators for each of your two constructs are approximately equal, you can use the method of repeated manifest variables.' and 'Essentially, your overall factor that represents the two first order constructs is created by using all the indicators used for the first two order constructs'. Within the above approach PLS based analysis represents the approach followed by Barclay and Benson (1990) and is consistent with classical examination of quality of measurements (see Churchill, 2001; Spector, 1992; DeVellis, 1991). The significance of the loadings of each construct to the

hypothesised dimension is examined.

In terms of model goodness of fit, as already stated (see Section D1.1) PLS makes no assumptions about the distribution of the variables and, consequently, traditional parametric-based approaches cannot be employed. Instead the recommendation (Chin, 1998) is to use non-parametric measures such as R^2 for dependent LVs, the Stone-Geisser test for predictive relevance of independent variables and resampling procedures (e.g., jack-knife and bootstrapping) when testing the significance of estimates. This means that unlike covariance-based SEM, PLS does not provide a single goodness-of-fit metric for the entire model; instead the R^2 values of individual dependent values are examined. The following borrow heavily from the explanations and guidelines provided by Chin (1998) and Barclay and Benson (1990).

Statistical significance: In assessing the statistical significance of loadings, weights and pathway coefficients (given as standardised values) a bootstrapping analysis was employed (Chin, 1998 for justification as to preference of bootstrapping over jack-knife) with estimates based on 500 samples (Mathieson *et al.*, 2001). Using Student t-value tables with $n-1$ degrees of freedom (where n is the number of samples) resulted in one-tail critical values of, respectively 0.05, 0.01 and 0.001 levels of significance, 1.65, 2.33 and 3.09.

R^2 : The interpretation is similar to that employed under traditional multiple regression analysis, i.e. indicates the amount of variance explained by the model. Examination of the change in R^2 can help to determine whether a LV has a substantial effect on a particular dependent LV. The following expression provides an estimate of the effect size of f^2 and, using the guidelines provided by Cohen and Lee (1988), interprets f^2 values of .02, .15 and .35 as respectively representing small, medium and large effects.

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

Q^2 Predictive Relevance: This relates to the predictive sample reuse technique that represents a synthesis of cross-validation and function fitting. In PLS this can be achieved through a blindfolding procedure that ‘... omits a part of the data for the particular block of indicators during parameter estimations and then attempts to estimate the omitted part using the estimated parameters.’ In terms of interpretation a $Q^2 > 0$ implies that the model has predictive relevance while $Q^2 < 0$ indicates a lack of predictive relevance.

Interaction effects: The approach adopted by plsgraph for the treatment of interaction effects was set out by Chin, Marcolin and Newsted, 1996. For reflective indicators, the approach is to

standardise or centre indicators for main and moderating constructs. Each indicator from the main construct is multiplied by each indicator from the moderating construct to create pair-wise product indicators. The pair-wise indicators are used to reflect the interaction construct. In the case of formative indicators, the approach was different. It is a two stage process. The first stage consists of using the formative indicators in conjunction with PLS to create underlying construct scores for the predictor and moderator variables. The second stage consisted of taking the composite scores from PLS to create a single interaction term.

D2.4 TESTING THE RESEARCH MODEL

Results related to the initial and revised solutions of the research model are presented in Table D2.1. Once the initial solution was obtained an iterative process of eliminating non-significant pathways. The process was repeated until a parsimonious solution was obtained. The observations and analysis regarding the significance of the hypothesised pathways using the aggregated model are set out below in Table D2.1.

The research model had a total of five initial pathways which were systematically tested. Following the iterative approach outlined above, once non-significant pathways had been removed, three were supported. Details of the initial and final solutions for the research model are set out in Table D2.1. The initial solution indicates that the hypothesised pathways between uncertainty and adaptation, as well as that between the modelled interaction effect of relational norms and opportunism on adaptation were not supported. These were removed in accordance with the iterative approach outlined above. The final version of the research model

The initial and final model are annotated with three significant determinants of adaptation, i.e., "Relational Norms", "Opportunism" and the interaction between Relational Norms and Uncertainty. The results set out in Table D2.1. also shows a result for the R^2 value for the model. The removal of the non-significant pathways has resulted in a slight decrease of the R^2 value from an initial 0.449 to 0.435. In other words, the final solution explains 43.5% of variance in adaptation is considered to be extremely satisfactory.

Table D2.1: PLS Solution for Research Model

Structural Pathways	Initial Coefficients	Initial T statistics	Revised Coefficients	Revised T statistics	f^2
Relational Norms → Adaptation	0.355	(4.27) ***	0.332	(4.59) ***	0.12
Uncertainty → Adaptation	0.129	(1.23)			
Opportunism → Adaptation	0.370	(4.72) ***	0.382	(4.71) ***	0.18
RelNorms_Uncert → Adaptation	-0.254	(1.98) *	-0.222	(2.14) *	0.05
RelNorms_Opport → Adaptation	0.076	(0.57)			
Relational Norms → Adaptation	0.355	(4.27) ***	0.332	(4.59) ***	0.12
Goodness of Fit and Predictive Relevance Values	R^2		R^2	Q^2	
Outcome : Adaptation	0.449		0.435	0.133	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table D2.1 also sets out details of the f^2 values for the significant pathways. Using the guidelines provided by Cohen and Lee (1988), the strength of effects for the interaction between Relational Norms and Uncertainty and Relational Norms are considered to be small while Opportunism exhibits a medium effect. The pathway between “Opportunism” and “Adaptation” has a f^2 value of 0.18 which represents a medium effect. The predictive relevance of the model is confirmed by the positive Q^2 value.

D2.5 TESTING THE FIRST COMPETING MODEL

The first competing model represents a disaggregation of the higher order construct of “Adaptation” into the constructs of Human Adaptation and Technological Adaptation and which correspondingly represent adaptation of personnel and technology respectively. The results for Competing Model One are shown in Table D2.2.

- Following the same reduction process as in Section D2.4 a final solution is arrived at which possesses (at respectively 0.362 and 0.395) considerable explanatory power for the dependent variables of Human Adaptation and Technological Adaptation since the R^2 value for the two variables are 0.362 and 0.395 respectively. Of the initial ten pathways only seven have been found to be significant.

Table D2.2: PLS Solution for the first competing model

Structural Pathways		Initial Coefficients	Initial T statistics	Revised Coefficients	Revised T statistics	f^2
Uncertainty →	AdapHum	0.038	(0.45)			
Uncertainty →	AdapTec	0.204	(1.97) *	0.215	(2.66) **	0.06
Opportunism →	AdapHum	0.299	(3.11) ***	0.317	(3.61) ***	0.10
Opportunism →	AdapTec	0.359	(4.34) ***	0.324	(4.29) ***	0.12
Relational Norms →	AdapHum	0.215	(1.86) *	0.232	(2.53) **	0.05
Relational Norms →	AdapTec	0.415	(4.47) ***	0.331	(4.94) ***	0.12
RelNorms_Opport →	AdapHum	-0.49	(0.33)			
RelNorms_Opport →	AdapTec	0.189	(1.29)			
RelNorms_Uncert →	AdapHum	-0.302	(1.82) *	-0.281	(2.51) **	0.06
RelNorms_Uncert →	AdapTec	-0.221	(1.87) *	-0.148	(1.68) *	0.02
Goodness of Fit and Predictive Relevance Values		R^2		R^2	Q^2	
Outcome : AdapHum		0.366		0.362	0.1024	
Outcome : AdapTec		0.397		0.395	0.1096	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Specifically:

- “Opportunism”, and “Relational Norms” have a significant influence on both human and technical adaptation represented, respectively by Human Adaptation and Technological Adaptation,
- “Uncertainty” is a significant determinant of only Technological Adaptation,
- The interaction between “Relational Norms” and “Opportunism” has no significant effect on either of the two dependent variables.
- Finally, the interaction between “Relational Norms” and “Uncertainty” is a significant determinant of both dimensions of adaptation.

The effect size of all significant determinations varies between small and medium and with both Q^2 values greater than zero the model exhibits predictive relevance for both dimensions of adaptation.

D2.6 TESTING THE SECOND COMPETING MODEL

The main difference between the first and second competing models is in the relaxation of the relational norm construct into its three constituent elements: information exchange, solidarity and flexibility. The results for competing model 2 are presented in Table D2.3.

The same procedure of using stepwise deletion to eliminate non-significant pathways was adopted for competing model two. This procedure showed that even though the effect of the removal of the

non-significant pathways was to cause a small reduction in the R^2 for both Human Adaptation and Technological Adaptation, the revised solution has strong explanatory power, recording values of 0.470 and 0.386 respectively. The model was also shown to have predictive relevance due to positive Q^2 values.

The following results can be reported:

- Both Solidarity and Opportunism have a significant effect of both types of adaptation (Human Adaptation and Technological Adaptation).
- The interactions of both Opportunism and Information Exchange (“Opport_InfoExch”) and Uncertainty and Solidarity (“Uncert_Solid”) have significant effects on both types of adaptation (Human Adaptation and Technological Adaptation).

Table D2.3: PLS Solution for Competing Model Two

Structural Pathways	Initial Coefficients	Initial T statistics	Revised Coefficients	Revised T statistics	f^2
Information Exchange → AdapTec	0.123	(1.33)	0.139	(1.67) *	0.02
Information Exchange → AdapHum	-0.010	(0.11)			
Solidarity → AdapTec	0.220	(2.12) **	0.284	(3.28) ***	0.10
Solidarity → AdapHum	0.133	(1.22)	0.164	(1.74) *	0.03
Flexibility → AdapTec	0.110	(1.13)			
Flexibility → AdapHum	0.086	(0.85)			
Opportunism → AdapTec	0.389	(4.66) ***	0.373	(4.40) ***	0.17
Opportunism → AdapHum	0.323	(3.31) ***	0.278	(3.05) **	0.09
Uncertainty → AdapTec	0.170	(1.69) *	0.175	(2.31) *	0.05
Uncertainty → AdapHum	0.044	(0.50)			
Opport_Info Exch → AdapTec	-0.421	(3.24) ***	-0.422	(3.21) ***	0.10
Opport_Info Exch → AdapHum	-0.315	(2.28) *	-0.220	(1.72) *	0.04
Opport_Solid → AdapTec	0.624	(2.27) *	-0.549	(3.15) ***	0.10
Opport_Solid → AdapHum	0.144	(0.58)			
Opport_Flexib → AdapTec	0.097	(0.29)			
Opport_Flexib → AdapHum	0.000	(0.00)			
Uncert_Info Exch → AdapHum	0.156	(0.23)			
Uncert_Info Exch → AdapTec	0.034	(0.96)			
Uncert_Solid → AdapHum	-0.274	(2.32) *	-0.204	(2.43) **	0.04
Uncert_Solid → AdapTec	-0.331	(1.7) *	-0.288	(1.65) *	0.07
Uncert_Flex → AdapHum	-0.055	(0.56)			
Uncert_Flex → AdapTec	-0.151	(0.36)			
Goodness of Fit and Predictive Relevance Values	R^2		R^2	Q^2	
AdapHum.	0.407		0.386	0.0921	
AdapTec.	0.471		0.470	0.1448	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

- The remaining pathways showing significant results were as determinants of technological adaptation. These were information exchange and uncertainty and the interaction of opportunism and solidarity.

- Flexibility was not a significant determinant when tested for main effects nor when tested as an interaction with either opportunism or uncertainty.

The f^2 value show that the effect size of all significant determinations ranged from small to medium in terms of the size of the effects according to the guidelines provided by Cohen and Lee (1988).

Finally, it can be seen that Competing Model 2 has a predictive value since the results show that it has predictive relevance for the construct of Human Adaptation as the Q^2 value is greater than 0 at 0.0945. The Q^2 value for Technological Adaptation is greater than 0 at 0.1192

PART E

CONCLUSIONS AND DEBATE

This Section comprises one chapter:

❖ *Chapter E1: Conclusions and Debate*

CHAPTER E1: CONCLUSIONS AND DEBATE

E1.1 INTRODUCTION

The purpose of this chapter is to provide a brief overview of the study and the associated research issues before offering a discussion of the research objectives. After this the empirical results are debated in relation to the relevant literature before proceeding to delineate the contributions of this study and offer suggestions for future research.

The literature review presented in Chapters B, established that adaptation is a construct of central importance within the transaction cost analysis paradigm, supports the claim that uncertainty and opportunism are conceptualised as obstacles to adaptation within business relationships. However, none of the reviewed studies has placed adaptation at the centre of an empirical examination and has specifically examined the effects of uncertainty and opportunism on adaptation within business relationships. Moreover, the role of hybrid governance in the form of relational norms, in both attenuating the negative effects of uncertainty and opportunism, as well as enhancing adaptation within business relationships has not received any specific empirical examination.

The above has provided the departure point of this study, whose aim is to examine the impact that hybrid governance in the form of relational norms has on adaptation within business relationships (see Chapter B). In order to achieve this aim, a theoretically grounded and justified model has been developed (see Chapter C1). Given the identified paucity of empirical investigations in this area (see Chapter B), this author has consulted the literature devoted to both transaction cost analysis, as well as to literature devoted to the study of relational norms (see Chapter B), in order to develop the proposed model (see Chapter C1). In order to test the proposed model in business relationships, appropriate research constructs were operationalised (see Chapter C3).

E1.2 RESEARCH OBJECTIVES

In order to achieve the overall aim of the research four specific objectives were defined. Objectives 1 to 3 are debated below while Objective 4 is dealt with in Section E1.4.

Objective 1: Building, through an extensive literature review, a theoretically grounded model that incorporates relational norms and their effects on adaptation, uncertainty and opportunism in the context of business relationships: As already debated in Chapter C1, a research model that: a) depicts the effects of relational norms on adaptation; b) the negative effects of uncertainty and opportunism on adaptation; and, c) the effect of the interaction of both uncertainty and opportunism

with relational norms on adaptation has been proposed. The relational norms were selected from a number of constructs which were identified during the literature review. Through the two competing models (see Chapter C1), adaptation was specifically studied by examining the nature of technological and human adaptation, and the role of three specific relational norms: information exchange, solidarity and flexibility.

Objective 2: Operationalisation (including acquisition and purification) of the model constructs: Most of the measures of the research constructs were identified through an extensive review/study of the literature (see Part B). The final choice of measures was influenced by two interviews with expert informants. A pre-test study was conducted in order to verify the validity of all the measures (see Chapter C3). Similarly item-to-total and internal consistency reliability was also assessed at this stage. Hence a thorough pre-test was carried out to confirm the appropriateness of the operationalised measures before proceeding with the final data collection and analysis.

Objective 3: Analysing the acquired data by using suitable analytical tools: Following a telephone survey, sufficient data were gathered to facilitate the testing of the proposed and competing models using advanced multivariate techniques (see Part D) and in particular partial least squares regression (see Part D) using PLSGraph software. This software was used for testing for second-order structures (see Part D), overall proposed model structure and hypothesised causal pathways (see Part D).

Thorough examination of the model results included a test for multicollinearity in respect of formative latent variables, i.e., uncertainty and adaptation, and were found to be well within the accepted benchmarks. The next stage consisted of an investigation into the accuracy of the reflective latent variables. This specifically involved the testing the reliability of the measures. It was found that acceptable Cronbach α values and item to total correlations existed and it was not necessary to amend the scales.

PLSGraph was used to carry out validity tests on the constructs. The convergent validity of the constructs was tested by examining results for the Average Variance Extracted (AVE) and Cross Loadings. The stability of the constructs was confirmed in every case. Discriminant validity was also tested and found to be at acceptable levels.

The next stage in the analysis involved testing the stability of the higher order structures. It was found that the pathways linking the first order latent variables of information exchange, solidarity and flexibility to the hypothesised higher order construct of relational norms were significant. Additionally, the pathways linking the first order latent variables of human and technological

adaptation with the hypothesised higher order construct of adaptation were also found to be significant.

The results of the Research Model as well as the two Competing Models are set out below.

Objective 4: Putting forward theoretical and managerial suggestions based on the empirical results.

This is discussed in Sections E1.3 and E1.4.

E1.3 DISCUSSION OF THE FINDINGS

The results relating to the Research Model and to the two Competing Models, and the hypotheses contained therein are debated in this Section. However, before discussion can commence a decision must be taken regarding whether the research model or either of the competing models should be adopted. Examination of the explanatory powers (i.e., R^2) indicates that there are some difference depending on the aggregation of adaptation. In an aggregated form, adaptation has an R^2 of 0.435. When technological and human adaptation are allowed to act independently (i.e., in the two competing models) there is a broad equivalence in the reported R^2 between the two competing models for both these constructs, but the results are lower than for adaptation in an aggregated form. However, the difference in the R^2 between adaptation in an aggregated (at 0.435) and disaggregated (ranging from 0.362 and 0.470) is not particularly large.

In terms of the functional relationships, there is strong convergence between the research model and the first competing model. In the case of all of the functional relationships the results are the same in terms of significant or non-significant relationships being reported between relational norms, opportunism and the interaction of relational norms with both uncertainty and opportunism on both adaptation (as in the research model) and on technological and human adaptation (as in the first competing model). The only case of divergence is in respect of uncertainty where a significant pathway is reported only in the case of the relationship between uncertainty and technological adaptation.

When the first and second competing models are compared there is some convergence, as in the case of the results for opportunism and uncertainty on technological and human adaptation being the same, but there is considerable divergence when the construct of relational norms is disaggregated and the effects of the individual norms are reported.

There is considerable merit in adopting any of the three models. The research model and the first

competing model both possess considerable explanatory powers and offer parsimony and can be considered as being appropriate for theory development.

However, the second competing model offers greater insight into the relative behaviour of the different types of relational norms that are examined in this study on the two types of adaptation contained in the second competing model. Given that there is very little existing research on the effects of individual norms, and an almost complete absence of research in the context of adaptation investments, there is merit in adopting the second model. This decision is reinforced by the insights gained by examining the results of the effects of the individual norms.

Table E1.1: PLS Solution for Competing Model Two

Structural Pathways		Regression Coefficient and T statistics	Significance
Information Exchange →	AdapTec	(1.67) *	✓
Information Exchange →	AdapHum		NS
Solidarity →	AdapTec	(3.28) ***	✓
Solidarity →	AdapHum	(1.74) *	✓
Flexibility →	AdapTec		NS
Flexibility →	AdapHum		NS
Opportunism →	AdapTec	(4.40) ***	✓
Opportunism →	AdapHum	(3.05) **	✓
Uncertainty →	AdapTec	(2.31) *	✓
Uncertainty →	AdapHum		NS
Opport_Info Exch →	AdapTec	(3.21) ***	✓
Opport_Info Exch →	AdapHum	(1.72) *	✓
Opport_Solid →	AdapTec	(3.15) ***	✓
Opport_Solid →	AdapHum		NS
Opport_Flexib →	AdapTec		NS
Opport_Flexib →	AdapHum		NS
Uncert_Info Exch →	AdapHum		NS
Uncert_Info Exch →	AdapTec		NS
Uncert_Solid →	AdapHum	(2.43) **	✓
Uncert_Solid →	AdapTec	(1.65) *	✓
Uncert_Flex →	AdapHum		NS
Uncert_Flex →	AdapTec		NS

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ✓ - Significant; NS - Not significant

The results of the second competing model show that when the relational norm high order construct

is disaggregated into the constituent norms, significant effects were reported. In particular, the role of the norm of solidarity, and to a lesser extent the norm of information exchange has theoretical implications worthy of closer examination. Additionally, the findings of the second competing model have implications for management practice. Consequently, given the overall orientation of the study (i.e., to contribute to both theory and practice) it has been decided to adopt the second competing model. Table E1.1 provides a summary of the final solution. The table is organised according to the hypotheses and sets out the result.

E1.3.1 The norm of information exchange → Adaptation

Extending the hypothesis in the research model, a positive relationship between the relational norm of information and both technological and human adaptation is hypothesised. Examination of the result shows that a significant relationship is only found in the case of technological adaptation. This finding is broadly in line with the findings of Metcalf, Frear and Krishnan (1992) who reported a significant, positive association between information exchange and adaptation by buyers and sellers within business relationships. However, the differential behaviour of the adaptation components provides evidence of the relevance of disaggregating it and justifies its inclusion in this study. As already stated in Section C1.2 this is the first study that has examined the effect of relational norms on human and technological adaptation so comparable literature is not available. A possible explanation for the difference in the results rests in the relative importance of investments in human and technological adaptations within the motor sector. Preliminary interviews with motor sector executives prior to the commencement of the study demonstrated that investments in technology are regarded as large items of expenditure and are typically made at the start of the production run for a new product. It was emphasized that considerable internal resources would be devoted to the process of such adaptations. On the other hand, an equal level of importance was not placed on human adaptation. This difference may be caused by the difference in the specificity of the assets. Whereas technological assets would be hard to replace human assets, particularly at a time of high unemployment, are likely to be replaceable with much less difficulty. Therefore, whilst the presence of the norm of information exchange is relevant to decisions concerning technological adaptation, the need for information is perhaps less crucial in the case of human adaptation and is regarded as less relevant. The need for additional research on this area is addressed in Section E1.4.

E1.3.2 The norm of solidarity → Adaptation

Strong support was found for the positive effect of solidarity on both technological and human adaptation. Since the relational norm of solidarity has been found to affect closeness (Kim, 2000; Dwyer and Oh, 1988), and since closeness has been linked theoretically to adaptation (Ford, 1980), it was hypothesised that the norm would have a positive effect. These findings confirm the validity of the logic and provides the first reported findings where this position is confirmed.

E1.3.3 The norm of flexibility → Adaptation

The literature review (see Chapter B2) did not identify any literature on the effect of the relational norm of flexibility on technological and human adaptation. The existing literature describes the relational norm of flexibility implies good faith modification and adaptation of the substance and terms of exchange. Wathne (2004) describes the norm of flexibility as being responsible, under relational contracting, for “the updating process” (Macneil 1980; Noordewier, John, and Nevin 1990). However, the literature suggests that flexibility relates to actions of a short-term nature whereas adaptation implies investments which are of a longer-term relevance to the relationship (Hallen, Johanson and Sayeed-Mohamed, 1991; Boyle *et al.*, 1992; Cannon Achrol Mentzer, 1995). It is therefore not completely surprising that a significant finding is not reported in this case.

E1.3.4 Opportunism → Adaptation

Although Williamson (1975, 1985, 1996) suggests that opportunism will have a negative effect on adaptation, there is a conspicuous lack of empirical evidence on this matter. Parkhe’s (1993) study is one example where support was found for the proposition that there was a significant negative relationship between perception of opportunism in the other party and decisions to invest in adaptation investments. Strong support for the hypothesised pathways between opportunism and both technological and human adaptation were found. The findings in this study are in line with the arguments put forward by Williamson (1975, 1985, 1996) and in the Parkhe (1993) study.

E1.3.5 Uncertainty → Adaptation

Extant literature has considered the effect of different types of uncertainty on adaptation (Stump and Heide, 1996; Bensaou and Anderson, 1999) but there is limited research on the effect of uncertainty on human and technological adaptation. A divergence in the results between the effects

of uncertainty on technological and human adaptation was found. Uncertainty was found to have a negative impact on technological adaptation but not on human adaptation. Extant research on the relationship between uncertainty and adaptation is very limited. Stump and Heide (1996) looked at the relationship between technological uncertainty and decisions to make credible commitments. They found a positive relationship between technological uncertainty and decisions to invest in credible commitments. Bensaou and Anderson (1999) proposed a negative relationship between technological uncertainty and adaptation investments but the empirical results found there was actually an increased level of investment in such environments. In both papers the authors suggest that the adaptation investments indicate a process of making a commitment to the relationship. However, in neither paper was the issue of making investments in technological nature specifically investigated. It is possible to identify literature where this issue has been considered. Walker and Webber (1984) and Balakrishnan and Wernerfelt (1986) considered that decisions to invest in adaptation investments are likely to be less likely since in environments characterised by technological and dynamic uncertainty, there is an increased likelihood that obsolescence may cause the asset to become less valuable or even worthless. It is possible that this argument concerning the risk of obsolescence may explain the negative finding for technological adaptation.

E1.3.6 The interaction of opportunism and information exchange → adaptation

The modelled effect of the interaction of opportunism and information exchange on both technological and human adaptation was found to be positive. This study appears to be the first which has modelled such an interaction effect. Extant research on the effect of information exchange on opportunism indicates that this norm is associated with a dampening of the effects of opportunism (John, 1984; Brown, 1981; Mohr and Nevin, 1990). However, the modeled effect of the interaction of information exchange and opportunism on human and technological adaptation does not appear to have been reported in any extant literature. The main effect of the relational norm of information exchange on human and technological adaptation was considered in Section E1.2.1 where it was reported that there was a positive, significant effect only in the case of technological adaptation. However, the reported effect of the modeled interaction of opportunism and information exchange on human and technological adaptation was positive in both cases. The finding in respect of human adaptation raises issues that need the clarification of further research. Although the direct effect of information exchange on human adaptation is not significant, when a modeled interaction of this norm and opportunism is carried out, a positive, significant effect is

reported. There is not an immediately apparent reason for this divergence and it will require the clarification can only be gained from further research before any clear conclusions can be made.

E1.3.7 The interaction of solidarity and opportunism → Technological and Human adaptation

It was reported in Section E1.2.3 that the effect of the relational norm of solidarity on both technological and human adaptation was significant and positive. However, when the modeled effect of the interaction of the norm of solidarity and opportunism was tested, there was a divergence in the results. Once again, the hypothesized positive effect was supported in the case of technological adaptation but not in the case of human adaptation. This study appears to be the first that has reported the modeled effects of the interaction of solidarity and opportunism on human and technological adaptation. Extant literature does not appear to have tested the main effect of solidarity on opportunism but the opinion of authors who have discussed the likely effect (e.g., Etzioni, 1988; Greenhalgh, 1987; Macneil, 1980; Takahashi, 2000) was in favour of the proposition that the norm of solidarity would have a dampening effect on opportunism. Equally, in the Section E1.2.3, it was shown that the existing literature indicated that the norm of solidarity was associated with a positive effect on adaptation. Accordingly, it was anticipated that there would be a positive effect for the modeled interaction in the case of both human and technological adaptation. As with the preceding reported result, additional research would appear to be necessary before any clear conclusions can be drawn for the divergence in results.

E1.3.8 The interaction of flexibility and opportunism → Technological and Human adaptation

In Section E1.2.4, it was reported that the effect of the norm of flexibility on both technological and human adaptation was not significant. Existing literature on this norm has focussed on its role in modification and adaptation of the substance and terms of agreements in the light of unforeseen and or changed circumstances that confront parties to an agreement (Boyle *et al.*, 1992; Cannon Achrol and Mentzer, 1995). It was not possible to identify any research which has empirically tested the effect of the norm of flexibility on opportunism. Since the norm of flexibility is associated with good faith change, it also implies that when some unexpected situation arises, the parties would rather work out a new deal rather than hold each other to the original terms (Heide, 1994; Ayers, 1997). This implies that the norm of flexibility is likely to have a dampening effect on the effect of

opportunism under new circumstances. However, since the norm of flexibility reflects a willingness to make adjustments to existing arrangements rather than decisions to make adaptation investments (Hallen *et al.*, 1991) it is not surprising that a significant positive effect was reported when the modelled effect was tested.

E1.3.9 The interaction of uncertainty and the relational norm of information exchange → Technological and Human adaptation

The modeled interaction of uncertainty and the norm of information exchange on human and technological adaptation did not produce significant results. Specific investigations into the effect on adaptation of controlling the negative effects of uncertainty by means of the norm of information exchange are lacking. In Section 1.2.1, it was reported that the norm of information was associated with a significant positive effect on human and technological adaptation. Existing literature on the effect of information exchange on uncertainty reports that the norms increases collaborative behaviour within relationships which will dampen the effects of uncertainty (Joshi and Campbell, 1999). Jap (1999) found that more collaborative relationships led to more adaptation occurring within relationships. Accordingly, there are arguments grounded in the extant literature for believing that the result of the modelled interaction of information exchange and uncertainty on technological and human adaptation would be positive. One possible explanation for the reported findings of this interaction effect in this study may be based on situational factors. Preliminary interviews indicated that uncertainty was not considered to have a strong effect within the subject marketing relationships. It may be that because uncertainty was not regarded as a major concern, an increase in information exchange would not, of itself lead to enhanced adaptation.

E1.3.10 The interaction of solidarity and uncertainty → Technological and Human adaptation

The modeled interaction of the norm of solidarity and uncertainty on human and technological adaptation produced a significant effect in both cases. In Section 1.2.2 it was reported that the main effect of the norm of solidarity on human and technological adaptation was significant in both cases. Therefore, in view of the arguments set out in the previous paragraphs suggesting that the norm of solidarity is likely to dampen the effects of uncertainty, and in the light of the positive findings linking this norm with human and technological adaptation, reported in Section 1.2.2, the findings which showed a significant effect from the modeled interaction of solidarity and

uncertainty on human and technological adaptation is in line with expectations based on the existing literature.

E1.3.11 The interaction of flexibility and uncertainty → Technological and Human adaptation

The reported findings on the modelled interaction effect of the norm of flexibility and uncertainty on adaptation investments were not significant. The reported findings for the interaction of the norm of flexibility and uncertainty on adaptation is in line with the other decisions. Once again significant results were not reported where the effect of the norm of flexibility were examined. This is in line with other findings in this study and with the expectations raised by an examination of the literature.

In Chapter B1.3, it was shown that the process of adaptation is vulnerable to the risk of opportunism occurring, according to Williamson (1975), unless appropriate governance structures are in place.

Research into the main effects of opportunism on adaptation in general and on the effects of opportunism on adaptation investments in particular are lacking.

E1.4 CONTRIBUTIONS OF RESEARCH

This investigation represents the first documented study of adaptation investment. Consequently, the findings represent a new insight into the subject matter and advance related theory in the following ways:

- The conceptualisation of adaptation as a formative higher order construct, comprising technological and human adaptation is analytically confirmed and challenges unidimensional conceptualisations of adaptation investments. The findings show a divergence in the reported effects on technological and human adaptation. The differential effect between the two components of adaptation implies that research should examine the nomological structures of technological and human adaptation separately rather than as a composite construct.
- The findings confirm the negative, hypothesised effect of opportunism on adaptation investments. Prior research on this point was extremely limited and the findings of this study represent empirical confirmation of previously held assumptions

- The study provides insight into the effect of the norm of information exchange. This study appears to be the first that has specifically examined the effect of the interaction of this norm with opportunism on adaptation investment (both technological and human). The study found a positive, significant result. When the main effects of the norm of information exchange was examined in relation to adaptation investments there was a divergence in the results. Although, a positive, significant result was found in the case of technological adaptation, this was not the case for human adaptation. It is suggested that such differences are due to specificities in the research domain and suggests that further research is needed to account for the differences in domain specific characteristics.
- This study also considered the effect of the relational norm of solidarity in a novel way. It provides strong empirical support for the positive effect of solidarity on both technological and human adaptation investments.. When the norm of solidarity interacts with uncertainty it was shown to have a positive effect on both forms of adaptation investment. Of the three forms of relational norms investigated in this study: information exchange, solidarity and flexibility, only in the case of solidarity was a positive and significant result found. This suggests that the norm of solidarity has a particular importance in situations of uncertainty (and, in the context of investments for both technological and human adaptation) which is not seen in the case of the other two norms. This is the first reported finding of such linkages and represents an important contribution to understanding the role of the solidarity
- The modelled interaction of the norm of information exchange and opportunism on technological and human adaptation was found to be significant in both cases. This provides an important insight into the effect of the norm of information exchange as a form of governance. This arises because the reported findings demonstrated that the negative effects of opportunism could be controlled as well as producing a positive effect on adaptation. This finding is apparently the first where such findings have been reported.
- The norm of flexibility was investigated in six specific hypotheses and did not produce a significant result in any case. The results do reinforce the belief reported in the literature that there is a divergence between flexibility as a construct from adaptation as a construct. The literature (see Chapter B2) suggest that flexibility is linked with changes of a minor nature rather than of the more important kind associated associated with adaptation investments.
- A theoretically grounded model that looks at adaptation through the framework of transaction cost analysis which conceptualises that effect of relational norms as a

governance structure which examines the main effects of relational norms on adaptation, uncertainty and opportunism. This research appears to be the first which has tested the role of hybrid governance in the form of relational norms in the governance of adaptation. In Chapter B2 it was shown that Williamson (1991a) doubted that such a governance structure was capable of managing adaptation effectively. The reported findings in this study represent a first attempt at demonstrating that norms do have an effective role to play in governance. The model tests the main effects of both uncertainty and opportunism on adaptation.

- It is the first study which has been applied to both transaction cost analysis and to research on relational norms that has used PLSGraph.

E1.5 MANAGERIAL GUIDELINES

The managerial implications associated with the findings reported here are discussed below.

- Since adaptation has been shown to be something of central importance to organisations, any increase in our knowledge about it is potentially of benefit to managers.
- Existing transaction cost analysis theory suggested that there were limitations to the capacity of hybrid governance to manage adaptation. This study provides evidence that relational norms can provide a suitable governance structure for managing adaptation.
- The effects of both opportunism and uncertainty need to be managed if adaptation is to be successfully achieved according to the logic of transaction cost analysis. The main effects of opportunism were shown to be significant and this implies that management needs to have governance structures in place to safeguard against the risks of maladaptation. The effects of uncertainty in this study are harder to interpret. Since the findings did not support the hypothesised linkages it is not possible to advance unambiguous management recommendations.
- The key managerial insight is to be gained from applying the theoretical insights from this study to practical managerial situations. The most important insights relate to the role that relational norms can play within relationships. The first insight relates to the role of information exchange and its capacity to control the effects of opportunism whilst also influencing adaptation investments. This necessitates the adoption of strategies that enhance the norm of information exchange within relationships. Existing research on the development of norms within relationships (Dwyer *et al.*, 1987) suggests that this

necessitates action over a continuous period of time in which interaction between both parties is increased. This can be developed by adopting measures, both formal and informal, which will increase the amount of contact between the parties and, most importantly, increase the volume of information exchanged between the parties. The second important insight is to recognise the role of the norm of solidarity in controlling the effects of uncertainty whilst enhancing adaptation investment. In order to enhance the role of the solidarity norm within the relationship, it necessitates the development of this norm. Since the norm of solidarity implies a level of closeness between the parties (Cannon, Achrol and Mentzer, 1995), it also necessitates the adoption of a management strategy aimed at enhancing close relationships with exchange partners. The development of both of the norms of solidarity and information exchange is something can be developed in tandem.

- As a starting point, the development of these norms should commence with an examination of the state of the current relationship between the parties. The extent and nature of existing points and levels of contact need to be examined. Once this process has been undertaken, it is necessary to evaluate where improvements may need to be made. These improvements can come in the form of establishing set routines, such as monthly meetings, the provisions of periodic reports, periodic social gathering and similar measure designed to create opportunities for the norms to be developed further.
- Existing research on the norm of information exchange provides some guidance on the circumstances in which the norm is present at an enhanced level which can provide some form of benchmark against which the quality of the existing relationship can be measured. In Chapter B2 it was shown that common characteristics of such behaviours such as willingness to share information frequently and informally (Heide and John, 1992), the provision of information that may affect the exchange partner (Lusch and Brown, 1996).
- Existing research on the norm of solidarity also provides some guidance on the characteristics of this norm when it is present at an enhanced level within relationships. The norm of solidarity is seen in behaviours which demonstrate that the parties are committed to the long term success of the relationship (Heide and John, 1992). Since it is shown in this study that it associated with controlling opportunism in the management of adaptation investments, certain types of behaviour need to be prevalent. One common understanding between the parties is that one party will not take advantage of a strong bargaining position (Cannon, Achrol and Gung, 2000). Additionally, the parties are committed to

improvements that may benefit the relationship as a whole, and not only the individual parties (Rokkan *et al.* 2003).

E1.6 SUGGESTIONS FOR FUTURE RESEARCH

Although the proposed research has made a number of contributions (see Section E1.4), further research is needed in order to further enhance our understanding of the subject matter. Some of the more urgent research needs are listed below.

- Analysis based not only on the perceptions of one side of the dyad but on the simultaneous views of both suppliers and customers will shed greater light on the behaviour and strength of the proposed structural pathways.
- A longitudinal study that affords a dynamic treatment of time should be undertaken to better comprehend the depth and scale of the temporal influences of the related constructs.
- The study took place in the context of the UK automotive sector. Some of the findings suggest a situational influence. It is necessary to attempt additional studies not only in other industrial contexts but also in non-industrial contexts in order to test the generalisability of this study's findings.
- The role of the norms of information exchange and solidarity was shown to have a significant effect. Additional research needs to focus on examining its effects in other contexts. Given that the findings reported in this study represent a first step in developing a greater understanding of the role played by these norms, additional research should be undertaken as soon as possible.
- The differential effect of the findings for human and technological adaptation suggests that the disaggregation of this construct was a strategy worth adopting. However, the reported findings are unclear in their meaning. In particular although there is a suspicion that situational factors may have influenced the findings this is far from clear and calls out for additional research to be undertaken
- A more varied research sample, designed to include small and medium companies as well as large ones, and different competitive environments, will offer results that are more easily generalisable.
- The usefulness/practicality of the proposed managerial contributions (guidelines) should be

tested through a case study approach. Such a methodology will offer additional evidence as to the stability and relevance of the results on which these implications are based.

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APPENDICES

APPENDIX: SURVEY INSTRUMENT

Kingston University London
Faculty of Business

Survey on the UK Car Components Sector

BACKGROUND TO THE SURVEY.

This survey into the UK Motor Sector that has been organised by Kingston University Business School.

The purpose of the survey is to investigate business relationships between UK Car Component Manufacturers and their Suppliers.

The survey should take about ten minutes of your time.

A report on the findings of this research project will be produced and will be made available to anyone who participates in this survey. At the end of the survey you will be advised on how a copy can be obtained.

Kingston University guarantees the confidentiality of this survey. No details will be provided to any third party and no data will be used for anything other than purely academic purposes. A website has been created to assist participants in this survey; some additional information can be found at the following website:

[Car Survey Website](#)

CONTACT DETAILS

If anything about this survey is unclear or if you require any additional information, please contact the researcher:

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The research is being carried out under the supervision of Professor Stavros Kalafatis. His contact details are:

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Thank you for assisting us with this research.

Section One: Background Information

1) Which of the following types of manufacturer best describes your firm?

- Manufacturers of car components relating to car powertrain systems
- Manufacturers of car components relating to car climate control systems
- Manufacturers of car components relating to car body parts
- Manufacturers of car components relating to car electrical systems
- Manufacturers of car components relating to other aspects of the car not set out above

2) How many employees does your firm have?

- Less than 25
- 26 - 50
- 51 - 250
- 251 - 500
- More than 501

When you answer the questions in the rest of the survey please relate them to the company that you regard as your main customer that you are knowledgeable about. In the survey, this company will be referred to as "your main customer"

3) How many employees does your main customer have?

- Less than 25
- 26 - 50

- 51 - 250
- 251 - 500
- More than 501

4) What percentage of your total annual sales is accounted for by your main customer?

- Less than 5%
- Between 6% and 10%
- Between 11% and 20%
- Between 21% and 50%
- More than 50%

5) For how many years has your firm sold items to your main customer?

- Less than 6 months
- 6 months - 12 months
- 1 year - 3 years
- 3 years - 5 years
- More than 5 years

6) How many years have you been worked in a sales capacity in the motor components sector?

- Less than two years
- More than two years

7) In dealing with this customer, which of the following descriptions best describes your role in negotiations?

- Lead negotiator
- A major participant in negotiations
- A support role
- An administrative or clerical role
- Account manager

Section Two

This section of the questionnaire asks you to consider the effect of uncertainty on the business relationship between your firm and your main customer

8) How much do you agree with the following statements?

	Strongly Agree 1	2	3	4	5	6	Strongly Disagree 7
Changes in the specifications of the product we sell to our main customer are very predictable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technological improvements to the product we sell to our customer are very predictable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9) When you consider the marketplace for the product you sell to your main customer, how much do you agree with the following statements?

	Strongly Agree 1	2	3	4	5	6	Strongly Disagree 7
The market is highly volatile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is difficult for us to estimate the expected sales volume for the product we sell to this customer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

It is difficult for us to predict our price for this product

It is difficult for us to predict changes in specifications and features to the products we sell



Section Three

This section of the questionnaire asks you to consider the effect of certain types of behaviour on the business relationship between your firm and your main customer

10) How much do you agree with the following statements?

	1	2	3	4	5
Our main customer sometimes modifies the facts or withholds information in order to get what they want	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our main customer sometimes promises to do things without actually doing them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our main customer sometimes does not act in accordance with our contract	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our main customer sometimes insists on compliance with the contract even if the purpose of the contract has changed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our main customer sometimes uses unexpected events to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

extract concessions
from our firm



Section Four

This section of the questionnaire asks you to consider the types of behaviour that occur within this business relationship. It includes questions on such things as the communication that occurs between the parties and the manner in which they deal with problems.

11) How much do you agree with each of the following statements about information exchange?

	Strongly Agree 1	2	3	4	5	6	Strongly Disagree 7
Exchange of information in this relationship takes place frequently and informally, and not only according to a prespecified agreement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is expected that we keep each other informed about events or changes that may affect the other party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In this relationship, it is expected that any information that might help the other party will be provided to them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is expected that the parties will provide proprietary information if it can help the other party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12) How much do you agree with each of the following statements about the sense of commitment that exists between your company and your main customer?

	Strongly Agree 1	2	3	4	5	6	Strongly Disagree 7
Problems that arise in the course of this relationship are treated by the parties as joint rather than individual responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The parties are committed to improvements that will benefit the relationship as a whole, and not only the individual parties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The parties in this relationship do not mind owing each other favours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A high sense of unity exists between the parties in this relationship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13) How much you agree with each of the following statements about the effects of changing conditions on the business relationship you have with your main customer?

	Strongly Agree 1	2	3	4	5	6	Strongly Disagree 7
Flexibility in response to requests for changes is a characteristic of this relationship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The parties expect to be able to make adjustments in the ongoing relationship to cope with changing circumstances.

When some unexpected situation arises, the parties would rather work out a new deal than hold each other to the original terms.



Section Five

In this section you are asked to consider the types of adaptation that have occurred in this relationship



14) How much do you agree with each of the following statements about your main customer?

	Strongly Agree 1	2	3	4	5	6	Strongly Disagree 7
In response to their needs, we have made a substantial investment in personnel specifically dealing with our main customer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In response to their requests for assistance, we have dedicated some of our staff in training our main customer to use our products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of the training that our staff have undertaken as a result of our main customer's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

requirements cannot be easily adapted for use with another customer

Our main customer has some unusual technological standards that have required extensive adaptation by us



In response to their needs, we have made significant investments in tooling and equipment dedicated to our relationship with our main customer



Following requests from our main customer, we have modified our production system to meet their requirements



15) If you would like to receive a report on the findings of this research, please provide us with your contact details below

Name

Title

Company Name

Email Address



Thank you your co-operation in answering this survey. We would like to remind you that all of the data compiled by Kingston University remains confidential.

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