CORPORATE INTEGRATION, COMPETITIVENESS AND FINANCIAL PERFORMANCE: SUPPLIERS' PERSPECTIVE

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2009

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Dissertation submitted to the
Institute for Graduate Studies in the Social Sciences
in partial fulfillment of the requirements for the degree of

Ph. D
in
Business Administration

by
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Boğaziçi University
2009

Thesis Abstract

Deniz Parlak, “Corporate Integration, Competitiveness and Financial Performance: Suppliers’ Perspective”

The purpose of this study is to examine the nature and the consequences of the relationship between suppliers and their industrial buyers and to search for the effect of different types of relationships on supplier’s financial performance.

Though conventional arm’s length relations and integrated ties are viewed as the two ends of the spectrum, each has its own benefits and costs. In this study, it is hypothesized that in contrast to arm’s length relationships, integrated relations have some unique characteristics that make them more innovative and more competitive, but given the costs and benefits of each type of relationship, to maximize the financial performance, the most efficient strategy for suppliers is to follow not a single but a portfolio of customer relationships characterized by different degrees of involvement.

The hypotheses are tested on a sample of 106 firms supplying to automotive, electronics, white goods and construction industries. The findings support a two way relationship among four out of the five integration intensity factors, namely cooperation, trust, communication and joint conflict resolution, and three out of the four relational outcome variables which are product quality, process flexibility and cost leadership. Innovativeness is found to be an important mediating variable. Financial ratio analysis shows that despite the positive association between integration intensity and relational outcome measures, the financial return is maximized when suppliers follow not a single relationship but a portfolio of relationships strategy.

Tez Özeti

Deniz Parlak, "Yan Sanayi Perspektifinden Ana Sanayi ile Entegrasyonunun Rekabet Gücü ve Finansal Performansa Etkileri "

Bu çalışmanın amacı yan sanayi ile ana sanayi arasındaki ilişkinin niteliğini, sonuçlarını ve söz konusu ilişkinin yan sanayinin finansal performansı üzerine etkilerini incelemektir.

Her ne kadar piyasa bazli ve entegre ilişkiler iki ayrı kutup olarak kabul edilse de, her birinin kendine özgü bir takım fayda ve maliyetleri bulunmaktadır. Bu çalışmanın temel hipotezi piyasa bazlı ilişkilerin aksine, entegre ilişkilerin yaratıcılık vasıtası ile rekabet gücünü arttırıcı rol oynadığı ancak buna rağmen tedarikçiler açısından finansal anlamda en etkin stratejinin fayda ve maliyetler gözönüne alındığında, müşteri ilişkilerini çeşitlendirmek olması gerektiğini öne sürmektedir.

Sözü edilen hipotezler, otomotiv, elektronik, beyaz eşya ve inşaat sektörlerine tedarik sağlayan 106 firma üzerinde sınanmıştır. Bulgular entegre ilişkileri belirleyen karşılıklı işbirliği, güven, bilgi alışverişi ve ortak problem çözme faktörleri ile rekabet gücünü belirleyen ürün kalitesi, üretim süreci esnekliği ve maliyet avantajı değişkenleri arasında doğru yönlü bir ilişki olduğu göstermektedir. Ayrıca yaratıcılık faktörünün bu ilişkileri etkileyen önemli bir aracı değişken olduğu görülmektedir. Finansal rasyo analizi, tedarikçiler açısından, entegrasyon ilişkisini belirleyen faktörler ile rekabet gücünü etkileyen ilişkisel değişkenler arasındaki doğru yönlü ilişkinin finansal performansı arttırmasının ancak entegre ilişkilerin yanına piyasa bazlı başka ilişkilerin de eklenmesi ile mümkün olabileceğini göstermektedir.

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ACKNOWLEDGEMENTS

I would like to thank Boğaziçi University Research Fund Commitee for the financial support.

I would also like to thank to Professor Mine Uğurlu for her extensive support and valuable comments.

DEDICATION

I dedicate this study to my husband Ümit Parlak for his extensive support and patience.

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CHAPTER 1: INTRODUCTION

The relations between suppliers and industrial buyers have been an important concern for the researchers throughout the last century.

In the nineteenth century, most company owners instead of working with professional managers, preferred to work with independent entrepreneurs. Each department of the manufacturing plants was outsourced to different entrepreneurs who employed their own workers (MacMillan & Farmer, 1979). In the nineteenth and in the first half of twentieth century, the stream of thought that dominated industrial life was the neoclassical theory based on the price mechanism. Neoclassical economic theory sustained that the economic system worked itself and needed no central control or survey. Over the whole range of human activity, supply is adjusted to demand and production to consumption by a process that is automatic, elastic and responsive (Plant, 1932). The relationships are of pure arm's length type and firms are islands of planned coordination in a sea of market relations.

After the middle of the twentieth century however, conditions started to change. When the management of information became the main concern of managers, the internalization of activities seemed to be more beneficial. It was the era of vertical integration which became much more prevalent in industries with deep and specialized industrial know-how. Hierarchies appeared as a new mode of governance where the main concern was the extent of expansion of the firms. In this context, the stream of thought evolved around two theories; transaction cost theory and agency theory. Both theories had their basis on incomplete contracting, bounded rationality and opportunism. Transaction cost theory supported that the make or buy decision or the governance through markets or hierarchies was an outcome of transaction costs of which the main determinants were asset specificity and the length and frequency of disturbances defined as uncertainty (Williamson, 1975, 1982 and 1998). Agency theory, on the other hand, argued that make or buy decision or governance through behavior based or outcome based contracts, was a function of agency costs where the main variables were information systems and uncertainty defined as risk sharing (Eisenhart, 1989).

The last quarter of twentieth century marked a new turning point in industrial organization. The development in information technologies led to the fast accumulation and transfer of tacit knowledge which shortened product life cycle and eroded the information advantage of integrated structures. As a result, industrial structure moved from a transactional way of operating to relational exchanges. Instead of integrating vertically, core firms started to focus on their main activities and strengthened their relations with suppliers. They narrowed their supply base, made longer arrangements with suppliers, demanded more technological contribution from them and started to employ just in time delivery processes to cut costs and to speed adaptation. The new industrial structure which had its basis neither on transactions nor on contracts but on relationships was accepted as a new way of coordinating economic activity. The networks were found to be economically more efficient and effective than other forms of governance in coping with environments requiring fast access to information, flexibility and responsiveness to changes when the involving parties were dependent on the resources of each other, share risks and gains fairly and solve problems jointly. Strategic considerations like accessing critical resources or obtaining the crucial skills outweighed the simple concern for cost minimization (Thorelli, 1986; Jarillo, 1988; Powell, 1990)

A mode of governance, to be viable economically, must be effective and efficient (Jarillo, 1988). The basic condition for efficiency and effectiveness is that the gains to be accrued by employing one mode of operation should be greater than the profits to be obtained by selecting the other. Looking from this perspective, leaving out the hierarchies which are proven to be inefficient and ineffective, arm's length relations and integrated ties are the two ends of the spectrum with their own gains and costs. Under the assumptions of bounded rationality and opportunism, given the costs of negotiating and contracting, autonomous contracting is efficient only in the case of full competition where transactions are extremely monetized and disputes are settled legally (Williamson, 1975). Networks on the other hand, create an incentive for learning and dissemination of information, offer a highly feasible means of utilizing intangible assets like tacit knowledge and technological innovation, but given the high costs of formation and maintenance, are useful only when the resources are variable and specific and the environment is uncertain (Powell, 1990). Given these costs and benefits, the most efficient strategy for suppliers is to follow not a single but a portfolio of customer relationships characterized by different degrees of involvement. (Gadde & Snehota, 2000).

The purpose of this study is twofold: first, it aims to examine the nature and the consequences of the relationship between suppliers and the industrial buyers and second, it aims to find the association of these relationships with suppliers' financial performance.

The study is based on the premise that the integrated types of relationships have some unique characteristics that discriminate them from traditional business relationships. The strength of these unique features determines the intensity of the relationship and creates some relational outcomes that are measured through improved quality, delivery reliability, increased flexibility and cost leadership. Innovativeness however is an important attribute for the firms as it affects both the intensity of the relationship and the magnitude of the relational outcomes achieved. Furthermore, innovativeness, together with competitive advantages gained through improved relational outcomes, leads to new customers, so to new integrated relationships through the reputation effect. All these positive effects of integrated relationships however, are reversed after a certain threshold. Given the costs and benefits of different types of customer relationships, the financial performance is maximized when the firm pursues a portfolio of relationships approach.

The premises of the study are tested on a sample of 106 firms supplying to the automotive, electronics, white goods and construction industries. The findings support the hypotheses that though integrated relationships are beneficial as they create competitive advantage, the positive effect are reversed after a certain point, so the portfolio of relationships approach is the best strategy for the suppliers to improve financial performance.

The rest of the study is organized as follows: In Chapter Two, the theoretical and empirical literature is summarized. Chapter Three includes the model and hypotheses. In Chapter Four the variables are defined. In Chapter Five the data and sampling methods are presented. Chapter Six documents the data analysis and findings; and finally Chapter Seven concludes the discussion.

CHAPTER 2: LITERATURE SURVEY

Theoretical Background

The stream of thought on supplier-buyer relations is quite old and rich. It was firstly studied by neoclassical economic theory and then by transaction cost, agency and network theories.

Neoclassical Theory

Neoclassical economics refers to a general approach in economics focusing on the determination of prices, outputs, and income distributions in markets through supply and demand. It has three main assumptions:

- People have rational preferences among outcomes that can be identified and associated with a value.
- Individuals maximize utility and firms maximize profits.
- People act independently on the basis of full and relevant information

Supply and demand describes market relations between prospective sellers and buyers of a good. The supply and demand model determines the price and quantity sold in the market. The model is fundamental in the microeconomic analysis of buyers and sellers and of their interactions in a market. The model predicts that in a competitive market, price will function to equalize the quantity demanded by consumers and the quantity supplied by producers, resulting in an economic equilibrium of price and quantity (Pindyck & Rubinfield 2001, pg. 369-423).

Neoclassical economists believe that the economic system works itself and needs no central control or survey. Over the whole range of human activity, supply is adjusted to demand and production to consumption by a process that is automatic, elastic and responsive (Plant, 1932). As a result, the direction of sources is dependent directly on the price mechanism; relations are purely impersonal and of arm's length type.

Neoclassical economics is heavily criticized for having a normative bias. According to this view, it does not focus on explaining actual events, but instead on describing a utopia in which Pareto optimality applies. The assumption that individuals act rationally may be viewed as ignoring important aspects of human behavior and seemingly the presence of pure competition and perfect markets is far from the reality.

Markets and Hierarchies as Alternative Modes of Governance

Coase (1937) questioned why organizations exist and why the amount of vertical integration which is the suppression of the price mechanism varies greatly from industry to industry and from firm to firm. According to him, the answer lies in the presence of costs of using the price mechanism. The cost of negotiating and concluding a separate contract for each exchange transaction which takes place on a market must be taken into account and it may be better to make longer term contracts instead of several shorter ones to avoid certain costs of making each contract. A firm therefore, consists of a system of relationships which come into existence when the direction of resources is dependent on an entrepreneur. A firm will tend to expand until the costs of organizing an extra transaction within the firm is equal to the costs of carrying out the same transaction by means of an exchange in the open market or the costs of organizing in another firm.

After Coase (1937), academic literature focused on markets and hierarchies as alternative modes of governance. The main concern was to define the limits of expansion of the firm or simply put “make or buy” decision. Two important streams of thought on the subject are transaction cost theory and agency theory.

Transaction Cost Theory

Coase’s (1937) argument was elaborated and expanded by Williamson (1975). Williamson (1975) claimed that not commodities but transactions are the unit of analysis and governance structures must be assessed properly to economize on transaction costs. A transaction occurs when a good or service is transferred across a technologically separable interface. There exist three forms of governance mechanisms; markets, hierarchies and hybrid forms; due to differences in contractual arrangements, the three forms of organizations may not replicate each other.

Williamson (1975, 1981 and 1998) replaced the rationality assumption of neoclassical economy with bounded rationality and opportunism to expand the discussion of organizational forms. Bounded rationality refers to the organization man who is neither hyper-rational nor irrational. He is endowed with less powerful analytical and data-processing apparatus than the economic man but he is still “intendedly rational”. However this bounded rationality requires that all economic exchanges be organized by contracts. Still, the contracts are incomplete and do not work properly as human agents are given to opportunism. Moreover, it is very costly to distinguish opportunistic from non opportunistic behavior ex ante. Under the assumptions of bounded rationality and opportunism, autonomous contracting will be efficacious only when there exist ex ante and ex post competition or more precisely when there are a large number of qualified bidders at the outset. In this case the most efficacious governance mechanism is market form and the classical way of contracting is efficient as the transactions are extremely monetized and disputes are settled legally.

Long term incomplete contracts require social adaptive mechanisms to effect realignment and restore efficiency when beset by unanticipated disturbances. The forum to which neo-classical contracts refer disputes is arbitration rather than courts. However arbitration is costly and when disturbances are highly consequential, neoclassical contracts experience real strain. The implicit contract law for the hierarchy is forbearance. Parties must resolve their differences internally and the hierarchy is the court itself (Williamson 1975, 1981 and 1998).

The critical dimensions for describing transactions are asset specificity, uncertainty and the frequency with which transactions occur.

Asset specificity may take various forms like site specificity, physical asset specificity, human asset specificity, brand name capital, dedicated assets and temporal specificity. Whatever the form of the asset specificity, the consequence is common; a condition of bilateral dependency builds up as asset specificity deepens. In case of high asset specificity, disturbances for which coordinated responses are required become more numerous and consequential and markets impede adaptability. Although the transfer of transactions from market to hierarchy increases bureaucratic costs, these costs are more than offset by bilateral adaptive gains (Williamson 1975, 1981 and 1998).

Uncertainty refers to disturbances and it may take two forms; either the disturbances become more numerous or more consequential. Adaptability refers to problems arising as a consequence of change. For some disturbances, prices serve as sufficient statistics; in this case neoclassical adaptation is sufficient. Some disturbances however require coordinated responses. In such situations, bilateral dependency requires gap-filling and sometimes parties get out of alignment which results in costly bargaining. These disturbances can be resolved more effectively not within a market but within a hierarchy (Williamson 1975, 1981 and 1998).

Agency Theory

The firm is a nexus of contracts, so the unit of analysis is the contract governing the relationship between the principal and the agent (Fama, 1980). Consequently the focus of the agency theory is determining the most efficient contract governing principal-agent relationship given the assumptions about people (self-interest, given to opportunism and risk aversion), organizations (goal conflict among members) and information (information is a commodity that can be purchased) (Eisenhardt, 1989). The agency problem arises when the desires and goals of the principal and agent conflict and it is difficult for the principal to follow what the agent is actually doing when principal and agent have different risk sharing attitudes. The agency theory is applicable to different organizational phenomena including vertical integration and diversification strategies. Like transaction cost theory it has its basis in incomplete contracting but the main issue is to align the agent and principal's interests under uncertainty, information asymmetry, moral hazard and adverse selection. Moral hazard refers to lack of effort on the part of the agent and adverse selection to misrepresentation of ability by the agent. This simply means that the agent may either shirk or claim to have certain unverifiable skills and abilities. In this case the principal may either employ behavior based contracts by investing in information systems or employ outcome based contracts but at the price of transferring risk to the agent. The outcome based contracts correspond to markets and behavior based contracts to hierarchies or hybrids in transaction cost theory language. However, the main contribution of the agency theory is information; it is redefined as a commodity which has a cost and which can be purchased. A second difference lies in uncertainty. In agency literature, the future and so the outcome are uncertain and risky. Consequently, outcome uncertainty coupled with differences in willingness to accept risk influences the contracts between principal and the agent (Eisenhardt, 1989).

In summary the transaction cost theory supports that the make or buy decision or the governance through markets or hierarchies is an outcome of transaction costs and the main determinants are asset specificity and the length and frequency of disturbances defined as uncertainty. The agency theory, on the other hand, supports that make or buy decision or governance through behavior based or outcome based contracts, is a function of agency costs where the main variables are information systems and uncertainty defined as risk sharing.

Network Theory

Both the neoclassical view that considers firms to be a “black box” production function and its extensions which consider firms as separate from markets or broadly from the outside environment neglect the presence of widespread interactions among the firms and consequently fail to explain certain forms of exchange that are more social and less guided by formal authority (Powell 1990).

As Richardson (1972) stated, the firms are much more than islands of planned coordination in a sea of market relations. Traditional theories ignore the role of planned and spontaneous coordination and the existence of inter-firm cooperation and affiliation and do not take into consideration various stages of industrial organization like knowledge, experience and skills. The main issue should be to determine what type of coordination among firms must be secured through conscious direction and what should be left to market. The simplest form of inter-firm cooperation is trading relations which may be in form of goodwill, long term contracts or shareholding. These arrangements are held for financial yield but at the same time lend stability to relations and enable the coordinated development of products and processes. Cooperation may take various more complex forms; of which subcontracting enables a long term relation and stability as it decreases risk through specialization in skills and equipment and makes possible the joint development of products, processes and designs. Industry exists to carry out a large number of activities starting from discovery and estimation of future wants. These activities are carried out by organizations with appropriate capabilities which specialize in similar activities but also have to adapt in activities which are complementary i.e. activities that represent different phases of production and that must be coordinated. Qualitative and quantitative coordination of activities may be realized in three ways. The first is direction. In this type of coordination there is single control and a coherent plan which is coordinated and undertaken jointly by one organization which is the case of vertical integration. The second form is cooperation where two or more independent organizations match their plans in advance. The third and the last form is market transaction where decisions are taken spontaneously, successively, according to profit opportunities. The larger the organization, the greater are the number of complementary activities, so more coordination through direction is necessary; but still some coordination must be left to cooperation or to market transaction. Complex networks are necessary to coordinate closely complementary but dissimilar activities. These activities cannot be left to direction as they are dissimilar and to market as what matters is not matching demand and supply but plans of the individual enterprise both qualitatively and quantitatively. Cooperation enables the transfer, exchange and pooling of technology. The subcontractor complements his capabilities with the assistance and advice of the supplier. Technology can also be created and transferred through market transaction in the form of licenses, but still cooperation is necessary as technical assistance is crucial. In cooperation parties give some degree of assurance and obligation. At one extreme there is pure market transaction, at the other extreme complex clusters, groups and alliances and in between intermediate areas of linkage like goodwill.

In his seminal article Granovetter (1985) compares the sociological and economic view of men and shows how and why embeddedness shapes economic action. According to him, the sociological man is over-socialized and is very sensitive to the opinions of others and so is completely obedient to the norms and values dictated to him. The economic man on the other hand, is under-socialized. No producer or supplier has the power to influence supply and demand, and furthermore no bargaining, no negotiations, and no mutual adjustments are allowed. Individuals neither have social relations nor an institutional context, so the absence of trust and the presence of malfeasance do not create disorder as clever economic arrangements, though costly to write and economically dysfunctional, are effective tools to discourage opportunism. The idea of actors having social relations is a market imperfection. However, according to Granovetter (1985), both views are exaggerated. Over-socialization takes social influence as an external force and sustains that once the way an individual has been affected is known, ongoing social relations and structures are irrelevant. Under-socialization on the other hand accepts actors as behaving or deciding outside a social context. However culture is not a once-for-all influence, it is continuous and besides shaping its members, it is shaped by them. The embeddedness argument or network theory stresses the role of personal relations and networks of such relations in generating trust and discouraging malfeasance. Trust is a fruit of reputation and besides discouraging opportunism it is an effective tool in obtaining unbiased information. Neoclassical models are non existent in real life and transactions do not have a meaning unless considered with social connections. Important examples are repeat orders and the extensive use of subcontracting which presents opportunities for sustained relationships among firms that are not organized hierarchically. It is a stable and continuous relationship (quasi-firm) and is superior both to hierarchy and the market as it generates standards of expected behavior which are superior to authority relations in discouraging malfeasance and are further strengthened by the desire of the people to derive pleasure from the social interaction that accompanies their daily work. In these types of relations power and conflict are the main issues. Power is the problem solving mechanism and conflict arises only when the two sides are equal. Still, networks are more efficient than vertical integration as the latter brings into the scene efficiency problems. So transaction cost theory must consider personal relations by which economic transactions are carried out.

The preliminary works of Richardson (1972) and Granovetter (1985) gave rise to a new stream of thought which accepts the networks as a distinctive form of coordinating economic activity. (Powell, 1990). The network approach is characterized by its detailed, multidisciplinary description of the behavior of companies in a market and by its emphasis on the relations of these companies with other companies (Beije & Groenewegen, 1992). The unit of analysis is no longer commodities, transactions or contracts, but relationships.

The network, to be viable economically must be more efficient than, or at least as efficient as, other organizational forms. The basic condition for efficiency and effectiveness is that the gain to be accrued by being part of the network should be greater than the profits to be obtained by going alone in the long term. (Jarillo, 1988). There are five main factors which ensure the effectiveness and efficiency of networks.

- Resource Dependency: For a network to be efficient and effective the parties involved should be dependent on each others' resources of each other meaning that there should be mutual gains in pooling of resources (Van de Ven, 1976). In this case, strategic considerations like accessing to critical resources or obtaining crucial skills outweigh the simple concern for cost minimization. (Beije & Groenewegen, 1992) The most valuable resource is information and know-how. It is a tacit knowledge that is difficult to codify. Being a valuable intangible asset, it is highly mobile and its owners possess a skill that cannot be expropriated or controlled (Jarillo, 1988). Networks are particularly useful in cases where the flow of information is costly and essential. They provide the flow of efficient and reliable information. The information obtained through networks is thicker than that received from markets and freer than that received from hierarchies (Powell, 1990).
- Change and the demand for speed: The business environment requires fast access to information, flexibility and responsiveness to changes; networks have a comparative advantage in coping with environments where innovation is essential and product life cycle is short as they translate ideas into products quicker than other forms.

- Trust: It may defined as an assumption on the part of A that if either A or B encounters a problem, A would act as if B's resources were at his disposal (Thorelli, 1986). In case of repeat trading quality becomes more important than quantity. When there is a probability of future business, trust and reputation become essential and this makes network type organizations more reliable (Powell, 1990). Lack of trust is the main reason of transaction costs; being able to generate trust is the precondition for a network to be successful and feasible. The identity of values and motivations is an important factor in the emergence of trust. However, trustful behavior can only be generated if entrepreneurs are shown to be worse-off if they behave opportunistically. Reputation is valuable and should be protected and it is provided through long term relationships. (Jarillo, 1988)
- Sharing of risks and gains: Fairness in sharing is a precondition in network relations. Not only gains but also the variance of operations should be shared among the participants. Integrated ties by enabling reciprocity, resource sharing and joint problem solving, decrease risk. The reduction in risk leads to the realization of investments that could not be undertaken in an arm's length relationship. This is especially true for the investment on intangible assets like technology or intellectual property (Thorelli, 1986).
- Resolution of conflicts: The involved parties engage in numerous sequential transactions within the context of interaction and so sanctions

are normative rather than being legal. The networks are self-reinforcing because establishing networks requires substantial effort and cost and this constitutes a natural barrier to exit. The exit strategy implies that one of the parties chooses to substitute the other when problems arise. The voice strategy implies joint problem solving. In the case of networks, it is more efficient and economical to exercise voice rather than exit in solving the conflicts which is a source of efficiency. (Jarillo 1988, Powell, 1990; Sacchetti & Sugden, 2003). Joint problem solving enables more rapid and implicit feedback. Actors choose to stay, work through problems together and innovate; so they enrich the network with new solutions and combinations. (Uzzi, 1996).

The networks are both cooperative and competitive. The choice of partners is a temporary choice and in case of the violation of efficiency and effectiveness principles, each participant is free to apply the “market test”.

Network relations differ according to their power structure and intensity of involvement. Power is the ability to influence the decisions or actions of others. In economic terms the power is the ability of an actor to determine broad policies and objectives even in the lack of willingness and resistance from others (Sacchetti & Sudgen, 2003). A network consists of nodes and links. The nodes and links may be tight or loose depending on the quantity (number), quality (intensity) and type (closeness to the core activity of the members involved) of interactions. A node is a semi-autonomous and disaggregatable decision center which is the location of power to create networks. It depends on the domain of the company, its position in other networks and its power relative to other participants. The main sources of power are economic base (market share, size, liquidity, ability to extend credit), technology (innovation, quality, and production), expertise (know-how), trust (reputation, past performance) and legitimacy (long term contracts, arrangements). Links constitute a reflection and recognition of interdependence. We find links involving economic performance, technology transfer, diffusion of know-how and expertise, exploitation of trust and the flow of legitimacy. The mix of linkages constitutes the culture of networks. (Thorelli, 1986). Power however does not always have a negative meaning; its presence avoids potential conflicts (Jarillo, 1988).

In high involvement relationships power is distributed among participants equally. The main characteristics are cooperation, trust, reciprocity and the belief that the objectives can only be reached collectively. Organizations operate in a concentrated environment, where the other actors are treated as unique counterparts and the parties are linked in terms of resources and activities. The linkages are continuous and complex and are based on interdependencies and mutual orientation. Either party may have access to the other's resources and reciprocal knowledge or capabilities are brought together. Still the organizations keep their own identity. The integrated webs of relationships which may be complementary or competitive constitute networks. The performance is dependent not on how well the individual firm performs but on how the network performs. Moreover, the performance of a single firm is also affected by its counterparts' relations with third parties. The boundaries of the organization are not drawn only by the internal resources but by the resources and activities controlled by the firm. The network itself is a valuable resource. The micro-position is the position that the firm assumes in the network and the macro-position is the role of the organization in the network. The network position is a relative concept as each actor perceives the others differently based on past experience and present expectations. So, the effectiveness of the organization is not given by how it adapts to the environment but by how relates to the environment. This is a quasi-integration of activities. Therefore the activities taking place between the organization and other parties are the determinants of the bargaining position and the overall effectiveness of the organization. (Hakansson & Snehota, 2006; Sacchetti & Sudgen, 2003).

An important application of networks on supplier – core industry relations is the supply chain management theory. Supply chain management is a process that is used to engineer the supply system. It includes the designing, developing, optimizing and managing the components to be supplied. The main objective of supply chain management is to develop a sustainable competitive advantage by increasing quality and reducing costs without sacrificing customer satisfaction (Spekman et. all., 1998). Every link of the supply chain is a set of relationships to be managed. With supply chain theory, the supplying process evolved from clerical work to a strategic process mainly due to the problems of uncertainty and customer focus. The uncertainties may be in the form of supply or technology. Supply uncertainty includes timeliness, quality and the control of suppliers whereas technological uncertainty is given by the extent of technological change in the industry. (Chen & Paulraj, 2004). Supply chain management is designed to overcome these uncertainties by establishing and managing effective relationships at every link. It aims to gain competitive advantage by leveraging purchasing across the entire enterprise to reap the advantage of effective information management. It is a reverse procurement process with the customer at the beginning of the spectrum. (Spekman et al., 1998).

Supply base reduction and long term relationships are at the heart of supply chain management. Long term relationships increase the intensity of coordination and make possible the sharing of risks and rewards. Supply base reduction increases the quality of information shared, reduces inventory management costs, and allows relations based on trust which enables joint product development and consequently better market penetration. (Chen & Paulraj, 2004). In the context of supply base reduction, determining which suppliers to include in the supplier chain is a key strategic consideration (Choi and Hartley; 1996). Dickson (1966), in one of the early works on supplier selection, identified over twenty supplier attributes which managers tradeoff when choosing a supplier. Since then, a number of conceptual and empirical articles on supplier selection have appeared. The conceptual articles by Ansari and Modarress (1980) and Benton and Krajeski (1990), are examples of publications emphasizing the strategic importance of the supplier selection process.

Supply base reduction in some cases is in the form of tiering of suppliers (Cousins, 1999). A tiering structure implies that while the total number of suppliers remains constant, most of the high value activities take place among first tier suppliers (Turnbull & Delbridge, 1993). The tiering process is especially common in industries with complex processes requiring high level of technical expertise.

An important implication of supply chain management is the involvement of suppliers in new product development. In many industries firms integrate their material and component suppliers into a new product development stage in order to achieve competitive advantage by decreasing the new product development time, improving quality, reducing the costs of new products and facilitating the launch of new products. (Petersen et al., 2005). Still, the supplier integration into new product development is contingent on the intensity of the relationship and technical complexity of the process. (Primo & Amundson, 2002).

Despite all the positive outcomes and attributes, a network mode of organization and supply chain management are not free of shortcomings of which the most important and cited ones are over-embeddedness, inefficient utilization of resources, the failure risk of core industry , opportunism and bounded rationality.

- High interdependency may give rise to the lock-in effect; the development of relationship specific assets narrows the firm's vision and potential to develop alternative relationships, making the firm unable to change and adapt to other conditions. (Gadde & Snehota, 2003) Also called over-embeddedness, this organizational isomorphism can reduce the flow of novel information and the relations with outside members who can contribute innovative ideas. Sometimes feelings of obligation and friendship are so great that they overweigh economic imperatives. Furthermore over-embeddedness may create negative feelings like revenge. The decrease of an organization in the network will affect the performance of all other organizations in the network in direct proportion to its resource dependence. Organizations that are tightly and loosely coupled to their networks maximize adaptive capacity. Tight coupling increases transactional efficiency while loose coupling decreases vulnerability and improves its ability to react and anticipate opportunities. (Uzzi, 1997)
- The reason behind the establishment of networks is sharing resources or accessing different resources through network relationships. In networks one resource can be used in many different combinations and this may lead to the overexploitation of some features and to the underutilization of others which is a source of inefficiency. So resources have hidden and unexploited dimensions and cannot be taken as given and they may be

used efficiently only through combining and recombining the business relationships. (Gadde & Snehota, 2003).

- Inter-firm relations develop around core establishments that provide resources. Core organizations are generally large manufacturers, have a broad knowledge of the design and process of products as a whole but not of components and belong to multinational or multiregional companies. Periphery firms tend to be small and possess specialized skills and expertise. Their small size increases flexibility and adaptability. They mimic the practices of the core firm either by establishing plants near or by forming corporate ties. The welfare of the network is tied to the core firm which creates reciprocity. The loss of a core organization either due to financial reasons or due to institutional arrangements will have a negative effect on the whole network. The intensity of the effect increases with the size and level of embeddedness. (Uzzi, 1997)
- Mutual trust and commitment are important characteristics of network relations. This requires the transformation of the definition of an actor from the inside perspective (hierarchy) to the outside view (network). Still opportunism and bounded rationality leads to ambitions of influencing and controlling others. If this ambition is achieved by a single party, this leads to a limited view of the entire network and weakens the network's ability to respond to changes. Each company has a unique position in the network and this position is perceived differently by other actors. Actor mutuality is a measure of how much a company is prepared to refrain its own

individual goals in order to increase joint well being (Uzzi, 1997; Gadde & Snehota, 2003).

Looking at the historical evolution, the integrated way of structuring appears to be the end point of industrial organization. Still, for a mode of governance to be viable economically, it must be effective and efficient (Jarillo, 1988). Still, due economic efficiency concerns, in today's literature, arm's length relations and integrated ties are accepted as the two ends of the spectrum with their own benefits and costs. Under the assumptions of bounded rationality and opportunism, given the costs of negotiating and contracting, autonomous contracting will be efficacious only in the case of full competition where transactions are extremely monetized and disputes are settled legally (Williamson, 1975). Networks, on the other hand, create an incentive for learning and dissemination of information, offer a highly feasible means of utilizing intangible assets like tacit knowledge and technological innovation, but given the high costs of coordination, adaptation and interaction, are useful only when resources are variable and specific and the environment is uncertain (Powell, 1990). Given these costs and benefits, the most efficient strategy for suppliers is to follow not a single but a portfolio of customer relationships characterized by different degrees of involvement. (Gadde & Snehota 2000).

Empirical Background

Selecting a relational design under different external contingencies is a strategic decision and affects firm's financial performance heavily. This strategic issue has been an important concern for empirical researchers from various disciplines for the last 50 years.

Integrated relationships have some unique characteristics that distinguish them from traditional business relationships. The identification of the variables that characterize integrated relationships has been an important issue for empirical researchers. For this purpose, Morgan and Hunt (1994) hypothesized that successful relationship marketing requires commitment and trust which are the key mediating variables among five antecedents which are relationship, termination costs, relationship benefit, shared values, communication and opportunistic behavior, and five outcomes, namely acquiescence, propensity to leave, cooperation, functional conflicts and decision making uncertainty. They tested their hypotheses on a sample of 204 firms from the automobile tire industry. Correlation analysis supported all 13 hypotheses and structural equation modeling test supported 12 out of 13 relationships. They concluded that if cooperative relationships are required for relationship marketing success, commitment and trust are the key factors. In the same year another attempt, to discover the key variables of successful integrated relationships came from Mohr and Spekman (1994). They based their study on two premises. First, integrated relationships have some characteristics that distinguish them from conventional business relationships. Second, more successful partnerships exhibit these characteristics more intensely than less successful ones. They classified integrated relationship characteristics in three groups; attributes of partnership which are commitment, coordination, interdependence and trust, communication of behavior which are quality, information sharing and participation, and conflict resolution techniques which are joint problem solving, persuasion, smoothing, domination, harsh words and arbitration. They operationalized the success factor with three measures; satisfaction with manufacturer support, satisfaction with profits and dyadic sales. They collected data from 124 personal computer dealers and found out that the key variables determining a partnership's success were coordination, commitment, trust, communication quality, information sharing, participation, joint problem solving and avoiding the use of smoothing over problems.

An important issue in the network type of relationships was supplier base reduction and consequently supplier selection processes. A set of empirical studies aimed to identify the factors that shape supplier selection. Anderson et al. (1989) made a field survey on effective supply chains and found that although managers say that quality is the most important attribute for a supplier, they actually choose suppliers based largely on cost and delivery performance. Choi & Hartley (1996) searched the supplier selection process of U.S. auto assemblers and found that they placed a special importance on consistency (quality and delivery), reliability, relationship, flexibility, price, and service.

The empirical studies conducted in the area of supply chain management, aimed to relate the unique characteristics of integrated relationships to financial performance and hypothesized a positive association between integration intensity and business performance. Spekman, Kamauff & Spear (1999) argued that establishing and managing effective relationships at every link of the supply chain is the main prerequisite of success. According to them, the ten principles of effective sourcing are integrating suppliers into the supply chain, sharing information, developing trust, organizing effectively to achieve alignment, using commodity teams, looking globally, focusing on total cost, rationalizing the supply base, leveraging technology and transferring some activities to suppliers. They tested their argument on 22 well established supply chains from North America, Latin America and Europe. They employed various performance measures ranging from traditional measures like decreased inventory level and improved quality to more robust metrics like end-user satisfaction. They found out that high performing supply chains obey to the ten rules more than the lower performing supply chains. Carr & Pearson (1999) proposed that firms that are seeking to establish long term relationships with their customers emphasize strategic purchasing and supplier evaluation system. Furthermore, strategically managed long term relationships with key suppliers have a positive impact on the firm's financial performance. They measured financial performance through an objective data which is return on investment and a set subjective data. They tested their hypothesis on a sample consisting of 168 firms from a variety of industries and concluded that strategic purchasing affects a firm's financial performance positively both directly and indirectly through the mediation of buyer-supplier relationships and supplier evaluation systems. The results were more significant for large scale firms than smaller ones. Rosenzweig, Roth & Dean (2003) hypothesized a positive relationship between supply chain integration intensity, competitive capabilities and business performance. They used eight measures; product quality, delivery reliability, process flexibility and cost leadership for comparative capabilities and return on assets, sales growth, customer satisfaction and revenues from new products for business performance. All the measures are operationalized by respondents' perceptions about their firm performance in comparison to those of major competitors. Their analysis on a dataset of 238 consumer products manufacturers coming from 36 different countries justified the positive relationship between integration intensity and competitive capabilities for all four measures. The measures for business performance however gave mixed results; for this dataset integration intensity had no effect on customer satisfaction or sales growth; but it had a direct effect on return on assets and revenue from new products.

The selection of the appropriate relationship strategy and its impact on financial performance has been another important concern for researchers. Uzzi (1996), by interviewing 43 high level managers of 23 firms operating in the US apparel industry identified trust, fine grained information transfer and joint problem solving as being the unique features, functions and sources of embeddedness. In the second phase of his study, Uzzi hypothesized that the probability of organizational survival increases as firms tend to transact in both integrated and arms' length manner and conversely the probability of organizational survival decreases as the network with which the focal firms transact tends toward all arms' length or all integrated ties. Uzzi measured the integrated relationships by calculating the proportion of work done by one contractor for each of its manufacturers. Using a data set consisting of 89 dress apparel firms in New York, he revealed that embeddedness is an exchange system with unique opportunities relative to markets and that firms organized in networks have higher survival chances than do firms which maintain an arm's length relationship; still the positive effect of embeddedness reaches a threshold after which point the positive effect reverses itself.

Cousins & Lawson (2007) examined linkages between sourcing strategies, relationship characteristics and firm performance. They classified materials to be sourced as critical and leverage in accordance with Kralzij (1983) and hypothesized that critical sourcing require a collaborative relationship which is characterized by mutual dependencies, long term contracts and confidentiality. However, as this type of relationship entails coordination, interaction and adaptation costs, an arm's length contractual relationship is more suitable for the sourcing of leverage materials. They conducted a survey on 142 manufacturing firms located in the UK.

Relationship outcomes were measured according to the extent to which collaborative and business goals were achieved. They found that high business and relational outcomes are achieved when the critical sourcing strategy is associated with a collaborative relationship and a leverage sourcing strategy is associated with an arm's length relationship.

The association between relationship strategy and technological strength was analyzed by Kasauf and Celuch (1997). They tested the effect of the relationship orientation of the suppliers on their technological innovativeness on a sample of 62 firms coming from the powder metallurgy parts industry in the United States and Canada. Their main finding was that firms with a high relationship orientation were smaller and more optimistic about the industry's ability to support a greater number of firms in the future and perceived faster technology change than firms with a low relationship orientation.

CHAPTER 3: MODEL AND HYPOTHESES

Model

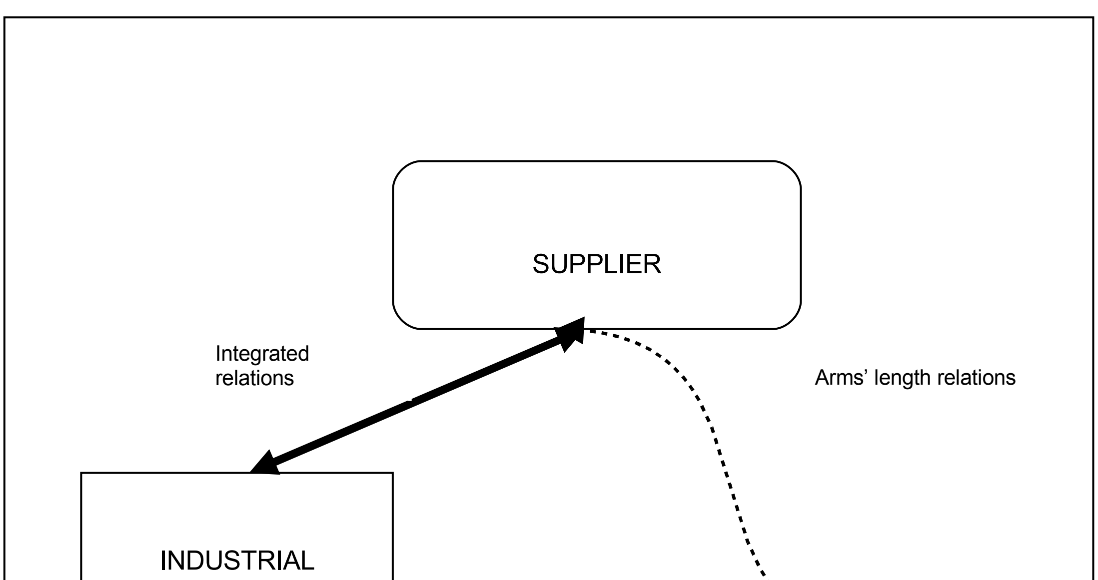
The purpose of this study is twofold: first, it aims to examine the nature and the consequences of the relationship between suppliers and the industrial buyers, and second, it aims to find the association of these relationships with suppliers' financial performance.

Taking into consideration the principles of efficiency and effectiveness, in today's literature, arm's length relations and integrated ties are accepted as the two ends of the governance structure spectrum.

Arm's length relationships, having their basis in neoclassical economic theory, which sustains that the direction of sources is dependent directly on the price mechanism, are purely impersonal where no social interaction takes place. In such relationships, transactions occur on the basis of the quantity demanded and supplied.

Integrated relationships on the other hand, have their basis in the network theory which emphasizes inter-firm cooperation and affiliation. Contrary to arms' length relationships, integrated relationships are stable, continuous and long lasting. They are characterized by some social factors like bilateral trust, commitment, cooperation, joint product development, joint conflict resolution and extensive communication.

The hypothesized model is presented in Figure 1.


SUPPLIER
Integrated relations
Arms' length relations
INDUSTRIAL

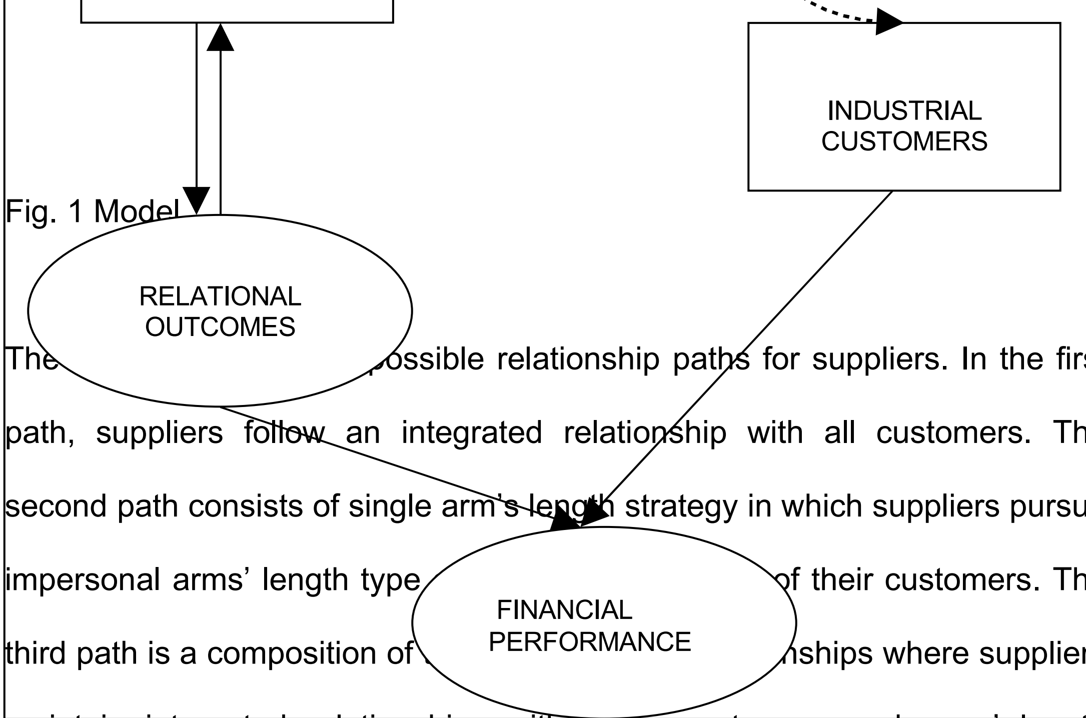


Fig. 1 Model

The [illegible] possible relationship paths for suppliers. In the first path, suppliers follow an integrated relationship with all customers. The second path consists of single arm's length strategy in which suppliers pursue impersonal arms' length type [illegible] of their customers. The third path is a composition of [illegible]nships where suppliers maintain integrated relationships with some customers and arms' length relationships with others. The first path is referred to as single integrated relationship strategy, the second as the single arms' length relationship strategy and the last as the portfolio of relationships strategy for the rest of the study.

The model further implies a two way positive relationship between integration intensity and relational outcomes; financial performance on the other hand is a composition of the arms' length and integrated relationships for the suppliers following the portfolio of relationships strategy.

Hypotheses

As mentioned in the literature survey chapter, recent network and supply chain management theories view the establishment and management of effective relationships as a prerequisite for gaining competitive advantage in the market. (Spekman et al., 1999). Effective relationships, on the other hand, are characterized by special features which are the unique characteristics of these relationships (More & Spekman, 1994). From these premises, emerges the first hypothesis;

H1: The integration intensity between suppliers and their industrial customers is positively associated with relational outcomes which are measured by increased product quality, delivery reliability, process flexibility and cost leadership.

From the perspective of the main industries, in the last 50 years, companies have increased their level of out-sourcing and are relying more heavily on their supply chain as a source of their competitive advantage. Thus, determining which suppliers to include in the supplier chain has become a key strategic consideration. Choi and Hartley (1996) in their empirical work, showed the special importance of consistency (quality and delivery), reliability, relationship, flexibility, price, and service in the supplier selection process. A large number of empirical studies conducted thereafter reached to similar conclusions and identified product quality, delivery performance, process flexibility and effective cost management as significant factors in supplier selection decisions.

These findings on the supplier selection processes of the core industries have important implications for the suppliers as they indicate that improved performance in relational outcomes increase the probability of capturing new customers. Based on these premises, the second hypothesis is formulated as follows;

H2: Relational outcomes, defined as product quality, delivery performance, process flexibility and cost efficiency, are positively associated with the integration intensity between suppliers and their industrial customers.

The first two hypotheses indicate a two-way relationship between integration intensity and relational outcomes. It is hypothesized that an effective integrated relationship with a customer leads to relational outcomes which are defined as improved product quality, delivery performance, process flexibility and cost efficiency and once gained, these relational capabilities give rise to subsequent integrated relationships through the reputation effect.

The hypothesized two way relationship between integration intensity and relational outcomes implies that the firms that maintain integrated relationships with some or all of the customers have comparative advantages in all relational outcomes compared to those that follow single arms' length relationships. From this premise comes out the third hypothesis:

H3: A supplier that maintains integrated relationships with some or all of the customers, performs better in relational outcomes compared to those that transact only in an arm's length way.

As mentioned in the literature survey section, despite creating some relational outcomes, over-embeddedness has serious drawbacks like lock-in effect, inefficient use of resources, overdependence on the core firm and the possible opportunism and bounded rationality of one of the parties (Uzzi, 1997; Gadde & Snehota, 2003). Given these drawbacks, Kralzic (1983) proposed that not a single but a portfolio of relationships is the best supply strategy for the core firms. Looking from the perspective of the suppliers, Gadded & Snehota (2000) reached the same conclusion and argued that given the costs and benefits of integrated relationships, the most efficient strategy for suppliers is to follow not a single but a portfolio of customer relationships characterized by different degrees of involvement. Furthermore Uzzi (1996) in his field study found that the probability of organizational survival increases as the firms tend to transact in both integrated and arms' length manner and conversely the probability of organizational survival decreases as the network with which the focal firms transact tends toward all arms' length or all integrated ties. From these findings which emphasize the benefits of the diversification of relationships emerge the fourth and the last hypothesis of this study:

H4: A supplier, which maintains both integrated and arm's length relations with its customers has higher financial performance compared to those that maintain only one of these relationships.

CHAPTER 4: VARIABLES AND MEASUREMENT

Variables

Integration Intensity Variables

It is commonly agreed that integrated relationships possess some unique features that differentiate them from conventional business relationships. Still, in the academic world there is not much consensus on the factors and variables that measure these unique features either directly or through the mediating effect. The factors used by previous empirical studies to identify the presence and the intensity of the integrated relationships are varying in nature and numerous in number and furthermore the findings are somehow mixed and conflicting. The most cited studies and the factors found to significantly explain integrated relationships are presented in Table 1.

Table 1. Factors of Integration Intensity

Researcher	Research Type	Factors	Number of items	Scale
Anderson and Narus (1990)	Empirical	relative dependence	2	5 point Likert scale
		communication	3	7 point Likert scale
		outcomes given comparison levels	1	5 point Likert scale
		trust	3	7 point Likert scale
		cooperation	3	7 point Likert scale
		conflict	1	5 point Likert scale
		influence over and by partner firm	3	7 point Likert scale
		satisfaction	1	7 point Likert scale
Morgan and Hunt (1994)	Empirical	relationship benefits	4	7 point Likert scale
		relationship termination costs	5	7 point Likert scale
		trust	7	7 point Likert scale
		communication	4	7 point Likert scale
		commitment	7	7 point Likert scale
		shared values	5	7 point Likert scale
		opportunistic behavior	3	7 point Likert scale
		acquiescense	1	7 point Likert scale
		propensity to leave	3	7 point Likert scale
		cooperation	5	7 point Likert scale
		conflict	2	7 point Likert scale
		uncertainty	10	7 point Likert scale
More and Spekman (1994)	Empirical	commitment	3	5 point Likert scale
		coordination	3	5 point Likert scale
		trust	3	5 point Likert scale
		communication quality	1	5 point Likert scale
		participation	4	5 point Likert scale
		conflict resolution	1	5 point Likert scale
Zineldin and Jonsson (2000)	Empirical	adaptation	5	7 point Likert scale
		relatinship bonds	5	7 point Likert scale
		relationship termination costs	12	7 point Likert scale
		shared values	5	7 point Likert scale
		communication	6	7 point Likert scale
		opportunistic behavior	7	7 point Likert scale
		satisfaction	3	7 point Likert scale
		cooperation	4	7 point Likert scale
		trust	8	7 point Likert scale
		commitment	7	7 point Likert scale
Gunasekaran et all. (2001)	Theoretical	information sharing		
		cost saving initiatives		
		mutual co-operation		
		the entity and stage of the supplier		
		problem solving efforts		
Walter (2003)	Empirical	commitment	4	7 point Likert scale
		trust	5	7 point Likert scale
		supplier specific adaptations	3	7 point Likert scale
		relationship advancement	1	7 point Likert scale
		involvement	1	7 point Likert scale

After a detailed analysis of the studies presented in Table 1 and many others, the attributes which explain integrated relationships are classified under five comprehensive and major factors, which are commitment, trust, cooperation, communication and conflict resolution.

- Commitment: Commitment refers to the willingness of the trading partners to exert effort on behalf of the relationship. A committed partner wants the relationship to endure indefinitely and is willing to work at maintaining it and does not engage in opportunistic behavior. (Morgan & Hunt, 1994; Mohr & Spekman, 1994; Zineldin & Jonsson, 2000)

- Trust: It is the confidence in the exchange partner's reliability and integrity (Morgan & Hunt 1994). It is formed by the firm's belief that another company performs actions that will result in positive outcomes. Once trust is established, the parties learn that joint efforts will lead to outcomes that exceed what the firms would achieve by acting alone (Anderson & Narus, 1990).
- Cooperation: It is defined as situations in which parties work together to achieve mutual goals (Anderson & Narus, 1990). Cooperation reflects the extent to which parties engage jointly in planning and goal setting which allows mutual expectations to be established and cooperative efforts to be specified (Mohr & Spekman, 1994).
- Communication: Communication refers to the extent to which critical, often proprietary information is communicated to one's partner. The systematic availability of information allows parties to complete tasks more effectively (Mohr & Spekman, 1994). It includes such aspects as accuracy, timeliness, adequacy and credibility of the information exchanged and is essential for achieving common goals and objectives (Mohr & Spekman, 1994).
- Conflict Resolution: Conflict exists in inter-organizational relationships due to inherent interdependency between parties. As the impact of conflict

resolution on the relationship may either be destructive or productive, the manner in which partners resolve the conflict has important implications on success (Mohr & Spekman, 1994). In integrated relationships, internal resolution of conflicts is essential. Since the parties are linked to manage an environment that is uncertain and turbulent, conflicts are inevitable and mutually satisfactory solutions can only be attained with joint efforts (Anderson & Narus, 1994).

In this study, to measure the five integration intensity factors, the items which took place in the scales developed and validated by Morgan and Hunt (1994), More and Spekman (1994), Zineldin and Jonsson (2000) and Walter (2003) are analyzed. 17 items which were used commonly by more than one scale are identified and adapted. The factors and items and the scales from which they are adapted, are presented in Table 2.

Table 2. Factors and Scales

Factor	Item number	Scales and Related Factor Names			
		Morgan and Hunt	More and Spekman	Zineldin and Jonsson	Walter
commitment	1	commitment		commitment	commitment
	2			commitment	
	3				commitment
trust	1	trust		opportunistic behavior	trust
	2				trust
	3			trust	trust
cooperation	1		participation	cooperation	
	2		participation	shared values	
	3		participation	cooperation	
	4		strategic partnership	shared values	
	5		strategic partnership		
communication	1	communication	information sharing	communication	
	2	communication		communication	
	3			communication	
conflict resolution	1	conflict resolution	coordination		
	2		conflict resolution		
	3	conflict resolution			

Relational Outcome Variables

Rozenweig et al. (2003) after a detailed survey, identified four factors to measure the relational outcomes of consumer product manufacturers: these are improved quality, delivery performance, increased process flexibility and cost leadership.

- Product quality: Total quality management is considered an important element of the business strategy. Recently, the companies are shifting their emphasis from inspection to designing quality in the product with process control and with process improvement efforts. It is important to have a strategic orientation towards quality rather than using piecemeal attempts to achieve quality. (Tan et al. 1999). Furthermore effective integration among supply chain members enables consistent improvements in quality. (Rosenzweig et al. 2003)

- Delivery reliability: The most important aspects of delivery performance are on-time delivery and reduced lead time (Gunasekaran et al. 2001). It consists of on-time delivery of the correct number and type of parts to the customers and results from relationship- building practices such as the sharing of information and integration with customers. (Rosenweig et al. 2003)
- Process Flexibility: Process flexibility refers to making available the products and services to meet the individual demands of customers. This has become possible mainly through flexible manufacturing systems and information technology (Gunasekaran et al., 2001). It is extremely important in highly competitive environments in which frequent changes in volume, product mix and schedules occur. The development of process flexibility requires a great deal of collaboration and integration with customers. (Rosenweig et al., 2003)
- Cost leadership capability: It enables manufacturers to be more price-responsive and subsequently work with higher margins than competitors due to lower manufacturing costs. Tightly integrated customers are able to decrease their costs more than their less integrated counterparts (Rosenweig et. all., 2003).

To measure the four factors, Rozenweig et al. (2003), developed a scale consisting of 11 items of which the details are presented in Table 3.

Table 3. The Scale of Rozenweig, Roth & Dean

Factor	Number of Items	Scale
Product Quality	3	5 Point scale from low to leader
Delivery Reliability	3	5 Point scale from low to leader
Process Flexibility	3	5 Point scale from low to leader
Cost leadership	2	5 Point scale from low to leader

In the context of this study, to measure relational outcome factors, the scale developed and validated by Rozenweig et al. (2003) is used.

Mediating Variable

A mediation model is one that seeks to identify and explicate the mechanism that underlies an observed relationship between an independent variable and a dependent variable via the inclusion of a third explanatory variable, known as a mediator variable. Rather than hypothesizing a direct causal relationship between the independent variable and the dependent variable, a mediation model hypothesizes that the independent variable causes the mediator variable, which in turn causes the dependent variable. (James & Brett, 1984)

When suppliers and core firms work in harmony over time, transaction-specific know-how accumulates which helps the continuous implementation of new product designs or changes (Rozenweig et al., 2003). Furthermore, improvements in product quality are more significant when core firms involve critical suppliers in new product development processes (Primo & Amundson, 2002). Besides the product design performance, supplier involvement in new product design produces significant financial returns for core firms. (Petersen et al., 2005). From the standpoint of suppliers, those with a high relationship orientation perceive faster technological change than firms with low relationship orientation (Kasauf & Celuch, 1997).

All these findings together show that innovativeness has in some instances, a mediating role between integration intensity and relational outcomes in integrated relationships. In this study, “new product development speed” and “research and development budget size relative to competitors” are used as proxies for innovativeness.

The model, which combines the first two hypotheses, assumes a two way positive relationship between integration intensity variables and relational outcome variables, both directly and indirectly through the mediation effect of innovativeness (Fig. 2).

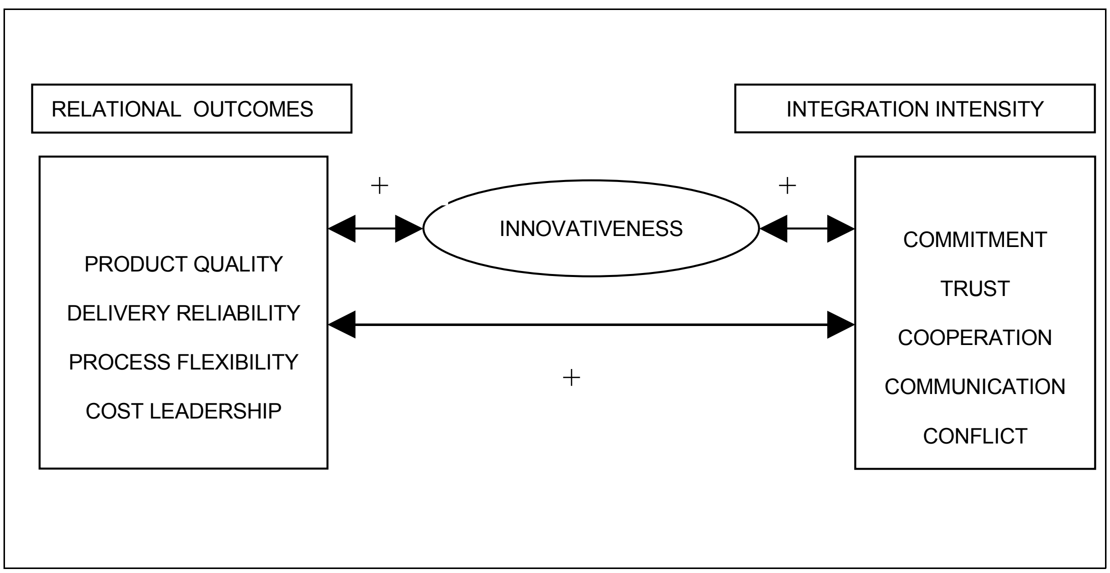


Fig. 2 The Association between Integration Intensity and Relational Outcomes

Financial Performance Variables

Financial performance is measured through a set of ratios measuring profitability, growth, risk, efficiency and value added. Profitability Ratios are a class of financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. For most of these ratios, having a higher value relative to a competitor's ratio or the same ratio from a previous period is indicative that the company is doing well (Brealey et al, 1999). The three profitability ratios used in this study are return on equity, return on assets and profit margin.

- Return on Equity (ROE): It is a measure of a corporation's profitability that reveals how much profit a company generates with the money shareholders have invested. Return on equity is calculated as the ratio of the return after taxes to total shareholder’s equity.
- Return on Assets (ROA): It is an indicator of how profitable a company is relative to its total assets. Return on assets gives an idea as to how efficient management is at using its assets to generate earnings. It is calculated by dividing a company's annual earnings by its total assets.
- Profit Margin (PM): It measures how much out of every unit of sales a company actually keeps in earnings. A higher profit margin indicates a more profitable company that has better control over its costs compared to its competitors. It is calculated as net income divided by revenues, or net profits divided by sales.

Growth Ratios are a class of financial metrics that are used to assess a business's expansion during a given interval (Brealey et al, 1999). In this study sales growth, which is defined as the annual increase in sales, is used to measure the growth.

Risk Ratios are a class of financial metrics that are used to assess a business’s quantifiable likelihood of loss or less-than-expected returns for an interval (Brealey et al., 1999). Risk, in this study, is measured through equity multiplier (leverage ratio) and standard deviation of return on equity.

- Volatility of Return on Equity: It’s a statistical measure of the historical volatility of return on equity. It measures total risk by the extent to which values for return on equity are spread around their average. The metrics used in this study is the standard deviation of the return on equity.
- Equity Multiplier: It shows a company's total assets per dollar of stockholders' equity. A higher equity multiplier indicates higher financial leverage, which means the company is relying more on debt to finance its assets which is a sign of riskiness. Equity multiplier is measured as the ratio of total assets to total stockholders' equity.

Efficiency Ratios are utilized to measure the efficiency with which a business manages its assets and liabilities and controls its cost of goods sold and expenses (Brealey et al., 1999). Asset turnover which is a measure of how well assets are being used to produce revenue is used as a proxy for efficiency. It is calculated as net sales divided by total assets.

Value added is a measure of the contribution to “gross domestic product” made by an individual producer. Net value added is the sum of total profits, financial expenses and salaries. Gross value added, which is the metrics used in this study, is calculated by adding total depreciation and net taxes to net value added.

Measurement

Scale Development

In this study, seventeen items measuring integration intensity factors, eleven items measuring relational outcome factors and two items measuring innovativeness are combined in a single questionnaire.

The questionnaire has two sections. The first section consists of thirteen items measuring relational outcomes and innovativeness variables preceded by three questions about the firm (name, labor and ownership structure) and two other questions about the demographics of the respondent (position in the firm and length of employment with that company). The respondents are asked to proceed to the second section only if their company maintains integrated relationships with specific customers. They are further asked in case of the presence of more than one integrated customer, to fill the second part for each integrated customer separately for a maximum of three relationships.

The second part consists of seventeen questions measuring integration intensity, one covariate item and two open ended questions preceded by two questions about the customer (the ratio of the volume of sales to that customer to total sales volume and the length of the relationship). The covariate item aims to identify the relative importance of each integration intensity factor for that specific relationship. The first open ended question is for assessing other integration intensity factors which are important for the continuity of the relationship and which are not mentioned in the questionnaire whereas the second open ended question aimed to identify the source of the first contact with that customer. The final questionnaire consists of one copy of the first section and three copies of the second section.

The term validity refers to the kind and accuracy of the information obtained from individual sample units. The main concern of validity is to measure the extent to which a particular methodology produces not only relevant information from individual sample units but also information which is plentiful, accurate, honest, illuminating or whatever the specific criteria of goodness are. The main types of validity are apparent (face) validity, internal validity, instrumental validity and construct validity. (Sykes, 1990)

All the items of the questionnaire were drawn from scales which were successfully checked for validity. Still, the adaptation process required a subsequent check for face validity. For this purpose, the questionnaire was checked and corrected by two area experts and by one bilingual Turkish language expert.

The questionnaire is tested in a pilot study consisting of a sample of nine firms supplying products to footwear, construction, tire and automotive industries. Two firms did not have any integrated customers and so filled only the first part of the survey. The remaining seven firms filled the questionnaire for a total of thirteen relationships.

The first open ended question was filled by five respondents. They all indicated “customer’s reliability in payments” as an important factor in the continuity of relationships. Two firms added intimacy and one sales price as important factors for the continuity of integrated relationships.

Looking at the source of the first contact, four relationships were started by the customer’s initiative and three with the supplier’s initiative. Third party references were effective in the formation of four relationships whereas for the remaining two, the parties first met in an industrial fair.

In survey analysis, reliability is a measure of the reproducibility of the survey instrument or test. In other words, reliability is a measure of precision as it describes the random error of the survey instrument (Sykes, 1990). The three most widely used methods to determine the reliability of a measure are test-retest, internal consistency and alternative forms (Churchill 1979). In this study, to measure the reliability of integration intensity, relational outcomes and innovativeness measures the internal consistency method is used. Internal consistency is measured through coefficient alpha. All alpha levels above 0,7 are typically considered acceptable (Churchill 1979). The reliability statistics are presented in Table 4.

Table 4. Reliability Statistics

Factor	Cronbach's Alpha
Commitment	-0,429
Trust	0,681
Cooperation	0,677
Communication	0,737
Conflict Resolution	0,623
Product Quality	0,726
Delivery Reliability	0,794
Process Flexibility	0,888
Cost leadership	0,730
Innovativeness	0,689

All Alpha levels were either near or above 0,7 level with the exception of one factor which is commitment. One of the three items which measured commitment was heavily unreliable, so it was removed from the questionnaire. The remaining two items produced an alpha level of 0,654 which considerably approaches the acceptable level.

Consistent with pilot study findings, the item "customer reliability in payments" item was added to the questionnaire under the factor of trust. Furthermore, to give the final form to the questionnaire, the two exploratory open ended questions were removed. The questionnaire in its final form is presented in Appendix A.

The questionnaire was given to the sales managers of the companies through face to face communication and telephone contact. The respondents were made necessary explanations when needed. 106 out of 186 firms accepted to join to the survey; the response rate was 57%.

The surveyed attributes of the respondents are presented in Table 5. Of 106 respondents, 2 were company owners and 104 were high and middle level managers; mean employment length with the company was eight years.

Table 5. The Respondents

Respondent Position	Frequency	Average Years of Employment
Company Owner	2	16
Sales Director	38	7
Sales Manager	66	8
Total	106	8

Measurement of Financial Performance

Financial performance is measured through a set of ratios measuring profitability, growth, risk, efficiency and value added. All the financial performance variables and the way they are measured are summarized in Table 6.

Table 6. Financial Performance Variables

Factor	Variable	Measurement
Return	Return on Equity	Net Income / Shareholder's Equity
	Return on Assets	Net Income / Total assets
	Profit Margin	Net Income / Net Sales
Growth	Sales Growth	Percentage Change in Net Sales
Risk	Volatility of Return on Equity	Standart Deviation of Return on Equity
	Equity Multiplier	Total Assets / Shareholders' Equity
Efficiency	Asset Turnover	Net Sales / Total Assets

Methodology

The appropriateness of the items that measure the integration intensity of the firms in the sample was checked by factor analysis. Factor analysis addresses the problem of analyzing the structure of the interrelationships (correlations) among a large number of variables by defining a set of common underlying dimensions known as factors (Hair et al., p. 90).

To measure the association between the integration intensity variables and relational outcome measures the linear regression method was used. The strength of the mediating variable was checked with hierarchical regression analysis.

Similarly, the reverse association between relational outcome variables and integration intensity measures was analyzed with the linear regression method, and for the identification of the mediating variable, hierarchical regression analysis was applied.

To identify the discriminating role of relational outcomes, besides univariate t-test statistics, the multivariate logistic regression statistical method was used.

Finally, the financial performance differences between firms that maintain only one type of relationship and those that prefer a portfolio of relationship strategies were checked with analysis of variance.

CHAPTER 5: DATA AND SAMPLING

Sample Selection

The model is tested on a sample of 106 Turkish firms supplying to the automotive, electronics, white goods and construction industries.

To compose a sample list, the member lists of the Association of Automotive Parts and Component Manufacturers, White Goods Supplier Association, and the Association of Building Material Producers were utilized. The full list consisted of 411 firms. Due to financial data availability, only those companies that were in the Istanbul Chamber of Industry's biggest 1,000 firms list in at least one of the 5 years between 2003 and 2007 were included in the sample. The final list consisted of 186 companies, of which 97 were component producers and 89 construction industry suppliers.

- The automotive industry is composed of 18 firms of which the biggest 5 realize around 55-57% of the total production. As at end 2007, there are nearly 1,000 suppliers, of which 300-350 are estimated to be first or second tier suppliers. The automotive industry's total production is around 6% of the country's total production. (Automotive producers association, 2007).
- The white goods industry is composed of six core firms of which the biggest three are local firms with strong brand images at the end of 2007. Turkey is the third biggest producer in Europe and the ninth

biggest exporter of the world in this sector. The sector as a whole contributes by 2% to the total employment. The total number of suppliers is estimated to be around 1,000. (Yüzal, 2006)

- The Turkish electronics industry is composed of five sub-sectors which are telecommunications, consumer electronics, computers, military electronics and industrial machines. Around 2,000 firms operate in the sector and the total number of employees was estimated to be around 30,000 at the end of 2007. In the electronics industry, Turkey with 6% market share is the third largest exporter of the world. (Taylan, 2007)
- The construction industry is one the greatest industries in Turkey. As at 2007, its direct contribution to the GNP is 5%, whereas its contribution to total employment is 15%. The sub-sectors of the construction industry are cement, concrete, iron and steel, ceramic, brick and glass industries. Around 45% of the main industry is controlled by the public sector, whereas the remaining 55% is fragmented among many firms. (Maç 2007).

The four core sectors which are the automotive, electronics, white goods and construction industries are considered strategic due to their size and contribution to the national economy.

Sample Characteristics

Of the 106 firms in the sample, 17 were quoted to stock exchange and 67 appeared in the biggest 1000 firms list published by the Istanbul Chamber of Commerce in all five years of analysis. (Table 7).

Table 7: Firms in the Sample

	all 5 years	4 of 5 years	3 of 5 years	2 of 5 years	1 of 5 years	Total
ISE's Biggest 1000 List	67	15	9	12	3	106
Quoted to stock exchange	17	17	17	17	17	17

The sector distribution of the firms in the sample is presented in Table 8. 32 firms serve more than one industry.

Table 8. Sector Distribution of the Sample

	Sectors				
Products	Construction	Automotive	White Goods	Electronics	Total
Cement and Concrete	17				17
Iron and Steel	13	3			16
Aluminium and Plastics	7		2		9
Bricks and Glasses	2	1			3
Components		47	33	13	93
Total	39	51	35	13	138

The ownership structure of the companies is presented in Table 9. 78 firms are owned by local entrepreneurs whereas in 28 companies foreign capital contribution exceeds 50%.

Table 9. Ownership Structure

	Sectors		
	Construction	Components	Total
Foreign capital	9	19	28
Local capital	30	48	78
TOTAL	39	67	106

The size distribution of the companies, measured by number of employees and sales volume, is presented in Tables 10 and 11. The sales volume distribution of the sample approached homogeneity as the mean (122,600,000 YTL) and the median (108,900,000 YTL) were not far from each other. The mean approached to fifty-seventh observation and the median represented fifty-third. Consequently, the sample is divided into three equal size classes; small, medium and large.

Table 10. Size Structure (Number of Employees)

	Sectors		
	Construction	Components	Total
Number of employees			
<250	13	14	27
250-500	17	24	41
>500	9	29	38
TOTAL	39	67	106

Table 11. Size Structure (Sales Volume)

	Sectors		
	Construction	Components	Total
Sales Volume			
<65,000	6	29	35
65,000-150,000	12	24	36
>150,000	21	14	35
TOTAL	39	67	106

The customer relationship structure of the companies in the sample is presented in Table 12.

Table 12. Relationship Structure

		Sectors	
Relationship Structure	Construction	Components	Total
Single Relationship-Arms' Length*	17	22	39
Single Relationship-Integrated**	0	7	7
Portfolio of Relationships***	22	38	60
Total Number of Firms	39	67	106
Total Number of relationships	30	112	142

* Firms that maintain only arms' length relationships
** Firms that maintain only integrated relationships
*** Firms that maintain both types of relationship

46 firms had only one type of relationship whereas 60 firms preferred the portfolio approach. 67 firms had integrated relationships with a total of 142 customers. The mean number of integrated customer per firm was 2.12. The mean length of relationships was 12.8 years and mean transaction volume was 26% of the total sales volume of the supplying firm.

The data for financial performance indicators was taken from the database of the Istanbul Chamber of Industry. The Istanbul Chamber of Industry keeps the record of four balance sheet and income statement items which are net sales, net profit, total assets and shareholders equity for the biggest 1,000 firms. The missing data was collected from company accountants through telephone contact.

CHAPTER 6: ANALYSIS AND FINDINGS

Integration Intensity

The appropriateness of the items that measure the integration intensity of the firms in the sample was checked with factor analysis. Factor analysis addresses the problem of analyzing the structure of the interrelationships (correlations) among a large number of variables by defining a set of common underlying dimensions known as factors. Factor analysis makes it possible to identify the separate dimensions of the structure and to determine the extent to which each variable is explained by each dimension. (Hair et al., p. 90)

To apply factor analysis, it is necessary to ensure that the data matrix has sufficient correlations which can be accomplished either through the examination of the entire correlation matrix or through statistical tests. The Bartlett test of sphericity is a statistical test that provides the probability that the correlation matrix has significant correlations among at least some of the variables. Another test to quantify the degree of inter-correlations among the measures is the measure of Sampling Adequacy. For this test any value above 0.8 is considered acceptable. (Hair et al., p. 99)

The results of the Bartlett and Measure of Sampling Adequacy tests are presented in Table 13. The results show that the data is appropriate for factor analysis.

Table 13. Measure of Sampling Adequacy and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.883
Bartlett's Test of Sphericity	Approximate Chi-Square	1,110
	Degrees of Freedom	136
	Significance	.000

As selection methods, principal component analysis and a priori factor selection methods were used. Principal component analysis considers the total variance and derives factors that contain small proportions of unique variance and in some instances error variance. A priori criterion is the method used when the number of factors to be extracted is already known. (Hair et al., p. 104).

In the application of factor analysis, orthogonal equimax rotation is performed. The objective of orthogonal rotations is to simplify rows and columns of the factor matrix to simplify interpretation. The equimax approach on the other hand, rather than concentrating on the simplification of either rows or columns, tries to accomplish some of each. (Hair et al., p. 110)

The factor loadings are presented in Table 14.

Table 14: Factor Loadings

	FACTORS				
	cooperation	trust	comunication	commitment	conflict
VARIABLES					
commitment 1				0.88	
commitment 2			0.71	0.34	
trust1		0.58		0.58	
trust2		0.69			
trust3		0.69	0.33		
trust4		0.72			
communication1		0.56	0.44		
communication2			0.46	0.45	0.39
communication3	0.61		0.41		
cooperation1	0.53	0.45			
cooperation3	0.34		0.73		
cooperation4	0.59		0.36		0.46
cooperation5	0.64				0.49
cooperation6	0.71				
conflict1					0.89
conflict2	0.72			0.33	0.37
conflict3	0.55	0.33		0.38	

In factor analysis, all the loadings which are above 0.30 are considered significant (Hair et al., p.113). In this analysis all the factor loadings were consistent with prespecified loadings except one item. In accordance with the results of the test, the item which was classified under conflict resolution factor was moved to cooperation for the rest of the analysis.

For each observation, factor values are calculated by taking the arithmetic mean of the variables measuring them. The descriptive statistics of the integration intensity measures are presented in Table 15.

Table 15. Integration Intensity Factors

	Factor				
	Commitment	Trust	Cooperation	Communication	Conflict Resolution
Sector					
Construction	4.83	4.71	4.63	4.65	4.56
Components	4.78	4.49	4.53	4.64	4.50
Mean	4.72	4.53	4.54	4.59	4.49
Standard Deviation	0.37	0.42	0.53	0.42	0.50

Integration Intensity Factors that Affect Relational Outcomes

The association between the integration intensity factors and relational outcome variables is tested with linear regression analysis. The objective of linear regression analysis is to use the independent variables whose values are known and to predict the single dependent variable selected by the researcher. (Hair et al., p.148)

The normality check for all 10 factors was executed with Kolmogorov-Smirnof and Shapiro-Wilks tests. Both tests calculate the level of significance for the differences from a normal distribution (Hair et al., p. 73). The results of both statistics rejected the null hypothesis of normal distribution for all the factors. To correct non-normality, logarithmic, inverse and square root transformations were applied. As none of them provided any improvement in the normality, the factors were left in their original form (Table 16).

Table 16. Normality Tests

	Kolmogorv-Smirnof Statistics			
	Before Transformation	(ln) Transformation	Inverse Transformation	Square Root Transformation
Quality	0.314	0.307	0.300	0.311
Delivery Reliability	0.252	0.266	0.278	0.259
Process Flexibility	0.198	0.209	0.217	0.204
Cost Leadership	0.220	0.251	0.281	0.235
Commitment	0.299	0.291	0.281	0.295
Trust	0.250	0.259	0.266	0.255
Cooperation	0.201	0.196	0.195	0.199
Communication	0.212	0.220	0.225	0.216
Conflict Resolution	0.187	0.172	0.166	0.180
Innovativeness	0.155	0.192	0.229	0.173

In all regression equations ordinary least square estimation with stepwise search was used. Stepwise search examines the contribution of each independent variable to the regression model. It estimates the final model by determining the incremental contribution of each variable (Hair et al., p. 178). A key issue in interpreting the regression variate is the correlation among independent variables. High correlation among independent items makes more difficult to separate the effects of individual variables on the model (Hair et al., 188). In all regression equations, multicollinearity was checked through tolerance values and condition indexes. The applied cutoff values are 0.10 for tolerance and 30 for condition index.

Control variables are extraneous factors, possibly affecting the experiment, that are kept constant so as to minimize their effects on the outcome. (Hair et al.). Three control variables which differentiate firms according to their size, ownership structure and industry, were added to all regression equations.

The aim of the first four regression equations was to test the first hypothesis which stated that “The integration intensity between suppliers and their industrial customers is positively associated with relational outcomes which are increased product quality, delivery reliability, process flexibility and cost leadership”.

Integration Intensity and Quality

The regression equation consisted of quality as dependent variable, the five integration intensity measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

The stepwise model estimated innovation and communication as statistically significant factors in explaining quality at 95% confidence level. The regression results are presented in Table 17.

Table 17. Integration Intensity and Quality

Model		Coefficients			Condition Index	
			innovativeness	communication		
R	0.524	β	0.277	0.196	1	1.000
R^2	0.274	t-value	5.444	2.261	2	13.209
Adjusted R^2	0.264	significance	0.000	0.025	3	27.195
Std. Error	0.398	tolerance	0.845	0.845		

$Y_1 = c + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \alpha_6X_6 + \beta_1\delta_1 + \beta_2\delta_2 + \beta_3\delta_3 + \varepsilon$

Integration Intensity and Delivery Reliability

The regression equation consisted of delivery reliability as dependent variable, the five integration intensity measures as independent variables, innovativeness as mediating variable and size, ownership, sector as control variables.

The stepwise model estimated innovation and communication as statistically significant factors in explaining delivery reliability at 95% confidence level. The regression results are presented in Table 18.

Table 18. Integration Intensity and Delivery Reliability

Model		Coefficients			Condition Index	
			innovativeness	communication		
R	0.423	β	0.171	0.190	1	1.000
R^2	0.179	t-value	3.629	2.376	2	13.209
Adjusted R^2	0.167	significance	0.000	0.019	3	27.195
Std. Error	0.368	tolerance	0.845	0.845		

$Y2 = c + \alpha1X1 + \alpha2X2 + \alpha3X3 + \alpha4X4 + \alpha5X5 + \alpha6X6 + \beta1\delta1 + \beta2\delta2 + \beta3\delta3 + \varepsilon$

Integration Intensity and Process Flexibility

The regression equation consisted of process flexibility as dependent variable, the five integration intensity measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

The stepwise model estimated innovation, conflict resolution and trust as statistically significant factors in explaining process flexibility at 95% confidence level. The regression results are presented in Table 19.

Table 19. Integration Intensity and Process Flexibility

Model		Coefficients				Condition Index	
			innovativeness	conflict	trust		
R	0.555	β	0.293	0.228	0.231	1	1.000
R^2	0.308	t-value	5.115	2.517	1.129	2	2.455
Adjusted R^2	0.293	significance	0.000	0.013	0.035	3	14.368
Std. Error	0.469	tolerance	0.933	0.763	0.765	4	25.539

$Y_3 = c + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \alpha_6 X_6 + \beta_1 \delta_1 + \beta_2 \delta_2 + \beta_3 \delta_3 + \varepsilon$

Integration Intensity and Cost Leadership

The regression equation consisted of cost leadership as dependent variable, the five integration intensity measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

$Y_4 = c + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \alpha_6X_6 + \beta_1\delta_1 + \beta_2\delta_2 + \beta_3\delta_3 + \varepsilon$

where Y_4 = Cost Leadership

The stepwise model estimated innovation, trust and size as statistically significant factors in explaining cost leadership at 95% confidence level. The regression results are presented in Table 20.

Table 20. Integration Intensity and Cost Leadership

Model		Coefficients				Condition Index	
			innovativeness	trust	size		
R	0.498	β	0.265	0.392	-0.115	1	1.000
R^2	0.248	t-value	4.374	3.813	-2.217	2	5.732
Adjusted R^2	0.231	significance	0.000	0.000	0.028	3	14.155
Std. Error	0.496	tolerance	0.925	0.972	0.951	4	29.815

$Y_4 = c + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \alpha_6X_6 + \beta_1\delta_1 + \beta_2\delta_2 + \beta_3\delta_3 + \varepsilon$

Innovativeness

Equation 5 aimed to discover the mediating role of innovativeness. For this purpose, the proportion of change in innovativeness explained by the independent integration intensity factors and by three control variables was measured.

$Y_5 = c + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \beta_1\delta_1 + \beta_2\delta_2 + \beta_3\delta_3 + \varepsilon$

where Y_5 = Innovativeness

The stepwise model estimated cooperation and communication as statistically significant factors in explaining process flexibility at 95% confidence level. The results are presented in Table 21.

Table 21. Integration Intensity and Innovativeness

Model		Coefficients			Condition Index	
			cooperation	communication		
R	0.431	β	0.337	0.370	1	1.000
R^2	0.186	t-value	2.312	2.018	2	20.780
Adjusted R^2	0.174	significance	0.022	0.046	3	29.947
Std. Error	0.650	tolerance	0.503	0.503		

$Y_5 = c + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \beta_1 \delta_1 + \beta_2 \delta_2 + \beta_3 \delta_3 + \varepsilon$

Findings

The summary of the findings of the first five regression equations that aim to identify the relationship between integration intensity and relational outcomes are presented in Table 22.

Table 22. Summary Table

	R^2	coefficients of independent variables								
		commitment	trust	cooperation	comunication	conflict	innovativeness	size	sector	ownership
dependent variables										
quality	27%				0.196		0.277			
delivery reliability	18%				0.190		0.171			
process flexibility	31%		0.231			0.228	0.293			
cost leadership	25%		0.392				0.265	-0.112		
innovativeness	19%			0.203	0.414					

*all coefficients are significant at 5% confidence level.

The strength of innovativeness as a mediating variable was further checked with hierarchical regression analysis. Hierarchical regression is used to evaluate the relationship between a set of independent variables and the dependent variable, controlling for or taking into account the impact of a different set of independent variables on the dependent variable. In hierarchical regression, the independent variables are entered into the analysis in a sequence of blocks or groups that may contain one or more variables. The null hypothesis for the addition of each block of variables to the analysis is that the change in R^2 (contribution to the explanation of the variance in the dependent variable) is zero. If the null hypothesis is rejected, then it indicates that the variables in block two had a relationship to the dependent variable, after controlling for the relationship of the block one variables to the dependent variable (Sharma et al., 1981). The results of the hierarchical regression analysis are presented at Table 23. The significant explanatory variables were identical to those of the linear regression model; furthermore the contribution of innovativeness to the explanatory power was significant for all regression equations at 99% confidence level.

Table 23. Hierarchical Regression (Integration Intensity)

dependent variable	block 1 independent variables	block 2 independent variables	change in R^2	change in F	Significance
quality	communication	communication, innovativeness	15%	29.636	0.000
delivery reliability	communication	communication, innovativeness	8%	13.167	0.000
process flexibility	trust,conflict	trust,conflict,innovativeness	13%	26.168	0.000
cost leadership	trust,size	trust,size,innovativeness	10%	19.128	0.000

The findings of the linear and hierarchical regression analysis are presented in Fig. 3.

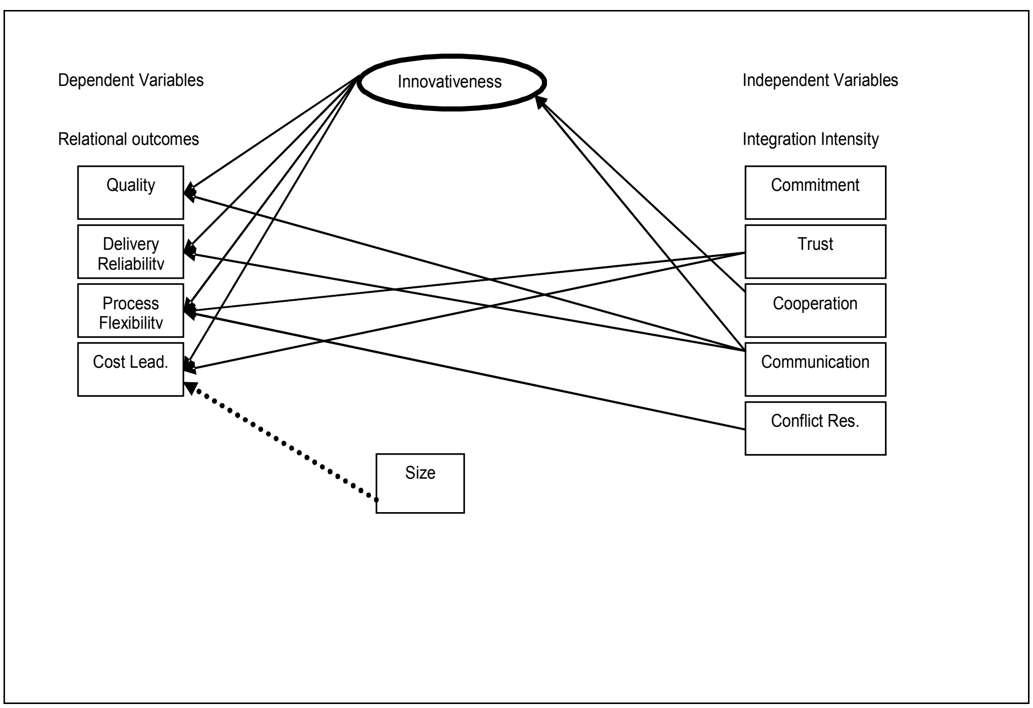


Fig. 3 Relational Outcomes Explained by the Intensity of the Integration

The analysis indicates a positive association between four of the five integration intensity factors and relational outcome variables either directly or through the mediation of innovativeness. The cooperation structure of the firms is positively associated with innovativeness, which in turn has a positive effect on all relational outcome variables. Communication, besides directly effecting quality and delivery reliability, improves all relational outcome variables through innovativeness. Trust is positively associated with process flexibility and cost leadership, and conflict resolution has a positive effect on process flexibility. The association between size and cost leadership is negative; smaller firms are found to be more cost effective which can be interpreted with the efficiency in the use and control of resources. The findings support Hypothesis 1 with the exception of the commitment factor.

The findings about the statistical significance of the factors of cooperation, communication, trust and conflict resolution techniques in determining integration intensity support the findings of Uzzi (1996), More & Spekman (1994) and Spekman et al. (1999). However, findings about commitment, contradict with the results of Mohr & Spekman (1994) and Morgan & Hunt (1994) where commitment was found to be a key variable determining partnership success. The identified positive association between integration intensity factors and relational outcome variables on the other hand, comply with the findings of Rozenweig et al. (2003) and Spekman et al. (1999).

Although the findings about the association between integration intensity and relational outcomes are a replication and confirmation of the previous studies, the main contribution of this study to the literature is the identification of the mediating role of innovativeness. Kasauf and Celuch (1997) found that firms with a high relationship orientation perceived faster technology change than firms with a low relationship orientation. This study added the innovativeness dimension to their findings and showed that firms that have a more effective communication and cooperation structure are more innovative and hence stronger in quality, delivery reliability, flexibility and cost leadership compared to those that have low communication and cooperation orientation.

The relational Outcome Factors that Affect Integration Intensity

The 67 companies in the sample had 142 integrated customers showing a mean of 2.12 relationships per firm which indicated the possibility of a two way relationship between the two sets of variables.

The aim of the next four regression equations was to test the reverse model, i.e. the second hypothesis which stated that “relational outcomes defined as product quality, delivery performance, process flexibility and cost efficiency are positively associated with the integration intensity between suppliers and their industrial customers”.

Relational Outcomes and Commitment

The regression equation consisted of commitment as dependent variable, the four relational outcome measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

The stepwise model estimated innovativeness as the single statistically significant factor in explaining commitment. The regression results are presented in Table 24.

Table 24. Relational Outcomes and Commitment

Model		Coefficients		Condition Index	
			innovativeness		
R	0.307	β	0.159	1	1.000
R^2	0.094	t-value	3.815	2	11.586
Adjusted R^2	0.088	significance	0.000		
Std. Error	0.354	tolerance	1.000		

$Y6 = c + \alpha1X1 + \alpha2X2 + \alpha3X3 + \alpha4X4 + \alpha5X5 + \beta1\delta1 + \beta2\delta2 + \beta3\delta3 + \varepsilon$

Relational Outcomes and Trust

The regression equation consisted of trust as dependent variable, the four relational outcome measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

The stepwise model estimated cost leadership, process flexibility and ownership as the significant factors in explaining trust. The regression results are presented in Table 25.

Table 25. Relational Outcomes and Trust

Model		Coefficients				Condition Index	
			cost leadership	process flexibility	ownership		
R	0.444	β	0.196	0.187	-0.162	1	1.000
R^2	0.197	t-value	3.040	2.854	-2.140	2	2.212
Adjusted R^2	0.180	significance	0.003	0.005	0.034	3	18.645
Std. Error	0.377	tolerance	0.757	0.751	0.959	4	20.895

$Y_7 = c + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \beta_1 \delta_1 + \beta_2 \delta_2 + \beta_3 \delta_3 + \varepsilon$

Relational Outcomes and Cooperation

The regression equation consisted of cooperation as dependent variable, the four relational outcome measures as independent variables, innovativeness as mediating variable and size, ownership, sector as control variables.

The stepwise model estimated innovativeness, process flexibility and cost leadership as the significant factors in explaining cooperation. The results are presented in Table 26.

Table 26. Relational Outcomes and Cooperation

Model		Coefficients				Condition Index	
			innovativeness	process flexibility	cost leadership		
R	0.493	β	0.182	0.195	0.160	1	1.000
R^2	0.243	t-value	2.288	2.272	1.981	2	15.146
Adjusted R^2	0.227	significance	0.005	0.025	0.050	3	20.386
Std. Error	0.466	tolerance	0.761	0.673	0.735	4	22.939

$Y_8 = c + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \beta_1 \delta_1 + \beta_2 \delta_2 + \beta_3 \delta_3 + \varepsilon$

Relational Outcomes and Communication

The regression equation consisted of communication as dependent variable, the four relational outcome measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

The stepwise model estimated innovativeness, process flexibility and cost leadership as the significant factors in explaining communication. The results are presented in Table 27.

Table 27. Relational Outcomes and Communication

Model		Coefficients				Condition Index	
			innovativeness	cost leadership	process flexibility		
R	0.492	β	0.137	0.152	0.140	1	1.000
R^2	0.242	t-value	2.739	2.360	2.049	2	15.146
Adjusted R^2	0.225	significance	0.007	0.020	0.042	3	20.386
Std. Error	0.370	tolerance	0.761	0.735	0.673	4	22.939

$Y_9 = c + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \alpha_4 X_4 + \alpha_5 X_5 + \beta_1 \delta_1 + \beta_2 \delta_2 + \beta_3 \delta_3 + \varepsilon$

Relational Outcomes and Conflict Resolution

The regression equation consisted of conflict resolution as dependent variable, the four relational outcome measures as independent variables, innovativeness as mediating variable, and size, ownership, sector as control variables.

The stepwise model estimated process flexibility as the single significant factor in explaining conflict resolution. The results are presented in Table 28.

Table 28. Relational Outcomes and Conflict Resolution

Model		Coefficients		Condition Index	
			process flexibility		
R	0.370	β	0.331	1	1.000
R^2	0.137	t-value	4.708	2	15.998
Adjusted R^2	0.131	significance	0.000		
Std. Error	0.465	tolerance	1.000		

$Y_{10} = c + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \alpha_5X_5 + \beta_1\delta_1 + \beta_2\delta_2 + \beta_3\delta_3 + \varepsilon$

Innovativeness

The equation aimed to discover the mediating role of innovativeness. On this purpose, proportion of change in innovativeness explained by the relational outcome variables and by three control variables was measured.

$Y_{11} = c + \alpha_1X_1 + \alpha_2X_2 + \alpha_3X_3 + \alpha_4X_4 + \beta_1\delta_1 + \beta_2\delta_2 + \beta_3\delta_3 + \varepsilon$

where Y_{11} = innovativeness

The stepwise model estimated quality and process flexibility as significant factors in explaining innovativeness. The results are presented in Table 29.

Table 29. Relational Outcomes and Innovativeness

Model		Coefficients			Condition Index	
			quality	process flexibility		
R	0.553	β	0.552	0.357	1	1.000
R^2	0.306	t-value	4.367	3.406	2	19.283
Adjusted R^2	0.296	significance	0.000	0.001	3	25.023
Std. Error	0.601	tolerance	0.746	0.746		

Y11 = c + α1X1 + α2X2 + α3X3 + α4X4 + β1δ1 + β2δ2 + β3δ3 + ε

Findings

The summary of the findings of the last six regression equations are presented in Table 30 and the findings of hierarchical regression analysis in Table 31.

Table 30. Summary Statistics

	R^2	coefficients of independent variables							
		quality	delivery reliability	process flexibility	cost leadership	innovativeness	size	sector	ownership
dependent variables									
commitment	9%					0.159			
trust	20%			0.187	0.196				-0.162
cooperation	24%			0.195	0.160	0.182			
communication	24%			0.140	0.152	0.137			
conflict	14%			0.331					
innovativeness	31%	0.552		0.357					

Table 31. Hierarchical Regression (Relational Outcomes)

dependent variable	block 1 independent variables	block 2 independent variables	change in R^2	change in F	Significance
commitment	none	innovativeness	9%	14.551	0.000
trust	flexibility,cost,ownership	flexibility,cost,ownership innovativeness	0%	0.090	0.765
cooperation	flexibility,cost	flexibility,cost,innovativeness	5%	8.338	0.005
communication	flexibility,cost	flexibility,cost,innovativeness	4%	7.503	0.007
conflict resolution	flexibility	flexibility,innovativeness	0%	0.639	0.425

Consistent with the findings of the linear regression analysis, change in R^2 was significant only for the factors of commitment, cooperation and communication and the resulting model is presented in Fig. 4.

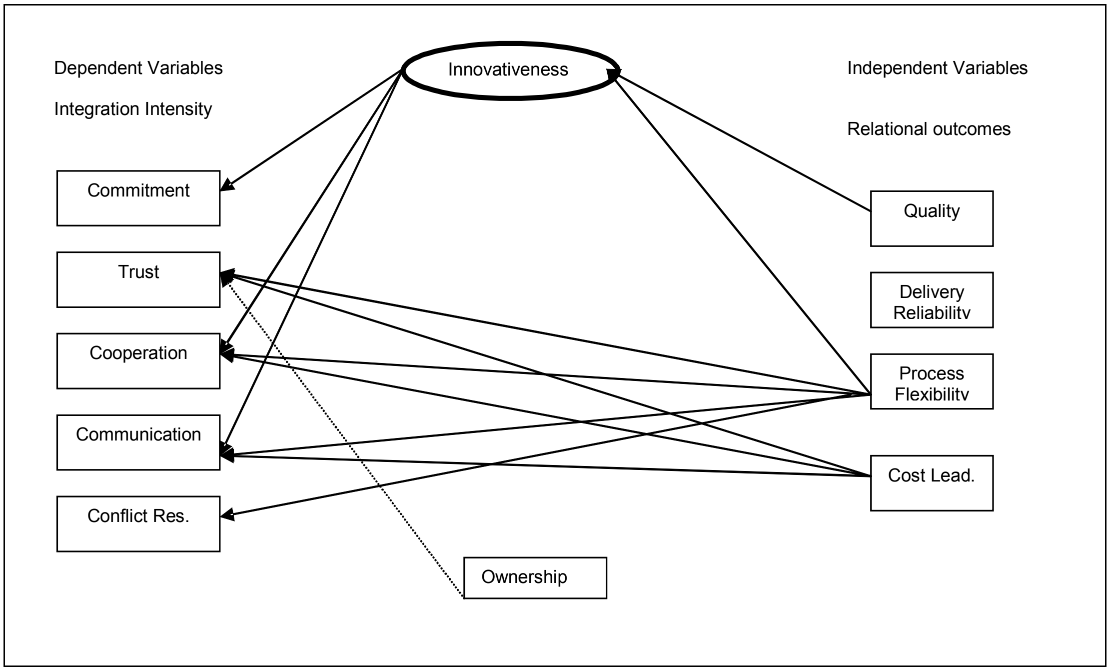


Fig. 4 Integration Intensity Explained by the Relational Outcomes

The analysis indicates a positive association between three of the four relational outcome variables and integration intensity factors either directly or through the mediation of innovativeness. The quality of the products is positively associated with innovativeness which in turn has a positive effect on all commitment, cooperation and communication. Process flexibility, besides directly effecting trust, communication, cooperation and conflict resolution improves commitment, cooperation and communication through innovativeness. Cost Leadership is positively associated with trust, communication, and cooperation. The association between ownership and trust is negative; local firms are found to be more trustworthy than firms with foreign capital. The findings support the second hypothesis for all variables except delivery reliability.

The findings of the study comply with both Anderson et al. (1989) and Choi & Hartley (1996) for the variables of quality, process flexibility and cost leaderships, but contradict with both for delivery reliability.

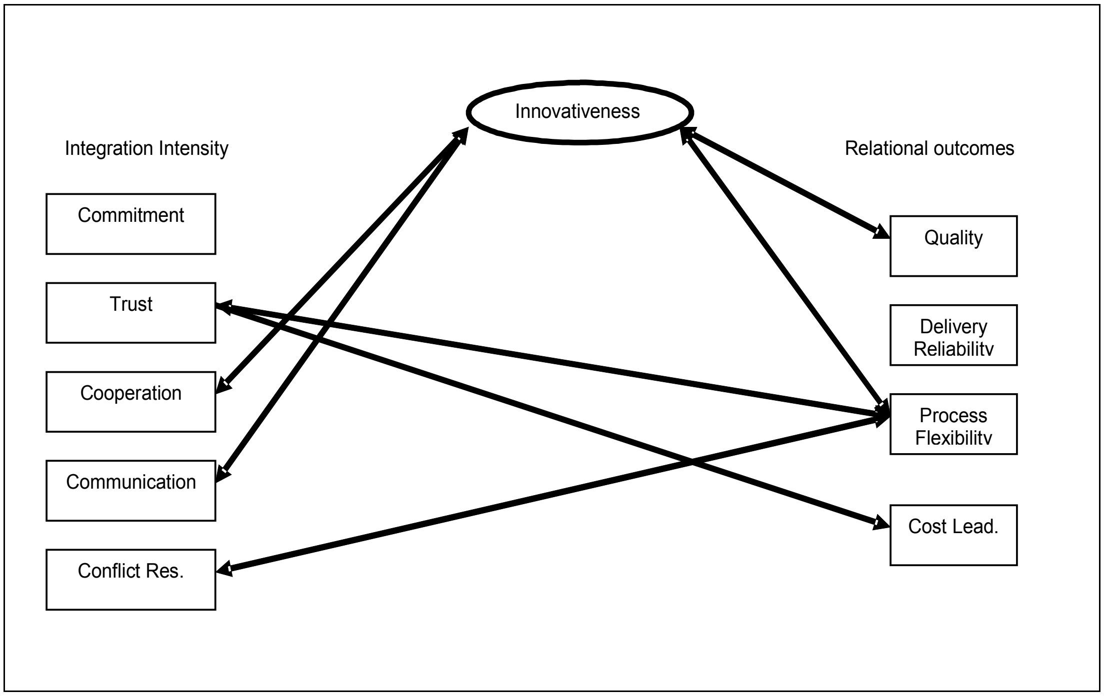


Fig. 5 Two-way Associations

Fig. 5 shows the two way associations among the two sets of variables. The two way model has several strategic implications for the supplying firms; first, innovativeness is an important attribute; once gained through effective cooperation and communication, it improves product quality and helps the firm to be more flexible in its operations which in turn open the way to new cooperative and communicative relationships; second, trustful relationships strengthen competitive advantage in the flexibility of processes and the effectiveness of cost management which in turn give birth to new trustful relationships; lastly flexibility in processes affects and in turn is affected positively by conflict resolution techniques.

In summary, an effective integrated relationship with a customer characterized by bilateral trust, communication, cooperation and joint conflict resolution, leads to improvements in the product quality, process flexibility and cost effectiveness of the supplying firm and once gained, these relational capabilities gave the way for subsequent integrated relationships through the reputation effect. This finding, which combines integration intensity surveys with studies about the supplier selection processes, is another important contribution of this study to the literature.

Effects of the Type of Relationships on Relational Outcome Measures

In the first part of the research it was found out that integration intensity factors being the unique characteristics of integrated relationships gave rise to substantial improvements in relational outcomes through the mediation of innovativeness. An important implication of this finding is that the firms that maintain integrated relationships with some or all of their customers, should perform better in relational outcomes relative to peers that transact only in an arm's length way. The purpose of this part of the study was to test the third hypothesis which stated that "A supplier that maintains integrated relationships with some or all of the customers, performs better in relational outcomes compared to those that transact only in an arm's length way

When the sample is divided into three groups with regard to relationship structure, the univariate statistics reveal that the worst performers are those maintaining a single arm's length relationship for all the relational outcome measures except delivery reliability. For delivery reliability, the worst performers are the suppliers maintaining a single integrated relationship. (Table 32)

Table 32. Univariate Differences (Three Groups)

Factor	Group	Frequency	Mean	Standard Deviation
Quality	integrated	60	4.645	0.429
	single-arm's length	39	4.488	0.566
	single-integrated	7	4.570	0.419
Delivery Reliability	integrated	60	4.601	0.392
	single-arm's length	39	4.479	0.476
	single-integrated	7	4.430	0.419
Process Flexibility	integrated	60	4.422	0.538
	single-arm's length	39	4.257	0.614
	single-integrated	7	4.716	0.356
Cost Leadership	integrated	60	4.092	0.600
	single-arm's length	39	3.885	0.673
	single-integrated	7	4.214	0.636
Innovativeness	integrated	60	4.183	0.651
	single-arm's length	39	3.846	0.718
	single-integrated	7	4.286	0.756

Of the 106 firms in the sample, 67 had an integrated relationship at least with one customer whereas the remaining 39 followed a single arm's length relationship strategy. The univariate differences among the two groups are presented in Table 33.

Table 33. Univariate Differences (Two Groups)

Factor	Group	Frequency	Mean	Standard Deviation	t-value	Significance
Quality	integrated	67	4.637	0.426		
	arm's length	39	4.488	0.566	1.537	0.127
Delivery Reliability	integrated	67	4.583	0.395		
	arm's length	39	4.479	0.476	1.205	0.231
Process Flexibility	integrated	67	4.453	0.528		
	arm's length	39	4.257	0.614	1.733	0.086
Cost Leadership	integrated	67	4.104	0.600		
	arm's length	39	3.885	0.673	1.739	0.085
Innovativeness	integrated	67	4.194	0.657		
	arm's length	39	3.846	0.718	2.541	0.013

Firms having at least one integrated relationship performed better in all variables, though the difference was statistically significant only for innovativeness at 5% confidence level and for process flexibility and cost leadership at 10% confidence level.

To assess multivariate differences, the logistic regression method is used. Logistic regression is the appropriate statistical technique when the dependent variable is categorical and the independent variables are metric. It involves deriving a variate, the linear combination of the two or more independent variables that discriminate best between a priori defined groups. Logistic regression has many analogies to ordinary least square regression: logistic coefficients correspond to beta coefficients in the logistic regression equation, and a pseudo R^2 statistic is available to summarize the strength of the relationship. (Hair et al., p.244)

The dependent variable was the relationship structure and was set equal to 0 for firms with integrated relationships and 1 otherwise. The independent variables were delivery reliability, process flexibility, cost leadership and innovativeness. Quality was left out of the analysis as it was highly correlated with innovativeness. The statistical results are presented in Table 34.

Table 34. Logistic Regression

Final Model		Goodness of Fit			Pseudo R-Square		Coefficients			Correct Classification	
			pearson	deviance				Chi-square	Significance		
2 log likelihood	88.451	Chi-square	82.566	77.336	Cox and Snell	28%	Delivery Reliability	9.951	0.191	Integrated	90%
Chi-square	35.080	Significance	0.034	0.077	Nagelkerke	39%	Process Flexibility	8.533	0.074	Arm's Length	67%
Significance	0.028				McFadden	25%	Cost Leadership	11.905	0.036	Overall	81%
							Innovativeness	14.880	0.011		

The multivariate statistics results are quite similar to univariate ones; innovativeness and cost leadership are significant discriminators at 95% confidence level and process flexibility at 90%. Logistic regression indicates that by analyzing the innovativeness, process flexibility and cost effectiveness of a company, the probability of correct inference of its relationship structure is 81%.

Both univariate and multivariate statistics supported hypothesis three. Firms having an integrated relationship with at least one customer are more innovative and perform better in all relational outcome measures than the firms transacting only in arm's length manner; the difference however is statistically significant only for innovativeness, process flexibility and cost leadership both univariately and multivariately.

Financial Performance and Relationship Strategy

The purpose of the last part of the analysis was to search for differences in financial performance between the firms that follow a single relationship strategy and those that prefer a portfolio of relationships approach by testing the fourth hypothesis which states that: “A supplier which maintains both integrated and arm’s length relations with its customers has higher financial performance compared to others that maintain only one of these relationships”.

The differences are analyzed with “analysis of variance”, which is statistics used to test for differences among two or more independent groups by partitioning the observed variance into components due to different explanatory variables (Sargent & Hodges, 1997).

Financial ratios were calculated for each firm, by computing the mean values for five years from 2003 to 2007.

Outliers are observations with unique characteristics identifiable as distinct from other observations. Mahalanobis distance is a measure of the distance in multidimensional space of each observation from the mean center of the observations (Hair et al., p. 64). One of the observations, which was found to be an outlier with respect to all variables, was deleted from the analysis.

The descriptive statistics with regard to the three control variables, which are size, sector and ownership structure are presented in Tables 35, 36 and 37.

Table 35. Financial Ratios with respect to Size

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	small	35	17%	0.127		
	medium	35	16%	0.125		
	large	35	22%	0.108	2.731	0.070
Return on Assets	small	35	8%	0.084		
	medium	35	9%	0.074		
	large	35	13%	0.085	4.069	0.020
Profit Margin	small	35	7%	0.076		
	medium	35	7%	0.073		
	large	35	14%	0.128	7.457	0.001
Sales Growth	small	35	59%	1.972		
	medium	35	29%	0.148		
	large	35	29%	0.129	0.789	0.457
Volatility of Return on Equity	small	35	0.106	0.069		
	medium	35	0.113	0.119		
	large	35	0.124	0.108	0.287	0.751
Equity Multiplier	small	35	2.680	1.453		
	medium	35	2.429	1.136		
	large	35	2.363	3.003	0.236	0.790
Asset Turnover	small	35	1.609	0.975		
	medium	35	1.732	1.075		
	large	35	1.433	0.929	0.798	0.453

Table 36. Financial Ratios with respect to Sector

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	component	66	18%	0.117		
	construction	39	20%	0.130	0.976	0.326
Return on Assets	component	66	9%	0.075		
	construction	39	12%	0.093	3.825	0.053
Profit Margin	component	66	7%	0.068		
	construction	39	13%	0.132	11.174	0.001
Sales Growth	component	66	27%	0.122		
	construction	39	60%	1.860	2.163	0.154
Volatility of Return on Equity	component	66	0.104	0.098		
	construction	39	0.132	0.101	1.863	0.175
Equity Multiplier	component	66	2.557	2.557		
	construction	39	2.377	2.377	0.194	0.660
Asset Turnover	component	66	1.510	0.567		
	construction	39	1.728	1.455	1.187	0.278

Table 37. Financial Ratios with respect to Ownership Structure

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	local	79	18%	0.121		
	foreign	26	19%	0.128	0.116	0.734
Return on Assets	local	79	9%	0.075		
	foreign	26	12%	0.104	1.665	0.200
Profit Margin	local	79	9%	0.094		
	foreign	26	10%	0.122	0.195	0.659
Sales Growth	local	79	44%	1.312		
	foreign	26	25%	0.149	0.549	0.460
Volatility of Return on Equity	local	79	0.111	0.089		
	foreign	26	0.124	0.132	0.318	0.574
Equity Multiplier	local	79	2.515	2.194		
	foreign	26	2.416	1.392	0.047	0.828
Asset Turnover	local	79	1.577	1.089		
	foreign	26	1.636	0.631	0.069	0.794

As can be noted from Table 35, in the years 2003-2007, large firms had a greater return than medium and small ones; the difference is significant for all three return ratios at 10% confidence level. Although the group differences are not statistically significant at 10% confidence level, small firms had a greater growth rate, relied more on debt, but had lower volatility in terms of return on equity in comparison to medium and large firms. Furthermore, the medium size group was the most efficient of all.

Firms supplying to the construction sector had a greater return on assets and larger profit margin than component suppliers. The construction sector suppliers also performed better in return on equity, had greater sales growth, relied less on debt and were more efficient than component suppliers but the differences are not statistically significant at 10% confidence level.

Finally, with respect to ownership structure both groups performed equally.

When the sample is divided into three groups with regard to relationship structure, the descriptive statistics revealed that for all three return variables the worst performers were the firms maintaining single integrated relationships and the best performers were those following a portfolio of relationships strategy. (Table 38)

Table 38. Financial Ratios with respect to Relationship Structure
(Three Groups)

Variable	Group	Frequency	Mean	Std.deviation
Return on Equity	portfolio	59	21%	0.115
	single-arm's length	39	16%	0.129
	single-integrated	7	11%	0.074
Return on Assets	portfolio	59	12%	0.080
	single-arm's length	39	9%	0.089
	single-integrated	7	5%	0.040
Profit Margin	portfolio	59	11%	0.101
	single-arm's length	39	8%	0.104
	single-integrated	7	3%	0.029
Sales Growth	portfolio	59	49%	1.517
	single-arm's length	39	26%	0.131
	single-integrated	7	30%	0.190
Volatility of Return on Equity	portfolio	59	0.116	0.105
	single-arm's length	39	0.117	0.101
	single-integrated	7	0.088	0.037
Equity Multiplier	portfolio	59	2.436	1.387
	single-arm's length	39	2.574	2.827
	single-integrated	7	2.480	1.191
Asset Turnover	portfolio	59	1.487	0.944
	single-arm's length	39	1.745	1.109
	single-integrated	7	1.618	0.660

Of the 106 firms in the sample, 60 had both integrated and arm's length relationships whereas the remaining 46 maintained a single relationship strategy, either arm's length or integrated. The mean differences among the two groups of firms are presented in Table 39.

Table 39. Financial Ratios with respect to Relationship Structure
(Two Groups)

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	portfolio	59	21%	0.115		
	single	46	15%	0.123	7.465	0.007
Return on Assets	portfolio	59	12%	0.080		
	single	46	8%	0.085	4.223	0.042
Profit Margin	portfolio	59	11%	0.101		
	single	46	7%	0.098	4.326	0.040
Sales Growth	portfolio	59	49%	1.517		
	single	46	27%	0.139	0.990	0.322
Volatility of Return on Equity	portfolio	59	0.116	0.105		
	single	46	0.113	0.095	0.024	0.876
Equity Multiplier	portfolio	59	2.436	1.387		
	single	46	2.560	2.635	0.096	0.757
Asset Turnover	portfolio	59	1.487	0.944		
	single	46	1.726	1.048	1.501	0.223

Firms pursuing different relationship structures with customers performed significantly better than those with a single relationship structure, for all return ratios at 5% confidence level. Even though the difference was not statistically significant, they also had greater sales growth but were less efficient than the second group.

When the above analysis is repeated for the three size groups separately, it is seen that the findings are relevant for small and medium size groups but not for large group (Tables 40, 41 and 42).

Table 40. Financial Ratios of Small Size Firms with respect to Relationship Structure

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	portfolio	25	22%	0.114		
	single	10	5%	0.058	19.611	0.000
Return on Assets	portfolio	25	11%	0.086		
	single	10	2%	0.025	9.531	0.004
Profit Margin	portfolio	25	9%	0.082		
	single	10	2%	0.021	7.008	0.012
Sales Growth	portfolio	25	76%	2.324		
	single	10	17%	0.102	0.638	0.430
Volatility of Return on Equity	portfolio	25	0.108	0.070		
	single	10	0.102	0.068	0.064	0.802
Equity Multiplier	portfolio	25	2.789	1.666		
	single	10	2.406	0.677	0.490	0.489
Asset Turnover	portfolio	25	1.648	1.120		
	single	10	1.513	0.481	0.134	0.716

Table 41. Financial Ratios of Medium Size Firms with respect to Relationship Structure

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	portfolio	18	21%	0.143		
	single	17	10%	0.066	9.217	0.005
Return on Assets	portfolio	18	12%	0.086		
	single	17	5%	0.039	8.116	0.007
Profit Margin	portfolio	18	10%	0.087		
	single	17	3%	0.025	9.738	0.004
Sales Growth	portfolio	18	32%	0.161		
	single	17	27%	0.133	1.003	0.324
Volatility of Return on Equity	portfolio	18	0.143	0.157		
	single	17	0.081	0.044	2.433	0.128
Equity Multiplier	portfolio	18	2.436	1.233		
	single	17	2.422	1.061	0.001	0.972
Asset Turnover	portfolio	18	1.496	0.807		
	single	17	1.982	1.279	1.834	0.185

Table 42. Financial Ratios of Large Size Firms with respect to Relationship Structure

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Return on Equity	portfolio	16	20%	0.084		
	single	19	24%	0.123	1.632	0.210
Return on Assets	portfolio	16	12%	0.067		
	single	19	14%	0.099	0.327	0.571
Profit Margin	portfolio	16	16%	0.129		
	single	19	13%	0.128	0.411	0.526
Sales Growth	portfolio	16	26%	0.111		
	single	19	32%	0.140	1.654	0.207
Volatility of Return on Equity	portfolio	16	0.098	0.076		
	single	19	0.147	0.127	1.858	0.182
Equity Multiplier	portfolio	16	1.885	0.858		
	single	19	2.764	4.006	0.738	0.396
Asset Turnover	portfolio	16	1.226	0.764		
	single	19	1.608	1.036	1.495	0.230

The large size firms maintaining a single relationship had greater return on equity, larger sales growth and were more efficient but more risky than the large size firms having a portfolio of relationships with their customers. None of the differences however were statistically significant at 10% confidence level.

With regard to gross value added, the values calculated by the İstanbul Chamber of Industry were used. Due to data restrictions, only 67 out of 106 firms were included in the analysis. Of 67 firms, 37 had a portfolio of relationships and the remaining 30 had a single arm’s length relationship. The second group had greater value added, but the difference was not statistically significant. (Table 43)

Table 43. Gross Value Added

Variable	Group	Frequency	Mean	Std.deviation	f-value	Significance
Gross Value Added	portfolio	37	52,767,868	8.190		
	arm's length	30	59,905,389	6.719	0.147	0.702

The results of the financial performance analysis, supported hypothesis four only partially. The main finding was that for the overall sample the firms following a portfolio of relationships approach had greater return than those with single relationship structure; but in terms of efficiency, growth, risk and value added the two groups did not exhibit any statistically significant difference. With regard to return, the findings are consistent with Gadde & Snehota's (2000) argument stating that given the costs and benefits, the most efficient strategy for suppliers is to follow not a single but a portfolio of customer relationships characterized by different degrees of involvement. The findings are also in line with Uzzi (1996) who found that the positive effect of embeddedness reaches a threshold after which point it reverses itself.

The contribution of this part of the study to the existing literature came from the identification of the impact of firm size on financial performance for firms that had a single relationship and others that had a portfolio of relationships. For the overall sample, the firms that followed a portfolio of relationships approach had greater return than those that maintained only a single relationship structure; however, when the analysis was repeated by dividing the sample into three size groups, it was seen out that the return difference was valid only for small and medium size groups. For large size suppliers, the effect of the relationship structure in financial return was not significant.

In summary, the firms maintaining at least one integrated relationship were more innovative and had better performance in all relational outcome measures; but for small and medium scale firms, these strengths were reflected to financial return ratios only when integrated relationships with one or more customers were accompanied by arm's length relationships with other customers; large size firms, on the other hand, had greater return than small and medium scale firms regardless of the relationship structure they maintained. There were no statistically significant differences between the three groups for efficiency, growth, risk and value added ratios.

CHAPTER 7: CONCLUSION

The purpose of this study was to examine the nature and the consequences of the relationship between suppliers and their industrial buyers and to search for the effect of different types of relationships on suppliers' financial performance.

The literature about the relationship structure of the firms evolved around two streams of thought. The first, neoclassical economic theory, sustained that the economic system worked itself and needed no central control or survey and so the relationships should be of pure arm's length type and impersonal. The second, network theory, had its basis on relational exchanges which emerged after the fast development in information technologies that led to the quick accumulation and transfer of knowledge which shortened product life cycle and eroded the information advantage of integrated structures. Consequently, core firms started to focus on their main activities and strengthened their relations with suppliers by narrowing their supply base, making longer arrangements, demanding more technological contribution and employing just in time delivery processes to cut costs and to speed adaptation.

Though conventional arm's length relations and integrated ties are viewed as the two ends of the spectrum, each has its own benefits and costs. High negotiating and contracting costs make the traditional market relationships efficient only in the case of full competition where transactions are based on monetary issues and disputes are settled legally. Integrated type of relationships, on the other hand, are highly feasible in the utilization of intangible assets like knowledge and technological innovation, but given the high costs of coordination, adaptation and interaction, are useful only when the resources are variable and specific and the environment is uncertain. Given these costs and benefits, the most efficient strategy for firms is to follow not a single but a portfolio of customer relationships characterized by different degrees of involvement.

This study is based on the premise that integrated types of relationships have some unique characteristics that differentiate them from traditional business relationships. The strength of these unique features determines the intensity of the relationship and creates some relational outcomes that enrich firms' competitive advantage in the market. Innovativeness however is an important attribute for the firms, as it affects both the intensity of the relationship and the magnitude of the relational outcomes achieved. Furthermore, innovativeness, together with the competitive advantages gained through improved relational outcomes, leads to new customers and so to new integrated relationships through the reputation effect. All these positive effects of integrated relationships however, revert after a certain threshold, so the financial performance is maximized when firms maintain a portfolio of relationships strategy.

A detailed literature survey revealed commitment, trust, cooperation, communication and conflict resolution as the most comprehensive factors measuring integration intensity. Product quality, delivery reliability, process flexibility and cost leadership were used to measure relational outcomes. Research and development budget, and new product development speed in comparison to competitors were used as proxies for innovativeness.

The integration intensity, relational outcome and innovativeness factors were measured by a single questionnaire of which was checked for reliability after the pilot study conducted on a sample of nine firms.

To measure financial performance, a set of ratios measuring return, growth, risk, efficiency and value added were used. Return was measured with return on equity, return on assets and profit margin; sales growth was used as a proxy for growth and asset turnover for efficiency and finally risk was measured with volatility of return on equity and leverage ratio. The mean financial ratios were computed by using financial data from the database of the Istanbul Chamber of Industry for the years 2003-2007.

The model was tested on a sample of 106 firms supplying automotive, electronics, white goods and construction industries. The total number of integrated relationships maintained by 67 firms who had at least one integrated customer was 142.

The integration intensity factors were rechecked with exploratory factor analysis. The analysis correctly loaded 16 of 17 items. The factor loading of the misclassified item was corrected in accordance with the analysis results.

The association between integration intensity factors and relational outcome variables was tested with multiple regression analysis by setting relational outcome factors as dependent and integration intensity factors as independent variables. The mediating role of innovativeness was analyzed with hierarchical regression analysis. The analysis indicated a positive association between four of five integration intensity factors which are cooperation, trust communication and joint conflict resolution and all relational outcome variables either directly or through the mediation of innovativeness. The findings supported the first hypothesis with the exception of the factor of commitment.

The possible reverse association between the variables was tested with linear regression analysis by setting integration intensity factors as dependent and relational outcome measures as independent variables. The analysis indicated a positive association between three of four relational outcome variables which are product quality, process flexibility and cost leadership and all integration intensity factors either directly or through the mediation of innovativeness. The findings supported the second hypothesis with the exception of the variable delivery reliability.

The findings as a whole implied a two way association between four of the five integration factors and three of the four relational outcome variables through the mediation of innovativeness. The two way model has several strategic implications for the supplying firms; first, innovativeness once gained through effective cooperation and communication, improves product quality and helps the firm to be more flexible in its operations which in turn enables new cooperative and communicative relationships; second, trustful relationships strengthen competitive advantage in the flexibility of processes and effectiveness of cost management which in turn give birth to new trustful relationships; lastly flexibility in processes effects and in turn is effected positively by conflict resolution techniques.

An effective integrated relationship with a customer, characterized by bilateral trust, communication, cooperation and joint conflict resolution leads to improvements in the product quality, process flexibility and cost effectiveness of the supplying firm and once gained, these relational capabilities give the way to subsequent integrated relationships through reputation effect.

At firm level, it was found that 67 of 106 firms having integrated relationships at least with one customer were more innovative and performed better than those having only arm's length relationships for all relational outcome variables, but the difference was statistically significant only for the factors of innovativeness, process flexibility and cost leadership at 10% confidence level. Logistic regression analysis confirmed the discriminatory power of the same variables at multivariate level.

Of the 106 firms in the sample, 60 had both integrated and arm's length relationships whereas the remaining 46 maintained a single either arm's length or integrated relationship strategy. The results of the financial performance analysis supported hypothesis three, only partially. The main finding was that for the overall sample, the firms following a portfolio of relationships approach performed better than those with a single relationship structure for all return measures; but in terms of efficiency, growth, risk and value added, the two groups did not exhibit any statistically significant difference. The suppliers which had an integrated relationship at least with one customer were more innovative and performed better in all relational capabilities than those that did not have any; still, they were able to exploit these strategic capabilities by obtaining larger financial returns only when they added arm’s length contacts to their relationship portfolio. These relational capabilities however, did not have a significant effect on firms’ growth potential, riskiness, efficiency and contribution to the national economy. When the analysis was repeated by dividing the sample into three size groups however, it was found that the return difference was valid only for small and medium size groups. For large suppliers, the effect of relationship structure on financial return was not significant.

This study has several important contributions to the existing literature.

The network approach is characterized by its detailed, multidisciplinary description of the behavior of companies in a market and by its emphasis on the relations of these companies with other companies. In the previous literature, different aspects of integrated relationships were analyzed by the disciplines of relationship marketing, supply chain management, economics and finance. This study, by combining these different perspectives, attempted to give a complete picture of the phenomenon.

Another important contribution is the finding on the mediating role of innovativeness. Innovativeness, by playing a key mediating role between two antecedents, namely communication and cooperation, and five outcomes, namely product quality, delivery reliability, process flexibility and cost leadership, contributes significantly to the competitive strength of the suppliers. Moreover, the innovativeness structure of the firms with at least one integrated customer is significantly higher than those transacting only in an arms' length way. Hence, integration intensity factors which are unique to integrated relationships increase the innovativeness capability and consequently relational performance of suppliers. All these findings show that networks create a potential for the learning and dissemination of information and offer a highly feasible means of utilizing intangible assets like knowledge and technology and these characteristics set integrated relationships apart from arms' length transactions.

The previous empirical studies searching for the association between integration intensity and business outcomes ignored the possibility of a two way relationship between the two sets of variables. Still, studies on supplier selection processes identified the relational outcome measures which are quality, delivery reliability and cost performance as the most important factors for core industries in selecting their suppliers. There exists a positive association between integration intensity factors and relational outcome variables and moreover the competitive advantage once gained through improvements in relational outcome measures, creates reputation in the market and attracts the attention of other core firms that seek for integrated suppliers. As a result the relationship between the intensity of integration and relational outcomes is two way: an effective integrated relationship with a customer leads to improvements in relational outcomes and once gained, these competitive strengths result in new integrated customers.

The findings on the impact of firm size on financial performance for firms that have a single relationship and others that have a portfolio of relationships is another contribution of this study to the literature. For the overall sample, the firms that followed a portfolio of relationships approach had greater return than those that maintained only a single relationship structure; however, when the sample was divided into three size groups, it was found that the effect of relationship structure on financial return was not significant for large suppliers which can be interpreted with the power structure. Market share and size are important sources of power; hence large firms have the possibility to collect the fruits of their power regardless of the relationship structure they maintain.

The study has several important limitations. Due to financial data restrictions, the sample was selected from the Istanbul Chamber of Industry's 1,000 biggest firms list; consequently, small firms (with sales less than 30,000,000 TL) were not included in the analysis, which was an important drawback. Another limitation was the unavailability of financial statements which narrowed the scope and variability of the financial analysis.

Technology which is an important source of power is composed of product quality and innovativeness. This study emphasizes the importance of innovativeness emerging from integrated relationships; still, the extent of the contribution of core firms on suppliers' innovativeness remains as an open question to be answered in future studies.

APPENDIX A

QUESTIONNAIRE

Company name :

Total number of employees :

Ownership structure

Private (local capital) : %
Private (foreign capital) : %
Government : %

Your title :

Length of employment with this company:

1- Below are listed some of the factors that determine a company's competitive strength in the market. Please indicate your company's strength in comparison to competitors.

	With respect to Competitors				
	Very low	Low	Medium	High	Leader
a) Conformance quality	O	O	O	O	O
b) Product reliability	O	O	O	O	O
c) Product durability	O	O	O	O	O
d) Delivery reliability	O	O	O	O	O
e) Delivery speed	O	O	O	O	O
f) Ability to handle customer complaints rapidly	O	O	O	O	O
g) Ability to manufacture broad product mix	O	O	O	O	O
h) Ability to handle customer orders promptly	O	O	O	O	O
ı) Ability to rapidly	O	O	O	O	O

change product mix

j) Ability to offer lower price than customers O O O O O

k) Ability to O O O O O
manufacture at lower costs than competitors

l) R & D budget (TL/year) O O O O O

m) New product O O O O O
development rate

2- Do you have any integrated relationships with core industry firms?

a) Yes b) no

Please do not fill the next pages if your answer to the last question is "NO". Thank you for your interest.

If your answer to the last question is "YES", please answer the following questions for each of your integrated customers separately. (Maximum 3). To protect confidentiality, the customer titles are not required.

Please answer the questions by marking with (X) the answer that best describes your relationship with that customer.

Thank you for your interest.

Customer A

Share in your total sales %:.......... Length of the relationship (years):….

1. We consider our current collaboration with this customer as part of a long term relationship.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

2. We consider this customer as trustworthy.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

3. Our customer takes into consideration our advice and counsels.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

4. We and our customer share timely and accurate information.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

5. We and our customer work together to solve problems.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

6. Our customer is reliable in payments.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

7. We believe that our customer handles information from us confidentially.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

8. We and our customers are jointly responsible for making sure that the tasks are completed.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

9. We make frequent face to face meetings with our customer.
   ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

10. We and our customer treat problems that arise as joint rather than individual responsibilities.
    ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

11. Our customer makes an effort to maintain a close relationship with us.
    ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

12. Our customer does not make decisions that might be damaging to us.
    ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

13. We and our customer plan our business relationship together.
    ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

14. We make every effort to help our customer when unexpected situations emerge.
    ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

15. Our customer keeps us informed about the events or changes that may affect us.
    ( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

16. We and our customer consider arising conflicts as part of our joint relationship and believe that they will contribute to our relationship**.**

( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

17. Our customer makes an effort to help us during emergencies.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

18. Please evaluate the importance of the factors listed below in the continuity of your relationship with this customer. (1=not important 5=very important)

A. Communication : ……………..

B. Cooperation : ……………..

C. Trust : ……………..

D. Commitment : ………………

E. Joint problem solving : ………………

19. How did your relationship with this customer start ?

A. Through the customer initiative

B. Through your initiative

C. With the reference of another customer

D. With third party reference

E. Through industrial fairs

F. Other (Please indicate)...

Customer B

Share in your total sales %:.......... Length of the relationship (years):….

1.We consider our current collaboration with this customer as part of a long term relationship.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

2.We consider this customer as trustworthy.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

3.Our customer takes into consideration our advice and counsels.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

4.We and our customer share timely and accurate information.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

5.We and our customer work together to solve problems.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

6.Our customer is reliable in payments.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

7.We believe that our customer handles information from us confidentially.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

8.We and our customers are jointly responsible for making sure that the tasks are completed.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

9.We make frequent face to face meetings with our customer.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

10.We and our customer treat problems that arise as joint rather than individual responsibilities.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

11.Our customer makes an effort to maintain a close relationship with us.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

12.Our customer does not make decisions that might be damaging to us.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

13.We and our customer plan our business relationship together.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

14.We make every effort to help our customer when unexpected situations emerge.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

15.Our customer keeps us informed about the events or changes that may affect us.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

16.We and our customer consider arising conflicts as part of our joint relationship and believe that they will contribute to our relationship.

( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

17.Our customer makes an effort to help us during emergencies.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

18.Please evaluate the importance of the factors listed below in the continuity of your relationship with this customer. (1=not important 5=very important)

F. Communication : ……………..

G. Cooperation : ……………..

H. Trust : ……………..

I. Commitment : ………………

J. Joint problem solving : ………………

19.How did your relationship with this customer start ?

G. Through the customer initiative

H. Through your initiative

I. With the reference of another customer

J. With third party reference

K. Through industrial fairs

L. Other (Please indicate)..

Customer C

Share in your total sales %:.......... Length of the relationship (years):….

1.We consider our current collaboration with this customer as part of a long term relationship.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

2.We consider this customer as trustworthy.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

3.Our customer takes into consideration our advice and counsels.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

4.We and our customer share timely and accurate information.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

5.We and our customer work together to solve problems.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

6.Our customer is reliable in payments.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

7.We believe that our customer handles information from us confidentially.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

8.We and our customers are jointly responsible for making sure that the tasks are completed.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

9.We make frequent face to face meetings with our customer.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

10.We and our customer treat problems that arise as joint rather than individual responsibilities.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

11.Our customer makes an effort to maintain a close relationship with us.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

12.Our customer does not make decisions that might be damaging to us.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

13.We and our customer plan our business relationship together.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

14.We make every effort to help our customer when unexpected situations emerge.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

15.Our customer keeps us informed about the events or changes that may affect us.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

16.We and our customer consider arising conflicts as part of our joint relationship and believe that they will contribute to our relationship.

( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

17.Our customer makes an effort to help us during emergencies.
( )strongly disagree ( )disagree ( )neither agree nor disagree ( )agree ( )strongly agree

18.Please evaluate the importance of the factors listed below in the continuity of your relationship with this customer. (1=not important 5=very important)

K. Communication : ……………..
L. Cooperation : ……………..
M. Trust : ……………..
N. Commitment : ………………
O. Joint problem solving : ………………

19.How did your relationship with this customer start ?

M. Through the customer initiative
N. Through your initiative
O. With the reference of another customer
P. With third party reference
Q. Through industrial fairs
R. Other (Please indicate)...

APPENDIX B

ANKET

Firma ünvanı :

Firmanın toplam çalışan sayısı :

Firmanın ortaklık yapısı

Özel sektör (ana sanayi) : %
Özel sektör (diğer) : %
Yabancı sermaye : %
Kamu sektörü : %

Firmadaki pozisyonunuz :

Bu firmadaki toplam çalışma süreniz :

1- Aşağıda, bir şirketin içinde bulunduğu pazardaki rekabet gücünü gösteren bazı faktörler sıralanmıştır. Her faktör için rakiplerinizi gözönüne alarak, <u>şirketinizin</u> sektör içindeki rekabet gücünü belirtiniz.

	Rakiplere Kıyasla				
	çok düşük	düşük	orta	yüksek	lider
a) ürün kalitesi	O	O	O	O	O
b) ürün güvenilirliği	O	O	O	O	O
c) ürün ömrü	O	O	O	O	O
d) teslimat güvenilirliği	O	O	O	O	O
e) teslimat hızı	O	O	O	O	O
f) müşteri şikayetlerine cevap verme hızı	O	O	O	O	O
g) ürün çeşitliliği	O	O	O	O	O
h) müşteri taleplerine cevap verme süresi	O	O	O	O	O
ı) üretim hacmini değiştirme hızı	O	O	O	O	O
j) ürün satış fiyatı	O	O	O	O	O
k) üretim maliyeti	O	O	O	O	O

l) AR-GE bütçesi O O O O
O
(ytl/ yıl)

m) yeni ürün geliştirme hızı O O O O O

2- Ana sanayi firmaları içinde, entegrasyon içinde çalıştığınız müşterileriniz var mıdır?

a)var b) yok

Eğer son soruya yanıtınız “yok” ise, diğer sayfaları yanıtlamayınız.Göstediğiniz ilgi için teşekkür ederim.

Eğer son soruya yanıtınız “var” ise lütfen aşağıdaki soruları entegrasyon içinde çalıştığınız ana sanayi müşterileriniz (en fazla 3) için ayrı ayrı yanıtlayınız. Gizliliği korumak adına müşterilerin ünvanları sorulmamaktadır. Müşteriler A,B,C olarak sıralanmış, ve her bir müşteri için ayrı anket formu düzenlenmiştir.

Anket formundaki sorulara müşteriniz ile aranızdaki ilişkiyi en iyi ifade eden seçeneği (X) ile işaretleyerek yanıt veriniz.

Hassasiyetiniz ve gösterdiğiniz ilgi için teşekkür ederim.

Müşteri A Toplam Cironuz İçindeki Payı: %......... Toplam ÇalışmaSüreniz: ……….Yıl

1. Müşterimizle aramızdaki ilişkiyi geliştirmek ve uzun yıllar boyunca korumak şirketimiz için önemli hedeflerden bir tanesidir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

2. Müşterimiz dürüst ve güvenilirdir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

3. Müşterimiz bizim öneri ve tekliflerimizi dikkate alır.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

4. Müşterimizle aramızda doğru ve tam zamanlı bir bilgi alışverişi bulunmaktadır.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

5. Müşterimiz ile oluşan anlaşmazlıkları karşılıklı görüşme yoluyla çözeriz.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

6. Müşterimiz ödeme konusunda bize verdiği taahhütleri yerine getirir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

7. İşlerin zamanında ve tam olarak bitirilmesi sorumluluğunu müşterimizle paylaşırız.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

8. Müşterimizle sık sık yüzyüze görüşmeler yaparız.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

9. Oluşan hataların sorumluluğunun ortak olduğuna inanırız.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

10. Müşterimiz bizimle olan iş ilişkisini sürdürmeye önem vermektedir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

11. Müşterimiz önemli kararlar alırken şirketimizin çıkarlarını da gözetir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

12. İş ilişkimizi ilgilendiren konularda müşterimizle birlikte karar alırız.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

13. Müşterimize, yardıma ihtiyaç duyduğu her zaman, koşullar ne olursa olsun destek veriririz.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

14. Müşterimiz bizi yeni gelişmelerle (ürün, proses,…) ilgili bilgilendirir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

15. Müşterimiz ile aramızda oluşan fikir ayrılıklarını birlikte çalışmanın bir parçası olarak görür ve bu fikir ayrılıklarının her iki tarafa da katkı sağlayacağına inanırız.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

16. İşimizle ilgili bir problemle karşı karşıya kaldığımızda müşterimiz bize koşulsuz destek verir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

17. Aşağıda sıralanmış olan etmenleri müşterinizle olan iş ilişkinizin sağlıklı olarak yürümesini sağlamaları açısından puan vererek değerlendiriniz.(1=en az önemli 5=en önemli)

A. Bilgi Alışverişi : ……………..
B. İşbirliği : ……………..
C. Güven : ……………..
D. İş ilişkisine olan bağlılık : ………………
E. Birlikte problem çözme : ………………

18. Bu müşteri ile ilk iş ilişkiniz nasıl başladı?

A. Müşterinin sizi bulup teklif getirmesi ile
B. Sizin müşteriyi bulup teklif götürmeniz ile
C. Bir başka müşterininin referansı ile
D. Ortak bir tanıdığın referansı ile
E. Fuarlar vasıtası ile
F. Diğer (Lütfen belirtiniz)..

Müşteri B   Toplam Cironuz İçindeki Payı: %.........   Toplam ÇalışmaSüreniz: ……….Yıl

1. Müşterimizle aramızdaki ilişkiyi geliştirmek ve uzun yıllar boyunca korumak şirketimiz için önemli hedeflerden bir tanesidir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

2. Müşterimiz dürüst ve güvenilirdir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

3. Müşterimiz bizim öneri ve tekliflerimizi dikkate alır.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

4. Müşterimizle aramızda doğru ve tam zamanlı bir bilgi alışverişi bulunmaktadır.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

5. Müşterimiz ile oluşan anlaşmazlıkları karşılıklı görüşme yoluyla çözeriz.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

6. Müşterimiz ödeme konusunda bize verdiği taahhütleri yerine getirir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

7. İşlerin zamanında ve tam olarak bitirilmesi sorumluluğunu müşterimizle paylaşırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

8. Müşterimizle sık sık yüzyüze görüşmeler yaparız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

9. Oluşan hataların sorumluluğunun ortak olduğuna inanırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

10. Müşterimiz bizimle olan iş ilişkisini sürdürmeye önem vermektedir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

11. Müşterimiz önemli kararlar alırken şirketimizin çıkarlarını da gözetir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

12. İş ilişkimizi ilgilendiren konularda müşterimizle birlikte karar alırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

13. Müşterimize, yardıma ihtiyaç duyduğu her zaman, koşullar ne olursa olsun destek veririz.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

14. Müşterimiz bizi yeni gelişmelerle (ürün, proses,…) ilgili bilgilendirir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

15. Müşterimiz ile aramızda oluşan fikir ayrılıklarını birlikte çalışmanın bir parçası olarak görür ve bu fikir ayrılıklarının her iki tarafa da katkı sağlayacağına inanırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

16. İşimizle ilgili bir problemle karşı karşıya kaldığımızda müşterimiz bize koşulsuz destek

verir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

17. Aşağıda sıralanmış olan etmenleri müşterinizle olan iş ilişkinizin sağlıklı olarak yürümesini sağlamaları açısından puan vererek değerlendiriniz.(1=en az önemli 5=en önemli)

A. Bilgi Alışverişi : ……………..
B. İşbirliği : ……………..
C. Güven : ……………..
D. İş ilişkisine olan bağlılık : ………………
E. Birlikte problem çözme : ………………

18. Bu müşteri ile ilk iş ilişkiniz nasıl başladı?

A. Müşterinin sizi bulup teklif getirmesi ile
B. Sizin müşteriyi bulup teklif götürmeniz ile
C. Bir başka müşterininin referansı ile
D. Ortak bir tanıdığın referansı ile
E. Fuarlar vasıtası ile
F. Diğer (Lütfen belirtiniz)...

Müşteri C   Toplam Cironuz içindeki payı: %.........   Toplam Çalışma Süreniz: ……….Yıl

1. Müşterimizle aramızdaki ilişkiyi geliştirmek ve uzun yıllar boyunca korumak şirketimiz için önemli hedeflerden bir tanesidir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

2. Müşterimiz dürüst ve güvenilirdir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

3. Müşterimiz bizim öneri ve tekliflerimizi dikkate alır.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

4. Müşterimizle aramızda doğru ve tam zamanlı bir bilgi alışverişi bulunmaktadır.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

5. Müşterimiz ile oluşan anlaşmazlıkları karşılıklı görüşme yoluyla çözeriz.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

6. Müşterimiz ödeme konusunda bize verdiği taahhütleri yerine getirir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

7. İşlerin zamanında ve tam olarak bitirilmesi sorumluluğunu müşterimizle paylaşırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

8. Müşterimizle sık sık yüzyüze görüşmeler yaparız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

9. Oluşan hataların sorumluluğunun ortak olduğuna inanırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

10. Müşterimiz bizimle olan iş ilişkisini sürdürmeye önem vermektedir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

11. Müşterimiz önemli kararlar alırken şirketimizin çıkarlarını da gözetir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

12. İş ilişkimizi ilgilendiren konularda müşterimizle birlikte karar alırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

13. Müşterimize, yardıma ihtiyaç duyduğu her zaman, koşullar ne olursa olsun destek veririz.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

14. Müşterimiz bizi yeni gelişmelerle (ürün, proses,…) ilgili bilgilendirir.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

15. Müşterimiz ile aramızda oluşan fikir ayrılıklarını birlikte çalışmanın bir parçası olarak görür ve bu fikir ayrılıklarının her iki tarafa da katkı sağlayacağına inanırız.
( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

16. İşimizle ilgili bir problemle karşı karşıya kaldığımızda müşterimiz bize koşulsuz destek verir.

( )kesinlikle katılmıyorum ( )katılmıyorum ( )fikrim yok ( )katılıyorum ( )kesinlikle katılıyorum

17. Aşağıda sıralanmış olan etmenleri müşterinizle olan iş ilişkinizin sağlıklı olarak yürümesini sağlamaları açısından puan vererek değerlendiriniz.(1=en az önemli 5=en önemli)

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D. Ortak bir tanıdığın referansı ile
E. Fuarlar vasıtası ile
F. Diğer (Lütfen belirtiniz)..

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