# ENTREPRENEURIAL TEAM CHARACTERISTICS, ENVIRONMENTAL SCANNING AND NETWORKING: IMPACT ON ORGANIZATIONAL INNOVATIVENESS IN SMEs

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## ABSTRACT

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The main purpose of the present study was to examine the effects of entrepreneurial team demographics, environmental scanning and networking on innovativeness. For this purpose, small and medium enterprises in Bursa region were chosen.

A total of 74 general managers/owners filled out the questionnaire. Information about company, team members and firms' environmental scanning, innovativeness and networking activities was collected. As hypothesized, findings supported the view that entrepreneurial team demographics (age heterogeneity and average educational level), environmental scanning and networking (networking with customers, competitors and particularly with public agencies) play a significant role in innovativeness of SMEs after controlling the significant effect of team size. The results were discussed together with the implications of the findings for managers and on the policies of government, public organizations and educational institutions, strengths and limitations of the study. Some suggestions for future research were made.



Keywords: Innovativeness, Entrepreneurial Team Demographics, Environmental Scanning, Networking, Small and Medium Sized Enterprises.

# ÖZ


TÜRKİYE'DEKİ KÜÇÜK VE ORTA ÖLÇEKLİ İŞLETMELERDE GİRİŞİMCİ EKİP ÖZELLİKLERİNİN, YAPILAN ÇEVRESEL İNCELEMELERİN VE NETWORK (AĞ) KURMA FAALİYETLERİNİN YENİLİKÇİLİK ÜZERİNE ETKİLERİ

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Bu çalışmanın ana amacı şirketlerdeki girişimci ekip demografisinin, yapılan çevresel incelemelerin ve kurulan ağların yenilikçilik faaliyetleri üzerine etkisini incelemektir. Bu amaçla Bursa ilindeki küçük ve orta ölçekli işletmeler seçilmiştir.

Toplamda 74 genel müdür/şirket sahibi anketi doldurmuştur. Katılımcılardan şirket, ekip üyeleri, şirketin çevresel inceleme, yenilikçilik ve ağ kurma aktiviteleri ile ilgili bilgi toplanmıştır. Bulgular hipotezlerde öne sürüldüğü gibi girişimci ekip demografisinin (gruptaki yaş heterojenliği ve ortalama eğitim seviyesi), çevresel incelemenin ve ağ kurma faaliyetlerinin (müşterilerle, rakiplerle ve özellikle kamu kuruluşlarıyla olan networkler) ekip büyüklüğünün önemli etkisini kontrol ettikten sonra KOBİ'lerin yenilikçiliği üzerinde anlamlı etkisi olduğunu göstermiştir. Sonuçlar bulguların yöneticiler, kamu kuruluşları ve eğitim kurumlarının politikaları açısından çıkarımları ile çalışmanın güçlü ve zayıf yanları ele alınarak müzakere edilmiştir. İlerideki araştırmalar için önerilerde bulunulmuştur.



Anahtar kelimeler: Yenilikçilik,Girişimci Ekip Demografisi, Çevresel İnceleme, Ağ Kurma, Küçük ve Orta Ölçekli İşletmeler.

To my grandfather

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# CHAPTER 1

# INTRODUCTION

## 1.1 Background of the Study

In a world which is exposed to changes every day, firms themselves should be in this change process in order to gain competitive advantage for long term success and survival. Organizational success and survival depend on an organization's ability to innovate by changing its structure or strategy. Innovative or excellent companies are described as firms that can develop new products and services and which are competent at continually responding to change of any sort in their environments (Peters and Waterman, 1982).

If innovativeness is so necessary for firms, what should firms do in order to bring innovativeness to their firms? Through a detailed research of literature, three main factors that have impact on innovativeness were detected. These are the entrepreneurial team characteristics, environmental scanning and networking with other parties. Therefore, the aim of this study is to investigate the effect of these factors on innovativeness in small and medium sized enterprises.

There are many studies in literature that concentrate on each factor separately, but there isn't any research that has taken these three antecedents together to see their effect on innovativeness and also the possible interactions between these factors when predicting overall innovative capability of firm. Thus, this research will contribute to the literature by illustrating these effects in the context of Turkey. The following paragraphs will firstly explain innovativeness and then the predictors by relating each predictor with each other and innovativeness. By this way, maturation of this study will be demonstrated.

Innovation is defined as a powerful force for sustainable economic growth by Organization for Economic Co-operation and Development. An innovation starts with the initiation or discovery of a new idea, and is followed by its development and implementation. The initial creative idea is merely the start point, since innovative ideas need nurturing and appropriate resources to be transformed into a successful product or practice (Jelinek and Schoonhoven, 1990). The general consensus is that the innovation process involves two distinct components: creativity and implementation.

Organizational innovation links the individual level and organizational level of analysis (Amabile, 1988; Kanter, 1990). Individual creativity is necessary for organizational innovation, but if it is not supported by the organization it remains only as an idea. Therefore, features of the organization can be the most important determinants of an individual's creativity at any point in time." (Amabile, 1988).

More recent definition of innovation was made in Oslo Manual (2005) as "…the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations". The minimum requirement for an innovation is that the product, process, marketing method or organizational method must be new (or significantly improved) to the firm. Innovation activities are all scientific, technological, organizational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations. Some innovation activities are themselves innovative; others are not novel activities but are necessary for the implementation of innovations. Innovation activities also include R&D that is not directly related to the development of a specific innovation (Oslo Manual, 2005).

In her study, Kanter (1983) discussed the need for American corporations to become more innovative and embrace changes, if they expect to sustain corporate success and leadership in America. Her approach for firms to accomplish innovation is to be more "integrative" and to see problems as wholes that are

related to larger wholes, and to not approach problem solving by focusing on little pieces. She suggested that entrepreneurs need to work with teams to implement innovations.

Organizations vary widely in their capacities to innovate (Cohen and Levinthal, 1990). The mode of innovativeness can be captured with the help of different resources. Human resources are already possessed by a small firm. Recent literature emphasize the importance of entrepreneurial teams whose trait combination/characteristics is a major asset for innovativeness. Entrepreneurial teams concept can be built on top management teams research which had defined top management teams as individuals that have power and authority to make strategic decisions. Top management teams are generally found in larger firms and they can be named as entrepreneurial teams in small firms, however, they have the same authority and power within their firms. Therefore, the capacity created by entrepreneurial teams is important in developing strategies yielding innovativeness. The knowledge and experience encapsulated in small firms' entrepreneurial teams can assist identifying use of new resources in a unique way. Human capital characteristics are important in helping entrepreneurial teams to greater opportunity sets.

Entrepreneurial teams can influence firm outcomes through the decisions they make and their decisions are affected from demographic characteristics. Organizational demography suggests that group demographic characteristics or social compositions can affect group decision making, which then influences organizational outcomes. Pfeffer (1983) suggested that organizational demography was an important construct, and that the entire organization's demographic composition may partially explain organizational outcomes. Organizational demography may account for various organizational outcomes, such as change, adaptation, innovativeness and performance. For instance, long tenured work groups would be less adaptive and innovative, since they would develop rigidity to established practices and become insulated from critical areas (Pfeffer, 1983).

Moreover, cohort studies (e.g. McNeil and Thompson, 1971) suggest that tenure gaps in an organization would create conflicts between newcomers and veterans.

Hage and Dewar (1973) examined the values of the elite inner circle on innovation, and found that the elite inner circle is an important predictor of innovation, and a stronger predictor than either leader values or organizational complexity. Research on cohorts (a group that shares some experience that may help share their values and perceptions) suggested that change emerges through conflict. When new members join an organization, the cleavage between veterans and newcomers creates conflict, but also the potential for change (McNeil and Thompson, 1971). Therefore, organizational demography proposes that heterogeneity across cohort groups creates conflict and opportunities for change; and homogeneity within cohort groups builds greater harmony, but potential narrow-mindedness or stagnation (Hambrick and Mason, 1984; Pfeffer, 1983).

Existing management team demographic studies have shown that these teams do matter in organizational outcomes (Haleblian and Finkelstein, 1993; Keck, 1997). However, because of the contradictory results about the relationship between management team demographics and organizational outcomes, Carpenter (2002) has suggested that "inconsistency among management team demographics/outcome relationships shown in prior work may point to the possibility that important moderation or intervening variables have been overlooked and that such omissions create opportunities for further research".

Entrepreneurial team demographics are internal resources affecting organizational outcomes such as innovativeness, however, as Carpenter (2002) suggested they are not sufficient to predict organizational outcomes. The resource dependency theory of organizations emphasizes the importance of external resources as well as internal resources in company performance (Barney, 2001; Peteraf, 1993). Therefore, the strategic activities to gather external knowledge such as environmental scanning and networking with other parties also influence the organizational outcomes. Thus, effect of environmental scanning and networking

with various stakeholders will be analyzed as the activities to reach outside world in this study.

Firms have to gather information by scanning and controlling their environments in order to adapt the changes, survive and flourish, because environments create both threats and opportunities for firms (Hambrick, 1982; Daft et al, 1988). Since the environment is full of unstable and unpredictable events, organizations are affected from the environment more than any other factors (Duncan, 1972). Yet, the processes of scanning and interpreting environmental changes provide the external intelligence for the people who have the authority for decision making in order to formulate strategies and implement them successfully (Elenkov, 1997). According to Auster and Choo (1993), managers function as "information processing systems" that receive information, direct its flow and take action based on information incorporated because of a unique access to external information and an all-embracing access to internal information. In terms of innovativeness, managers can use these signals as a starting point to innovate for new products/services or processes, to enter into new markets, to change the culture of their organizations or they may use these signals to make strategic movements in order to gain competitive advantage. Therefore, it is not strange to expect a relationship between environmental scanning and innovativeness.

Empirically, previous studies revealed that there is a positive relationship between environmental scanning and innovativeness (e.g. Hurley and Hult, 1998; Crick and Jones, 1999; Henneke and Lüthje, 2007). In Henneke and Lüthje (2007), it was mentioned that the positive effects of environmental scanning on the venture team's product innovativeness especially are assumed to be due to the team's awareness of technological and market opportunities. Market-related information provides insight into potential needs of customers. Moreover, technology related environmental scanning illuminates potential future trends that may result in significant product innovation. Thus, combining market and technology related scanning activities enables teams to identify and address potential competitive opportunities. In fact, in Khan and Manopichetwattana (1989), it was hypothesized

that extensive use of methods for environmental scanning should be a feature of the innovative firm.

Another important variable that will be looked for in this study is networking effects. Organizations whether large or small, can cover only part of their value chain and depend heavily on their environment (Pfeffer and Salancik, 1978). They have limited capacities in terms of resources, therefore, they outsource certain parts of the value chain and transact with other economic actors having complementary assets. External linkages have an important role in the acquisition of these assets and identification of innovative opportunities. Hakansson and Snehota (1990) referred to this need for establishing external networks by saying "no company is an island" and they defined network as "the web of relationships of an organization with identifiable counterparts".

Firms are embedded in socioeconomic networks consisting of long-term webs of relationships with customers, suppliers, financiers, universities, trade associations, etc. (Granovetter, 1985). Their strategic actions take place within the framework of these relationships (Fletcher and Hardill, 1995). Firms enter into relationships with these parties for many reasons. The most important reason is to obtain information and resources necessary in the adoption or development process of innovation (Hendry et al., 1995). Organizational learning theory suggests that external integration and boundary learning expansion efforts, for instance; bringing in knowledge from outside the organization, enable firms to explore new theory-in-use (Argyris and Schon, 1978) and knowledge which facilitates radical innovation (Shu et al., 2005). Social capital theory also highlights the importance of relations whereby social capital creates a context for social interactions and facilitates the formation of new linkages (Spence et al., 2003) to boost innovative activities.

In a world which is exposed to changes every day, firms can not rely only on their internal capabilities to innovate in order to remain competitive. They have to scan their environment carefully and build formal and informal strategic networks or expand the existing ones. In this study, the effect of entrepreneurial

team demographics, environmental scanning and networking effects on organizational innovativeness will be investigated as internal and external variables, respectively.

## 1.2 Context of the Study

According to State Statistics Institute (DIE, 2002), 99.5% of the total number of firms are described as small and medium sized enterprises in Turkish Republic. Therefore, the focus in this study is the small and medium enterprises in Bursa Organized Industrial Site. There are three reasons of this choice. First, smaller firms are more eager for changes; therefore, it is easier to see innovative behaviors. In their study, Chen and Hambrick (1995) showed that small and large firms differ distinctly in their competitive behaviors; for instance, small firms were shown to initiate competitive challenges more actively and fast than large firms.

Second, in small and medium sized enterprises, the effect of management team characteristics on strategic change such as innovativeness is likely to be strong because management team involvement is more intensified due to small size and flexible organizational structures (Brunninge et al., 2007). For instance, generally, there are no special departments for marketing or product development in SMEs and even if they exist, decisions are made under the influence of top management (Cowling, 2003).

Third, they have to scan the environment and cooperate with other parties more than the larger firms, in order to learn more and overcome the resource deficiencies in their companies. Rothwell (1991) explained this need as “Small firms, specifically, have a relative lack of innovation-specific resources and expertise. Thus, they have to obtain them from external sources through strategic networks and as a result, the interactive character of innovation in their case is even more intense”.

Firms that participate to this study are from different industries such as textile, automotive, chemicals, information technologies, metal/rubber/packaging, construction, printing, heating-cooling systems, logistics and consultancy. According to Chen and Hambrick (1995), using a single industry restricts the choice of analytical methods and statistical significance. This perspective has been supported by research findings (Cool and Schendel, 1987; Hatten, Schendel and Cooper, 1978) and therefore the rationale for a multiple industry study.

The reason for choosing only one industrial site was the growing empirical evidences of regional concentration of innovation activity. According to Camagni and Capello (2000), local embeddedness within a geographical cluster or milieu of innovative firms may be of crucial importance for the innovativeness and competitive capacity of SMEs in terms of access to innovative ideas, new technologies and range of benefits obtained through the regional networks. The reason of this idea is the favorable conditions for knowledge exchange. In other words localization is conductive to innovation because clustering and proximity create an environment where interdependent knowledge bases can be exchanged through a variety of relationships based on trust (Patrucco, 2003).

# CHAPTER II

# REVIEW OF LITERATURE

## 2.1 Innovativeness

It is necessary for firms to gain competitive advantage for long-term success and survival and this can be achieved by being innovative (Deshpande and Farley 1999, 2000). Organizations diversify, adapt and even reinvent to fit the changing conditions of the technology and the market through innovation which results in the self-renewal of the organization (Nonaka and Yamanouchi, 1989). This proclivity to innovation is referred to as innovativeness in Santos-Vijande et al. (2007).

Organizational innovation is a planned organizational change. Innovation is differed from organizational change by its intentionality of direct benefit and newness (West and Farr, 1990). Organizational innovation is a means to introduce change in an organization as in the adoption of a new product, new process technology, new structure or administrative system, policy or program (Damanpour, 1991). Like organizational change, some innovations may be peripheral and only modify existing products or processes; other innovations are more radical and affect the core of the organization, as in innovations that force an organization to enter new markets and diversify. Diversification involves the development of new products or services that frequently requires new administrative, production or distribution technologies (Haveman, 1993); and innovations that introduce these types of changes affect an organization's core structure and domain (Fligstein and Dauber, 1989). Innovativeness describes firms that have propensity for constant innovation as distinguished from innovation research that concentrate on only the adoption and/or diffusion of a single innovation.

Innovations are adopted or implemented to enhance performance, to defend against failure or to improve overall efficiency to remain competitive. New process or incremental innovations are associated with higher productivity; its organizational design and structure reflects a milestone of change through the development of new patterns of control and coordination (Abernathy and Utterback, 1978).

Innovation research reflects a great number of approaches and measures innovation such as diffusion, adoption and rates of innovation and proposed determinants of innovation like structural, incremental vs. radical, by focusing on different types of innovativeness such as product, process, market, strategic and behavioral innovativeness. Mostly, however, product innovativeness was used in order to measure innovative capability of companies instead of overall organizational innovativeness. According to Wang and Ahmed (2004), product innovativeness underlines only the outcome-oriented innovative capability of firms but does not give importance to the underlying factors, such as behavioral changes, process innovation, market and strategic orientation towards innovation. However, these underlying factors are equally important dimensions of overall innovative capability.

The multiple ways of examining innovation in previous studies resulted in multiple and inconsistent findings and the criticism by Downs and Mohr (1976) that innovation research was unstable and couldn't make a cumulative contribution to organization research. Wang and Ahmed (2004), therefore, scanned the innovativeness literature and decided to combine five main areas that determine an organization's overall innovativeness in order to develop an organizational innovativeness construct. These five areas are product innovativeness, market innovativeness, process innovativeness, behavioral innovativeness and strategic innovativeness which were studied by many researchers separately. These studies can be seen in Table 2.1 below. Bringing all existing perspectives together, organizational innovativeness can be defined as "an organization's overall innovative capability of introducing new products to the market, or opening new

markets, through combining strategic orientation with innovative behavior and process" (Wang and Ahmed, 2004).

**Table 2.1.** Dimensions of organizational innovativeness

| Author | Product | Market | Process | Behaviour | Strategic |
|---|---|---|---|---|---|
| Schumpeter(1934) | X | X | X | | |
| Miller and Friesen(1983) | X | | X | X | X |
| Capon et al.(1992) | | X | | | X |
| Avlonitis et al.(1994) | X | | X | X | X |
| Subnamarian and Nilakanta(1996) | | | X | | |
| Hurley and Hult(1998) | | | | X | |
| Rainey(1999) | | | | X | X |
| Lyon et al.(2000) | X | | X | | |
| North and Smallbone(2000) | X | X | X | X | |

Source: Wang and Ahmed (2004)

As will be described below, these five dimensions are inter-linked. Especially, product innovativeness and market innovativeness are inter-twined. Product and market innovativeness are externally focused and market based, while process and behaviour innovativeness are internally focused. Strategic innovativeness, on the other hand, emphasizes an organization's ability to detect external opportunities in a timely fashion and match external opportunities with internal capabilities in order to serve innovative products and explore new markets or market sectors. These five aspects together represent an organization's overall innovativeness (Wang and Ahmed, 2004). In order to understand the organizational innovativeness as a whole, dimensions that form it will be described in following sections.

### 2.1.1 Product Innovativeness

The degree of newness of a product is mostly measured by product innovativeness (Griffin, 2002). The innovativeness of a new product is important for several reasons. Innovative products present great opportunities for companies in terms of growth and expansion into new areas. Significant innovations allow companies to hold competitively dominant positions and give newcomers a chance to gain a foothold in the market (Danneels and Kleinschmidt, 2001).

Product innovativeness is most often referred to as perceived newness, novelty, originality or uniqueness of products (Henard and Szymanski, 2001). The Booz Allen Hamilton (1982) typology, the most often used typology for new products, categorizes this newness along two perspectives: newness to the market and newness to the developing firm. Langerak and Hultink (2006) explained these two perspectives briefly in their study. According to them, the market perspective draws on the extant literature on innovation adoption and diffusion to understand how customers perceive product newness by focusing on the impact of new product attributes on customers' decisions to adopt, on the timing of the adoption, and on the change in established behavior patterns that the new product requires. The firm perspective draws on the literature examining organization-environment relationships and the resource- based theory of the firm focusing on newness as familiarity regarding the interplay between the firm and its environment and on newness as the degree of fit between the new product and the firm's existing marketing or technological resources and capabilities.

Combining the perspectives available in literature, product innovativeness can be defined as "the novelty and meaningfulness of new products introduced to the market at a timely fashion". By this definition, product innovativeness can be differentiated from other innovative factors and it can be regarded as an outstanding dimension (Wang and Ahmed, 2004).

### 2.1.2 Market Innovativeness

Most of the time, market innovativeness is handled together with product innovativeness and often studied as product-market innovativeness (Cooper, 1973; Miller, 1983). In fact, in some studies (e.g. Ali et al., 1995), innovativeness is considered as a market-based construct and defined as the uniqueness or novelty of the product to the market. Comprehensively, Andrew and Smith (1996) described the market innovativeness as the extent to which the actions taken to market a product (e.g. package changes) represent a considerable difference from marketing practices in the product category. Considerable novelty also has been used to describe the creativity of advertisements (Haberland and Dacin, 1992) and solutions to everyday business problems (Ray and Meyers, 1986).

Separate from product innovativeness, market innovativeness can be referred as the newness of approaches that firms adopt to enter and exploit the targeted market. For some companies, this means entering a market or identifying a market niche and offering products with the cutting-edge technology. For others, this may mean offering the current products by using new marketing programmes to promote the products and services. As it can be understood from both approaches, market innovativeness gives importance to the novelty of market-oriented approaches whereas product innovativeness focuses on product newness (Wang and Ahmed, 2004). However, they are inevitably inter-twined because a firm can not be fully successful unless it considers these two factors together.

### 2.1.3 Process Innovativeness

Process innovativeness is often confused with technological innovativeness and evaluated as a sub-element of technological innovativeness (Wang and Ahmed, 2004). However, in fact, it is more comprehensive than technological innovativeness. Technological innovativeness took place in Avlonitis et al. (1994) in two forms: Technological innovation challenges that the company is facing regarding its raw materials, methods of production, machinery and equipment and

innovativeness of core machinery indicating the relevant updated-ness of the main machinery in use. Similarly, Das and Joshi (2007) defined process innovativeness as "a firm's tendency to engage in and support new ideas, experimentation and creativity for the development of new processes". As they mentioned, much of this process innovativeness is facilitated by the application of engineering, research, technical expertise and industry knowledge to achieve competencies in the latest technologies and production methods, and the development of advanced processes. One thing missing in these definitions is the new management approaches that should be included in process innovativeness because companies bring innovativeness not only to the processes in technical part but also to the processes in administrative part or organizational structure of their companies. Therefore, process innovativeness is defined as in Wang and Ahmed (2004) in this research.

Process innovativeness captures the introduction of new production methods, new management approaches, and new technology that can be used to improve production and management processes. Process innovativeness is imperative in overall innovative capability, in that an organization's ability to exploit their resources and capabilities, and most importantly, the ability to recombine and reconfigure its resources and abilities to meet the requirement of creative production is critical to organizational success.

### 2.1.4 Behavioral Innovativeness

Behavioral innovativeness was described as the sustained behavioral change- or in other words, the behavioral commitment- of the organization towards innovation (Avlonitis et al., 1994) and it was reflected by the frequency of submission of proposals for the introduction of new technological innovations in the firm, the attitude of the firm's managers towards the adoption and installation of important technological innovations and lastly, the kind of managerial response to a possible adoption of an important innovation by main competitors. Individuals and teams can also show behavioral innovativeness by showing willingness and adapting to change (Hurt et al., 1977; Lovelace et al., 2001).

Behavioral innovativeness expressed through individuals, teams and management is necessary to create an innovative culture, the overall internal receptivity to new ideas and innovation. This is why Hurley and Hult (1998) defined innovativeness as the notion of openness to new ideas as an aspect of a firm's culture and innovativeness of the culture as a measure of the organization's orientation toward innovation. This definition is also consistent with Zaltman et al. (1973), since they also suggested that "openness to innovation" is the critical part of the initiation stage of innovation process. According to them, openness to innovation is determined by whether the members of an organization are willing to consider the adoption of or are resistant to innovation (Hurley and Hult, 1998). Tajeddini et.al (2006) proposed the following definition of innovativeness in their research building on the work of McDonald (2002):

> *"The willingness and ability to adopt, imitate or implement new technologies, processes and ideas and commercialize them in order to offer new, unique products and services before most competitors. This willingness is based on a firm's culture in terms of values and beliefs in the organization."*

As it can be seen from previous studies, behavioral innovativeness is the major factor that underlines innovative outcomes and innovative culture serves as a catalyst of innovations, while lack of it acts as a barrier in front of innovations (Wang and Ahmed, 2004).

### 2.1.5 Strategic Innovativeness

Strategic innovativeness didn't take much attention as the other innovativeness factors in literature. The authors that give place to strategic innovativeness in their studies only include one or two items in their innovativeness constructs about strategic innovativeness. For instance; Avlonitis et al. (1994) considered future investments in new machinery and equipment, new

production methods and new raw materials as manifested strategic innovation intentions. Miller and Friesen (1983), on the other hand, included the items "Risk taking by key executives of the firm in seizing and exploring chancy growth opportunities" and "Seeking of unusual, novel solutions by senior executives to problems via the use of idea men, brainstorming, etc." to measure innovativeness. However, strategic innovativeness is more than that and it is equally important since it can take a firm from bottom and carry to top positions by careful tactics.

Markides (1998) defined strategic innovation as "a fundamental reconceptualization of what the business is all about that, in turn, leads to a dramatically different way of playing the game in an existing business". According to him, strategic innovation takes place when a company identifies gaps in industry positioning, goes after them and the gaps grow to become a new mass market. What he meant by gaps is that 1) new customer segments emerging or customer segments that the existing competitors ignore; 2) new customer needs emerging, or existing customer needs that current rivals do not serve well; 3) new ways of producing, delivering, or distributing existing (or new) products or services to existing (or new) customer segments. These gaps tend to come out for various reasons, such as changing customer tastes and preferences, changing technologies or government policies, and so on.

Extendedly, strategic innovation was defined by Besanko et al. (1996) as the development of new competitive strategies that create value for the firm. In this research, based on the studies in literature, strategic innovativeness will be used to measure an organization's ability to manage ambitious organizational objectives, and identify a mismatch between these goals and existing resources to stretch or control limited resources creatively as in Wang and Ahmed (2004).

## 2.2 Entrepreneurial Team Demographics Based on Top Management Team Studies

The impact of organization leaders on firm performance has been discussed in many studies up to now. Some of these studies adopted the view that leaders are products of their environments and have little power to control the various factors determining organizational actions (e.g. Aldrich, 1979), whereas others mentioned that leaders are powerful decision makers affecting the future of their firms (e.g. Weiner and Mahoney, 1981). Both views had some truth in themselves; therefore it would be more accurate to take the idea that leaders being the partially constrained decision makers (as their external environment allowed them to do so) who shape and manage the actions that their organizations will take (Bantel and Jackson, 1989).

The core theory adopted in this research is Hambrick and Mason's (1984) Upper Echelon Perspective. This theory is based on background characteristics such as age, education, tenure, background and financial position rather than being based on psychological dimensions. They explained the reason of that in three manners. Firstly, according to them, the cognitive bases, values and perceptions of upper level managers are not convenient to measure since top executives are not quite willing to be included in psychological batteries necessary for a wide research. Secondly, some of the demographic characteristics such as tenure and functional background do not have similar psychological analogs. Finally, the probable application of the perspective in management selection/development and especially in competitor analysis would necessitate obvious demographic data on managers.

Further, Upper Echelons Perspective is based on the study of the entire top management team, which "increases the potential strength of the theory to predict, because the chief executive shares tasks and to some extent, power with other team members". Papadakis and Barwise (2002) supported Hambrick and Mason's argument for the study of management teams versus the CEO. They found "strong

influence of top management teams as a whole on strategic decision making opposed to the CEO.

Upper echelon characteristics, which also referred as demographic characteristics in the study, are defined as age, functional track, other career experiences, formal education, socioeconomic background, financial position and group heterogeneity (Hambrick and Mason, 1984). The theory relates these observable demographic characteristics of the top management teams to organizational processes and outcomes. Moreover, the "theory states that organizational outcomes can be partially predicted from managerial backgrounds" (Hambrick and Mason, 1984) and that executives will make decisions as a team that are consistent with their cognitive base of executive orientation (Hambrick and Mason, 1984; Knight et al., 1999). The cognitive base consists of two elements: psychological characteristics and observable experiences.

A fundamental principle of upper echelons theory is that observable experiences such as demographic measures are systematically related to the psychological and cognitive elements of executive orientation. Upper echelons research employs the use of observable demographic characteristics as proxy measures of executive orientation (Knight et al., 1999).

Entrepreneurial teams which are the focus of present study can be thought as top management teams in small and medium enterprises. Similar to top management teams, most definitions consider entrepreneurial teams as comprising of members who hold significant ownership stakes in the venture and/or involved in strategic decision making (Ucbasaran, Lockett, Wright, & Westhead, 2003). Evidence based on the superior performance of ventures owned by entrepreneurial teams relative to those owned by a solo entrepreneur suggests that entrepreneurial teams matter as in top management teams (Cooper & Bruno, 1977; Roure & Maidique, 1986; Weinzimmer, 1997). In contrast to the top management team literature, however, the study of entrepreneurial teams has been constrained by methodological problems. For instance, unlike the earlier studies based on publicly

available data on the demographic characteristics of the top management team governing large established firms, such data on entrepreneurial team members are unavailable. Therefore, despite recognition of the importance of entrepreneurial team composition, research in the area is still in its infancy. With the present study, an important contribution is aimed to be done to the existing literature.

Up to now, numerous studies have found significant relationships between the demographic composition of the top management team and innovativeness. Many studies found that young, short-tenure and highly educated teams are relatively more innovative independent of the type of industry (Bantel and Jackson 1989, O'Reilly and Flatt, 1989). Top management team members' organizational tenure, on the other hand, was found to be significantly associated with strategic persistence, or absence of change (Finkelstein and Hambrick, 1990; Grimm and Smith, 1991; Wiersema and Bantel, 1992) .This can further be negatively associated with innovativeness. These studies demonstrated the direct effect of demographic characteristics on innovativeness.

When the effect of top management team heterogeneity on innovativeness was investigated, the conclusions were found to be contradictory (Hambrick, 1996). There are some studies demonstrating the beneficial effects whereas there are others showing the negative effects of top management team heterogeneity.

From the positive side, as a source of broad cognitive resources, team heterogeneity has long been thought to enhance creativity and innovation (Hoffman and Maier. 1961; Bantel and Jackson, 1989; Jackson, 1992). For instance; marketing innovations, such as American Airlines' introduction of a frequent-flyer program in the early 1980s, have been attributed to top management team diversity (Labich, 1990). Chaganti and Sambharya (1987) similarly observed an association between the functional diversity of top management teams in tobacco companies and strategic adaptation. According to Bantel and Jackson (1989), top management team heterogeneity in educational level and functional background was positively related with innovativeness in a large sample of banks. The logic behind these

positive effects can be based on Hoffman and Maier (1961)'s study as diversity enhances the breadth of perspective, cognitive resources and overall problem-solving capacity of the group. With a broad array of information and experience, diverse teams can generate a wider range of options that synergistically combine the members' orientations while avoiding groupthink and behavioral inertia (Janis, 1972; Hambrick, 1994). At the same time, because of its diversity, the heterogeneous team may experience internal conflict and strains, which could result in slow decisions. It might further be expected that the conflict that often accompanies diversity would impair the firm's ability to launch actions at all. Overall, however, the heterogeneous team has access to such wide-ranging stimuli and has such a broad potential repertoire that its ability to conceive and launch actions on many fronts should outweigh the dampening effects of internal strains (Hambrick, 1994).

From the negative side, on the other hand, O'Reilly and Flatt (1989) found that firms' innovation was negatively related to team heterogeneity in firm tenure. That is to say that the longer the organizational tenure, mean tenure of the team, plus one standard deviation (Wiersema and Bantel, 1992), the more homogeneous the team becomes in its actions, and the heterogeneous demographics no longer are a measure of the team's actions with respect to performance. This finding is similar with Finkelstein and Hambrick (1990), which found long-tenure teams tended to imitate strategies in line with industry trends. As stated earlier, Ferrier et al. (2002), Knight et al. (1999) and Simons et al. (1999) found that heterogeneous teams will debate and are less likely to come to consensus about strategic responses and causes of poor performance than homogeneous teams are. This can be further related to innovativeness.

### 2.3 Environmental Scanning

Firms have to gather information by scanning and controlling their environments in order to adapt the changes, survive and flourish, because environments create both threats and opportunities for firms (Hambrick, 1982; Daft

et al, 1988). Since the environment is full of unstable and unpredictable events, organizations are affected from the environment more than any other factors (Duncan, 1972). Yet, the processes of scanning and interpreting environmental changes provide the external intelligence for the people who have the authority for decision making in order to formulate strategies and implement them successfully (Elenkov, 1997). According to Auster and Choo (1993), managers function as an "information processing systems" that receive information, direct its flow and take action based on information incorporated because of a unique access to external information and an all-embracing access to internal information. To be able to explain the need for environmental scanning in more detail, it is necessary to give some information about environmental sectors and strategic uncertainty.

As defined by Duncan (1972), environment is the relevant physical and social factors outside the boundary of an organization that are considered while making organizational decisions. According to Bourgeois (1980), the environment can be conceptualized as having several sectors that exist in two layers. The first layer closest to organization has direct impacts on business strategy and is called task environment. The task environment includes environmental sectors such as competitors, suppliers and customers with which the organizations have direct transactions. The second (outer) layer is called the general environment and refers to the sectors such as social, demographic and economic which indirectly impacts the organization. Sectors in the task and general environment are expected to influence scanning and other information gathering activities since they differ in uncertainty. Moreover, Miles, Snow and Pfeffer (1974) theorize that managers respond basically what they perceive. Strategic actions depend on managers' perceptions and interpretations of the environment (Schneider and De Meyer, 1991). If the match between managers' perceived environmental uncertainty and true environmental volatility is high, then the economic performance of a firm is also high (Bourgeois, 1985). Therefore, it is important for decision makers to notice the changes and interpret them correctly in order to make the needed adjustments to organization's strategy or structure (Pfeffer and Salancik, 1978).

Perceived environmental uncertainty is defined as the absence of information about organizations, activities and events in the environment (Huber and Daft, 1987) or the difference between the amount of information necessary to perform a task and the amount of information which has already been obtained (Galbraith, 1977). However, perceived environmental certainty by itself does not result in scanning behaviour. If the external events are not considered as important for organizational performance, managers may not be interested in them (Pfeffer and Salancik, 1978). Information from important sectors of the environment may become a source of competitive advantage (Dutton and Freedman, 1984). Daft, Sormunen and Parks (1988) also mentioned that perceived sector importance translates perceived environmental uncertainty into strategic uncertainty. Essentially, strategic uncertainty reflects the strategic value of environmental information for organizational performance.

The combination of perceived environmental uncertainty and sector importance is expected to generate a need for managers to scan events in selected environmental sectors (Elenkov, 1997). As described by Hambrick (1982), environmental scanning is the means through which managers perceive external events and trends and it reduces the strategic uncertainty. According to Daft et al. (1988), executives can learn about environmental sectors in various ways. They may scan the environment directly or learn from other in the organization. They may increase or decrease the frequency with which they scan, and they may select information among information modes or channels. Scanning frequency is the number of times executives receive data about environment (Hambrick, 1981). Scanning mode, on the other hand, is the source or medium through which executives learn about the environment. Mode can be classified a personal, impersonal, internal or external sources (Aguilar, 1967). Since managers have limited time and capacity to evaluate the all information in the environment, they tend to choose among scanning alternatives. In this research, market, technological environment and potential investors were chosen to be inspected and frequency of scanning will be used as a measure to understand the level of firms' environmental scanning activities.

## 2.4 Networking

High level of uncertainty in innovation process, associated with changing technology and competitiveness, has encouraged many firms to cooperate in this process. Organizations whether large or small, can cover only part of their value chain and depend heavily on their environment (Pfeffer and Salancik, 1978). They have limited capacities in terms of resources, therefore, they outsource certain parts of the value chain and transact with other economic actors having complementary assets. External linkages have an important role in the acquisition of these assets and identification of innovative opportunities. Hakansson and Snehota (1990) referred to this need for establishing external networks by saying "no company is an island" and they defined network as "the web of relationships of an organization with identifiable counterparts".

Although most of the studies emphasis the inter-firm networks as the innovation networks, they are not the only means of innovation. Besides inter-firm linkages; relations with research institutions, education institutions and technology transfer centers are normally considered important as well. In order to get more benefit, firms should be embedded in socioeconomic networks consisting of long-term webs of relationships with customers, suppliers, financiers, universities, trade associations, etc. (Granovetter, 1985). Their strategic actions take place within the framework of these relationships (Fletcher and Hardill, 1995). Firms enter into relationships with these parties for many reasons. Most important reason is to obtain information and resources necessary in the adoption or development process of innovation (Hendry et al., 1995). Organizational learning theory suggests that external integration and boundary learning expansion efforts, for instance; bringing in knowledge from outside the organization, enable firms to explore new theory-in-use (Argyris and Schon, 1978) and knowledge which facilitates radical innovation (Shu et al., 2005).

Arndt and Sternberg (2000) suggested that SMEs should cooperate during the innovation process for the reduction of uncertainties and costs, for the

increasing flexibility towards changing market conditions. High level of networks creates a synergy to induce innovative activities and also affects innovativeness positively. Because the importance of networking in the innovation process makes it clear, that networking is an essential means of knowledge exchange.

In literature, there are two types of linkages: vertical linkages and horizontal linkages. Vertical linkages generally occur in the value chain of companies in the form of collaborations with customers and suppliers. Primary benefits from vertical linkages are project cost reduction, risk-sharing and timeliness (Tidd, Bessant and Pavitt, 1997). Vertical linkages are associated with relatively less innovative and more predictable new product projects as opposed to more innovative, unpredictable projects (Eisenhardt and Tabrizi, 1990). Horizontal linkages are the collaboration of firms with their competitors, research institutes or universities and public agencies. As opposed to vertical linkages, horizontal linkages enable the firm to reach a wide range of complementary know-how (Tidd et al., 1997). For instance, R&D activities carried out with universities are beneficial in helping high-tech SMEs to access state-of-the-art technology and knowledge (Rothwell and Dodgson, 1991). Therefore, the positive impact of horizontal linkages on firm's innovativeness is stronger than that of vertical linkages.

Freel (2000) examined the relationship between innovativeness and each collaboration type in detail in his paper. In order to understand the effect of networking activities with each party better, links with customers, suppliers, competitors, universities and public agencies will be described in hypotheses part.

## 2.5 Hypotheses

### 2.5.1 Entrepreneurial Team Demographics and Innovativeness

The entrepreneur is the person who begins, organize and develop the firm. He tries to increase productivity, through invention and innovation. So, innovation is the main feature of entrepreneurship and creativity is the entrepreneur's nuclear characteristic. He has the potential, the desire to promote innovation, the capability to accept personal responsibility, to create a venture and wish to initialize higher projects (Wiratmo and Wibawa, 1996).

Entrepreneurial teams, in the same manner, comprise of individuals that have power and authority to make strategic decisions and therefore to develop strategies aiming innovation. The Upper Echelon Theory denoted that top management teams exert a great influence on strategic choice in their organizations and it was argued that the manager's cognitive bases are the mental guidelines which support their decisions and which accordingly affect the results in their companies (Wiersema and Bantel, 1992; Finkelstein and Hambrick, 1990).

The main principle described in Upper Echelon Theory is that the observable characteristics of teams are related to psychological and cognitive traits. With this assumption, they used certain observable demographic characteristics of teams in place of cognitive bases and values of managers. Therefore, the theory mentions that there is a relationship between demographic characteristics of top management teams and their company results (Hambrick and Mason, 1984; Wiersema and Bantel, 1992; Knight et al., 1999; Canella et al., 2001; Camelo-Ordaz et al., 2004).

In previous studies, researchers approached to the theory in two different perspectives. The first perspective looked for the direct effect of these demographic characteristics such as age, education and tenure of top management team members on organizational results and decisions (e.g. Bantel and Jackson, 1989; O'Reilly

and Flatt, 1989; Smith et al., 1994; Finkelstein and Hambrick, 1990; Michel and Hambrick, 1992; Knight et al., 1999). The second one analyzed the effects of team diversity by looking at the dispersion of a grouping of demographic variables on organizational results (e.g. Bantel, 1993; Bantel and Jackson, 1989; Hambrick et al., 1996; Wiersema and Bantel, 1992; Murray, 1989). Results of the studies with the second approach were contradictory. Some studies have found positive associations between diversity and organizational results (Bantel and Jackson, 1989), whereas some others have found the opposite (Murninghan and Conlon, 1991).

With this research, it is aimed to contribute to the limited existing literature with a different context. In this study, the relationships between gender heterogeneity, average age, age heterogeneity, average organizational tenure, organizational tenure heterogeneity and average level of education in entrepreneurial teams and organizational innovativeness will be inspected with the following explanations and proposed hypotheses.

#### 2.5.1.1 Gender Heterogeneity

For the last few decades, gender, as one of the demographic variables, has drawn heavy attention from many researchers due to the increasing number of women entering business life or other organizations. Some of the researchers have findings that support the gender heterogeneity in groups whereas others oppose the idea of gender heterogeneity alleging that homogeneous groups in terms of gender perform better. For instance, Hoffman and Maier (1961) reported that "mixed-sex groups tended to produce higher quality solutions than did all-male groups," and Wood (1987) also showed by a meta-analysis that “mixed-gender groups tended to perform better than homogeneous-gender groups.” Kent and McGrath (1969), on the other hand, reported that "sexually homogeneous groups generated products which were decidedly more original than those from heterogeneous groups." In this study, the idea that gender diversity brings positive outcomes in terms of innovativeness will be held since women and men are different by their nature and

this will reflect the performance of the team positively. Therefore, it is proposed that:

**H1: There is a positive relationship between gender heterogeneity of entrepreneurial team and innovativeness.**

#### 2.5.1.2 Average Age

As was proposed and found by many researchers, management team youth affects innovative activities of the companies positively (Child, 1974; Hambrick and Mason, 1984; Bantel and Jackson, 1989). There are three explanations for this association in the literature. First of all, in his study, Child (1974) found that younger managers possess the ability to spend more physical and mental effort to bring change to their companies. Moreover, their learning abilities, reasoning and memory are better than older managers which help them to come up with new ideas and learn new behaviors (Botwinick, 1977; Burke and Light, 1981). Second, younger managers take their education later than older managers, so their technical knowledge is better (Bantel and Jackson, 1989). Finally, younger managers are more eager to take risky actions than older managers (Vroom and Pahl, 1971; Hambrick and Mason, 1984). The reason for older managers to avoid risky behaviors might be to have both financial and career security since their expenditure traits and expectations about retirement income are established (Carlsson and Karlsson, 1970).

Although these arguments seem logical, youthfulness also have limitations on innovativeness. According to Kitchell (1997), very young managers may be at an exploratory stage of their careers and therefore, may lack the stability to make long-term commitment or the credibility to champion radical changes. Taking these two opposite arguments into account, it can be deducted that the relationship between entrepreneurial team's age average and innovativeness, while negative, is curvilinear at the extremes (for very young and very old entrepreneurial teams). Based on these detailed research, following hypothesis will be tested in this study.

**H2: There is a negative curvilinear relationship between average age of entrepreneurial team and innovativeness.**

#### 2.5.1.3 Age Heterogeneity

When the effect of age heterogeneity on innovativeness is concerned, contradictory views can be found between the researchers. From one point of view, age heterogeneity increases the innovativeness of teams because different age groups have different attitudes, values and perspectives due to their experiences of different social, political and economic environments and events which boost group creativity (Elder, 1975). From the opposite view, McNeil and Thompson (1971) and Pfeffer (1983) mentioned in their studies that different values and attitudes of age cohorts could lead to higher levels of conflict which obstructs to develop group cohesiveness which is necessary for teams to decide on strategic actions like innovations. In practice, Bantel and Jackson (1989) tested the effect of age heterogeneity on innovativeness in banking sector and found no significant relationship between them. In this study, the hypothesis will be tested based on the second perspective.

**H3: There is a negative relationship between age heterogeneity of entrepreneurial team and innovativeness.**

#### 2.5.1.4 Average Organizational Tenure

When the effect of organizational tenure on innovativeness is taken into account, there are two contradictory views about the issue. Hayes and Abernathy (1980) mentioned that a manager who is working in a particular company for long years can develop knowledge of the technological trends within the industry and this enables him to be more open to investments in innovation that are necessary to capitalize on these changes. On the other hand, Hambrick and Mason (1984) propose that managers who have worked in the same company for long years are

more likely to focus on their existing products and markets rather than looking for new ones. The reason for this attitude is explained by Bantel and Jackson (1989) as the managers' psychological commitment to status quo and accordingly the need for information search. In the same manner, according to Brunninge et al. (2007), over time, managers may become insulated from environmental and performance changes and fail to perceive and react to environmental and organizational changes. Thus, based on these two arguments, there must be an optimum organizational tenure in order for entrepreneurial team to be more innovative. Therefore, in this research, the negative curvilinear relationship (similar with average age) will be tested by the following hypothesis.

**H4: There is a negative curvilinear relationship between average tenure of entrepreneurial team and innovativeness.**

#### 2.5.1.5 Organizational Tenure Heterogeneity

As in the case of age heterogeneity, cohort groups defined by organizational tenure are likely to be different from each other with respect to their experiences, perspectives, attitudes and values. These differences may influence the team in positive or negative way. Heterogeneity may add cognitive diversity and encourage discussion which in turn increases the innovativeness or it may cause conflict and obstruct communication process between the members creating a barrier in front of innovativeness (Katz, 1982; Pfeffer, 1983; Bantel and Jackson, 1989). In this study, the negative relationship will be tested.

**H5: There is a negative relationship between tenure heterogeneity of entrepreneurial team and innovativeness.**

#### 2.5.1.6 Average Education Level

A manager's formal educational background has been accepted as a sign of that person's values and cognitive abilities in many studies (eg. Daellanbach et al,

1999; Hambrick and Mason, 1984; Bantel and Jackson, 1989, Kimberly and Evanisko, 1981; Rogers and Shoemaker, 1971). These studies found a positive relationship with top management teams' average education levels and their commitment to innovation, since teams having higher education levels have an ability to bring creative solutions to more complex problems and they also have more receptive attitudes toward innovation. As a result, it is proposed that:

**H6: There is a positive relationship between average education level of entrepreneurial team and innovativeness.**

### 2.5.2 Environmental Scanning and Innovativeness

It is obvious that today's managers face an increasingly complex and turbulent business environment. Based on a survey of 12000 managers in 25 countries by the Harward Business Review, Kanter (1991) identified a huge array of forces of change including "globalizing markets, instantaneous communications, travel at the speed of sound, political realignments, changing demographics, technological transformations in both products and production, corporate alliances, flattening organization…" all of which are said to cause the traditional walls of business boundaries to fall down. The managers in the survey pointed out that change is an essential part of corporate life everywhere, and that establishing good relationships with customers and suppliers is a critical issue. From an information perspective, managers should pay attention to signals and messages that the changes and developments in the external environment create (Dill, 1962). In terms of innovativeness, managers can use these signals as a starting point to innovate for new products/services or processes, to enter into new markets, to change the culture of their organizations or they may use these signals to make strategic movements in order to gain competitive advantage. Therefore, it is not strange to expect a relationship between environmental scanning and innovativeness.

Empirically, previous studies revealed that there is a positive relationship between environmental scanning and innovativeness (e.g. Hurley and Hult, 1998;

Crick and Jones, 1999; Henneke and Lüthje, 2007). In Henneke and Lüthje (2007), it was mentioned that the positive effects of environmental scanning on the venture team's product innovativeness especially are assumed to be due to the team's awareness of technological and market opportunities. Market-related information provides insight into potential needs of customers. Moreover, technology related environmental scanning illuminates potential future trends that may result in significant product innovation. Thus, combining market and technology related scanning activities enables teams to identify and address potential competitive opportunities. In fact, in Khan and Manopichetwattana (1989), it was hypothesized that extensive use of methods for environmental scanning should be a feature of the innovative firm. Therefore, in the light of these studies, it is proposed that:

**H7: There is a positive relationship between environmental scanning and innovativeness.**

### 2.5.3 Networking and Innovativeness

In all highly-industrialized nations, the long-term growth of business stems from their ability to continually develop and produce innovative products (Sternberg, 2000). Indeed, Chris Freeman, the doyen of innovation theorists, goes further; suggesting that "… not to innovate is to die" (Freeman and Soete, 1997). So far, the dominant network theory of innovation holds that individual firms are rarely capable of innovating independently and never innovate in a vacuum (Hakannson, 1987; Cooke and Morgan, 1998). With the rapid changes in technological development, the increasing complexity of new products and processes and also the globalization of markets, even large firms are forced to develop innovations through cooperation with other parties (Freeman and Hagedoom, 1994). Innovative activities necessitate the utilization and integration of a wide range of capabilities and expertise. Firms can not rely only on their internal capabilities but have to build formal and informal strategic networks or expand the existing ones (Autio et al., 1997). Small firms, specifically, have a relative lack of innovation-specific resources and expertise. Thus, they have to

obtain them from external sources through strategic networks and as a result, the interactive character of innovation in their case is even more intense (Rothwell, 1991).

These networks can then be used to obtain knowledge and expertise not generated internally (Malerba and Torrisi, 1992). Complementarities tend to develop between internal capabilities and specific external network channels. Interaction in a network for innovation may occur among the firm and its partners across the value-adding chain such as with customers and suppliers or outside the value-adding chain such as with competitors, universities and public agencies. Below, the relationship between innovativeness and firms' networking activities with each party will be explained and accordingly, the hypotheses will be proposed.

#### 2.5.3.1 Networking with Customers

First type of vertical linkages is networking with customers. Customer linkage is concerned with planning, implementing, and evaluating successful relationships between providers and recipients either upstream or downstream of supply chain. Customer linkage deals with the ability to communicate delivery of the right products and services to customers locally and globally at the right time, right place and right quantity with correct invoice. Customer linkage is mainly sharing product information with customers, accepting customer orders, interacting with customers to manage demand, having an order placing system, sharing order status with customers during order scheduling and product delivery phase (Lee et al., 2007).

Indeed, it has been further argued by Rothwell and Gardiner (1985) that there is scope for considerable gain through involving the user in the product design and development processes. These gains are believed to be four-fold. First, firms may be able to supplement their internal design and development activities by getting access to the technical and managerial skills of their customers. Second,

user involvement is likely to be the ideal way to establish the optimum price/performance combination and as a result, the optimum specification. Third, involving the user in the product design and development stages is likely to reduce the post-delivery learning required on their part (and accordingly, this may result in strong demonstration effects, attracting other customers and accelerating the innovation acceptance process). Finally, where user involvement stimulates a strong relationship, this may result in user feedback and associated product improvements that serve to lengthen the product life span (Freel, 2000). In practice, Freel (2003) found a significant positive relationship between having links with customers and new product innovations. Thus, the following hypothesis will be tested to contribute to the area with a different research context.

**H8a: There is a positive relationship between networking with customers and innovativeness.**

#### 2.5.3.2 Networking with Suppliers

Second type of vertical linkages is networking with suppliers. Supplier linkage deals with strategic linkages with suppliers, involving suppliers in design stage in new product introductions, in production planning and management of inventory, developing a rapid response order processing system with suppliers, placing a supplier network that guarantees reliable delivery and exchanging information with suppliers (Lee et al., 2007). Turnbull et al. (1992) mentioned that bought-out items account for over 50 percent of total costs for the average UK manufacturing firm adding that this proportion is even higher in automotive industry. Therefore, it is obvious that supplier relationship has an important role in determining competitiveness and ultimately, innovative capability.

In their review, Rothwell and Dodgson (1991) found that in the case of significant innovation, 10% of innovations involved collaboration with customers only, compared with 55% that involved collaboration with both customers and suppliers. Ramcharran (2001) also explored the degree of linkages between

automotive parts suppliers and automobile manufacturers and found that significant linkages are demonstrated by high correlation coefficients of the P/E (price-to-earnings) ratio of auto parts suppliers and auto manufacturers. From the review of literature, it can be concluded that networking with suppliers is beneficial for firms in terms of being more innovative and gaining competitive advantage by reaching high profitability ratios. Therefore, following hypothesis will be tested in this study empirically.

**H8b: There is a positive relationship between networking with suppliers and innovativeness.**

#### 2.5.3.3 Networking with Competitors

First type of horizontal linkages is networking with competitors/other firms. When trying to innovate, firms face an important strategic consideration: Exploiting current competencies may provide short-term success, but can be an obstacle to the firm's long term viability by suppressing the detection of new competencies (Leonard-Barton, 1992; Levinthal& March, 1993). Many firms appear to exploit and explore at the same time (O'Reilly and Tushman, 2004). According to Millson et al. (1996), in order to overcome the limitations of internal resources, firms should make more use of formal and informal partnering arrangements with other firms to achieve their innovative goals. Strategic alliances provide a platform for organizational learning, giving partner firms access to new knowledge. Through shared decision making, execution of alliance tasks, mutual interdependence and problem solving; firms can learn with and from their partners. Actually, managing this relationship itself is a learning process (Inkpen&Tsang, 2005; Kale& Singh, 2007; Su et al., 2009). Other studies also suggested that the principal benefits to be gained through such collaborations involve complementing and supplementing internal product development efforts (Rothwell and Dodgson, 1991), cost and risk sharing (Dodgson,1994), accessing new markets and the transfer of both embedded technology and tacit knowledge (Karlsson and Olsson, 1998).

Although there are various advantages, firms are generally not willing to enter into such horizontal collaborative agreements because of the concerns over the appropriability and ownership of project outcomes. However, it is anticipated that the most innovative firms are significantly more likely to be involved in some form of innovation-related collaborative activity with firms outside the vertical value chain (Freel, 2000). This clear relationship was shown in biotechnology firms by many researchers (Baum et al., 2000; Shan et al., 1994; Walker, Kogut and Shan, 1997; Su et al., 2009). Therefore, it will be appropriate to test this association in Turkish context with the following hypothesis.

**H8c: There is a positive relationship between networking with competitors and innovativeness.**

#### 2.5.3.4 Networking with Universities

The second type of horizontal linkages is networking with universities. The collaboration with universities and research institutes enables firms to develop technological knowledge which can not be accomplished alone especially by the small enterprises (Bower, 1993). Academicians in universities also provide consultancy to ventures and offer opportunities for continuing education for professional employees (Reams, 1986; Saxenian, 1994). There are many examples illustrating the success of networks with universities. One example is the success of "Silicon Valley" due to its proximity to Stanford University (Acs, 1993). There is a tendency to establish techno parks adjacent to universities also in Turkey.

There are two principal reasons that support the notion that university links are likely to improve small firm innovative capability. First, it is argued that university research is a source of significant innovation-generating knowledge which diffuses initially through personal contacts to adjacent firms' (Acs et al., 1994). Second, it is suggested that small firms are able to fill the internal resource deficiencies by reaching university resource networks (Westhead and Storey, 1995). Therefore, as with other types of external linkages, small firms are able to

gain access to complicated technology and technical expertise whose direct employment is obstructed by internal resource limitations (Freel, 2000). Moreover, graduate students who participate in venture-related projects familiarize with the technology and are likely to move to the venture (Lee et al., 2001).

Empirical support to these theoretical explanations was offered by Wilkinson et al. (1996) who found that 90% of the most innovative firms in their study had formal links with universities. Freel (2003) found significant positive relationship between having university links and introducing new processes in a sample of 597 small and medium sized enterprises, whereas he found no significant relationship between networking with universities and introducing new products which was weird.

Based on previous studies and few empirical findings, a positive association is expected between networking with universities and firms' overall innovativeness. Therefore, following hypothesis will be tested in this study.

**H8d: There is a positive relationship between networking with universities and innovativeness.**

#### 2.5.3.5 Networking with Public Agencies

Last type of horizontal links is networking with public agencies including government or support agencies. Most of the time it is unclear what role enterprise support agencies and government can play, since the principal benefits to collaboration are thought as supplementing internal managerial and technical resources (Freel, 2000). However, Oughton (1997) suggested that the "encouragement of networking relationships between firms to establish collective economies of scale" is one of a number of worthy features of such organizations. These organizations provide specialist advice and information, or introductory service. Moreover, government employs the requisite expertise or has easy access to this expertise through its considerable resource networks. As an alternative, and

perhaps more realistically, government play a network management role. Briefly, it might be expected that innovative small firms are more likely to have had contact with public sector support agencies, government departments or trade associations (Freel, 2000). Empirically, Freel (2003) discovered the positive effect of having public sector links on product innovations. Accordingly, the following hypothesis will be tested in this study.

**H8e: There is a positive relationship between networking with public agencies and innovativeness.**

### 2.5.4 Control Variable

Before describing the methodology used to test the hypotheses, it should be emphasized that the intention in this study is not to examine a complete model of innovation but instead to investigate the role of some important variables- namely team composition variables, environmental scanning and networking activities- on innovativeness. In testing these hypotheses, it should be taken into account that there may be other variables which are correlated with innovation and need to be controlled for. Firm age, size and the sector that the firm operates in drew attention in the literature. However, no significant correlation was found between firm age and innovativeness, so this variable wasn't considered in the analysis. Size and sector were measured categorically in this study: therefore it was not very appropriate to add these variables as control variables. Therefore, another important variable which interestingly haven't taken much theoretical attention in literature namely team size was regarded as a control variable in this study.

#### 2.5.4.1 Team Size

Team size has been seen as a factor in organizational demography theory which may affect group composition and as a result the organizational outcomes (Ancona and Caldwell, 1992; Blau, 1977; Eisenhardt and Schoonhoven, 1990;

Thomas and Fink, 1963). Larger teams are likely to be more heterogeneous affecting the coefficient of variation.

Larger the teams, larger the resources and skills available to them in decision making. Larger size also enhances cognitive diversity which adds perspectives during strategy making (e.g. Bantel and Jackson, 1989; Brunninge et al., 2007). Therefore, it is likely that team size is positively correlated with team heterogeneity which in turn affects innovativeness of the teams. According to Bantel and Jackson (1989), positive correlation is especially likely to exist when the teams of interest are all relatively small, as in this study that focuses on entrepreneurial teams in SMEs. This is because in small teams, an increase of one additional person considerably increases the maximum amount of heterogeneity and average team values that is possible within the group. Therefore, team size will be regarded as a control variable in this study.

# CHAPTER III

# METHOD

This study investigated the effects of entrepreneurial team demographics, environmental scanning and networking activities on an organizational outcome; namely the innovativeness. In this chapter, sample characteristics, measures used, procedure followed and analyses conducted are presented.

## 3.1 Sample

The study was conducted in the largest Organized Industrial Site of Bursa, Turkey. A total of 136 companies from different sectors were determined as SMEs (SMEs are defined as the economic units that have less than 250 employees and less than 25 million TL net annual sales or financial statement (KOBI, 2009) utilizing the websites of Bursa Organized Industrial Site and KOSGEB (Small and Medium Industry Development Organization). Contact information of the companies was gathered from the websites and companies were informed about study. Out of the total number contacted, 119 responded positively to the request. However, only 77 of them returned the questionnaires back. Three of these questionnaires were eliminated since they were managed by a CEO only, not a team, or they didn't answer most of the questions. There were 74 usable responses finally, with a response rate of 62.18%.

## 3.2 Procedure

In order to increase the response rate, face-to-face meetings procedure was chosen although it was tiring to wander all the companies the sample. First of all, firms were divided into groups according to their locations and the firms near to each other were visited in the same day. When the author arrived to the company, firstly, she talked with the receptionist and explained the aim of study and asked for a meeting with the general manager or owner of the company. If the person was

available, then a face-to-face meeting was done; otherwise a questionnaire was left to Human Resources Department in order for general manager or owner to fill. The reason for the use of single respondent approach was based on the respondent's familiarity with the research topic and the information sought. More specifically, in the case of SMEs the views of a single respondent may, in fact, reflect those of the firm (Lyon et al., 2000).

In the meetings, author explained the aim of the study once again and asked the respondent to fill the all questions in the questionnaire. For the personnel information, general managers asked for the help of Human Resources or Personnel Departments. Completed questionnaires were collected in the same day or the day that was determined by the author. Some of the companies didn't accept a meeting before calling by a phone. Therefore, they were contacted by phone again and appointments were requested. Then, face to face meetings were performed.

As a whole, from the sample of 136 companies, 103 of them were contacted directly and 33 of them were contacted by phone. Of the 103 companies contacted directly, 86 of them expressed positive interest to the study. Of the 33 firms contacted by phone, 5 of them made an appointment and other 28 of them wanted to fill the questionnaires on-line, therefore questionnaires were sent to these 28 firms by e-mail. From the 86 companies, 67 of them returned the questionnaires back. All of the 5 companies contacted by phone and made an appointment filled the questionnaires. From the 28 companies that wanted to fill the questionnaires on-line, only 5 of them completed the questionnaires and sent back. Totally, 77 questionnaires were returned. Data collection process took about three weeks.

### 3.3 Measures

Questionnaires consisting of five main sections were prepared and printed for the companies. In the opening page, a brief explanation of the study was given to participants (Appendix A). In the first main part, information about the company

was collected (Appendix B). Then, necessary definitions about the terms that would be mentioned in following parts were given. Team demographics were asked in the second part (Appendix C). In the third and fourth parts, participants were asked to rate their companies' environmental scanning and innovativeness activities, respectively (Appendix D and E). In the last part, the questions whether the companies involved in innovative networking activities or not with related parties during the last three years were wanted to be answered by the participants (Appendix F). Before using the scales in questionnaires, authors that were originally used these scales were contacted via e-mail and necessary permissions were taken from them. The questions and scales used in the questionnaire were all translated from English to Turkish by the researcher first and then by two managers working in the industry. After the necessary corrections, questionnaire was controlled by another top manager and the advisor of this study. Few changes were done and questionnaire became ready to be printed and distributed.

### 3.3.1 General Company Information

In the first part of the questionnaire, six questions were asked to the participants. In the preparation of these questions, website of KOSGEB and the study of Henneke and Lüthje (2007) were utilized. First question was asking the year the company founded. From the answers, age of the firms were found by subtracting the year of foundation from current year and used in the analysis. Second question was about the activity area of the companies. There were mainly six categories as was in Henneke and Lüthje (2007)'s study which was conducted in high-tech sectors, namely information technologies, biotechnology, environmental, pharmaceuticals, advanced manufacturing and automotive. From the firms that are in other areas, it was asked to write their activity areas in others section. Third question was about the type of the firm; whether the firm is producer, seller, exporter or importer. Firms that operate as more than one category signed two, three or all of the boxes. Fourth question was asking the annual turnover of the companies in the ranges as smaller than 10000, between 10000 and 50000, between 50000 and 100000, between 100000 and 250000, between 250000

and 500000, between 500000 and 1000000, between 1000000 and 5000000 and larger than 5000000. In the fifth question, number of personnel in the companies was asked with the ranges as between 1 and 9, between 10 and 24, between 25 and 49, between 50 and 99, between 100 and 149 and between 150 and 250. Lastly, the status of the firm was asked and participants described their companies as sole proprietorship, open partnership, incorporated company, ordinary partnership and limited company.

### 3.3.2 Management Team Composition

In this part, the first question was about the acquaintance of the team members. Participants were asked to tell how they met and chose one of the boxes considering their acquaintance as friends from university, friends in general, colleagues from university, colleagues from prior ventures, introduced through investors, multiple or other. Then, the number of people in the current management team was asked in order to determine the team size. Afterwards, for each team member the following information was collected: a) gender; b) current age; c) education level attained; d) occupation; e) tenure in the company and f) total tenure.

For c), education level attained, six categories were provided as elementary school, high school, two-year degree, college degree, masters' degree and doctorate degree. However, for the analyses, these categories were turned to continuous variables by recoding the members that have elementary education as 8 years, high school education as 11 years, two year degree as 13 years, college degree as 16 years, masters' degree as 18 years and doctorate degree as 22 years.

For the members that have at least undergraduate degree, their educational backgrounds (specialties) were asked by providing five main categories such as engineering/science, general business, finance/accounting, marketing/sales and law. Others option was provided for the participants that have different curricula. In order to have information about functional backgrounds of team members,

number of people that had prior working experience related to management, marketing/sales, finance/accounting, operations/production and research and development was asked. Others option was again provided.

Team variables that were used in the analyses such as average age, average organizational tenure and average number of years of education were calculated by summing the members' values and dividing it by the number of members in the teams. For team heterogeneity variables, two different approaches were utilized. For interval data, Allison (1978) observed that the coefficient of variation (the standard deviation divided by the mean) provides a direct method for obtaining a scale invariant measure of dispersion. In this study, it was appropriate for interval level variables with a theoretically fixed zero point and was used for age and organizational tenure. For categorical variables, such as gender, educational background and functional background, Blau's (1977) index of heterogeneity (1- $\Sigma p_i^2$ ) was used, where p is the proportion of group members in a category and i is the number of different categories represented in the team. For the curvilinear relationships between average age, average organizational tenure and innovativeness, both squared and logarithmic versions were tried and as a result, it was found that taking square of average age and taking logarithm of organizational tenure worked well.

### 3.3.3 Environmental Scanning

The firms' environmental scanning activities were measured with nine items using a rating on a seven-point Likert-type scale ("1" for never used, "4" for occasionally used and "7" for always used) (Henneke and Lüthje, 2007). Of the nine items, four of them were related with the activities to gather market information, three of them were referred to scanning of the technological environment and two of them were associated with the external exploration of funding for the capital required to develop innovative products or processes. These items were taken from scales developed by Miller and Friesen (1982) and Crick and Jones (1999). Before calculating an index for environmental scanning,

reliability of the scale was measured. Then, an index was calculated by taking the mean of the items. Cronbach's α for the environmental scanning scale resulted in a value of $\alpha_{ES} = 0.865$. This value of alpha is sufficient according to Nunnally (1978), therefore the reliability of the scale is supported.

### 3.3.4 Organizational Innovativeness

In order to measure firms' organizational innovativeness, Wang and Ahmed (2004)'s confirmed organizational innovativeness construct was adopted. There were 20 items in their construct related with product, market, process, behavioral and strategic innovativeness, but overall the scale was measuring the organizational innovativeness. From these 20 items, one item was eliminated since it was prepared for employees and so it wouldn't appropriate to ask this item to managers (We get a lot of support from managers if we want to try new ways of doing things). Items 1, 2, 5 and 6 are related with product innovativeness, items 3, 4, 7 and 8 are related with market innovativeness, items 10, 11, 12 and 19 are related with process innovativeness, items 15, ,16 and 17 are about behavioral innovativeness and items 9, 13, 14 and 18 are related with strategic innovativeness. Four of these 19 items were reverse items; therefore they were handled accordingly before the analyses. Six- point Likert scale ranging from 1- strongly disagree, 2- disagree, 3- slightly disagree, 4- slightly agree, 5- agree and 6- strongly agree was used to rate the items. In the original construct, a neutral response "neither disagree nor agree" was adopted to reduce uninformed response. However, since the respondents were general managers or owners of the firms in this study, they were all aware of the activities in their firms and by not using this neutral response, they were forced to rate the items. Andrews' (1984) work also suggested that scales with mid-points may be less reliable.

Cronbach's α for the scale consisting of 19 items resulted in a value of $\alpha_{OI} = 0.895$ which is acceptable according to Nunnally (1978).

### 3.3.5 Networking Activities

Whether firms involved in networking activities or not were found by directing five separate questions to respondents as in Freel (2003). Cooperation with customers, suppliers, competitors, universities and public agencies (such as EU, TUBITAK, KOSGEB, government offices, other support agencies, e.g) for innovation-related activities were determined by forming binary dummy variables. If firms cooperated with their customers for innovation related activities during the last three years, they were coded as 1; otherwise they were coded as 0. Same procedure was applied for the questions related with suppliers, competitors, universities and public agencies.

## 3.4 Analyses

In the following part, data will be analyzed accordingly in order to test the hypotheses. Firstly, correlation analysis will be applied to see the congruence between variables. The hypotheses in this study necessitate multiple regressions since there are various predictors that are thought to affect organizational innovativeness of SMEs. Sample size of the study might be seen as insufficient to use lots of predictors and decrease the statistical power. However, by using adjusted R square, this handicap was tried to be eliminated because adjusted R square includes some penalty for using lots of predictors (In regression, how does the sample size affect the R squared value?,2009). Multiple regressions will be carried out to test the hypotheses from 1 to 8 using SPSS 15.0.

One question may arise about why factor structure of the organizational innovativeness was not examined. The reason is that the aim of this study to measure innovativeness of firms considering all dimensions of innovativeness. Therefore, since the effect of top management team demographics, environmental scanning and networking on overall innovativeness will be investigated in this research, factor analysis wasn't performed and internal consistency result also satisfied this study's aim.

# CHAPTER IV

# ANALYSIS

## 4.1 Data Screening

Prior to analysis, data were examined for accuracy of data entry and missing values. It was seen that data were entered correctly, however there were missing values in some of the variables. Missing values were handled in two ways: Firstly, the missing values in variables that were dependent to prior variables were taken into account and they were coded as -2 meaning that answer for these questions were not applicable. For instance; if a team was consisting of two members, then gender of the third member can not be answered and coded as -2. Secondly, the real missing values were coded as -1. Then, both -1 and -2 were defined as discrete missing values under missing label. From the raw data consisting of 77 firms, 3 of them were deleted directly. One of these 3 cases was managed by a single person only, not a team; therefore, it was not appropriate for this study. Other two were eliminated, because the missing values were systematic. Since the sample size was small, missing data in indexes were handled by mean substitution. Educational and functional background heterogeneity variables were deleted since more than 5% of the firms had missing values for these variables.

After handling missing data, indexes and scales that would be used in the analyses were created. Multivariate assumptions were checked and they were all satisfied. There was neither multivariate nor univariate outliers. Moreover, normality, linearity and homoscedasticity were all fulfilled. Also, there was neither multicollinearity nor autocorrelation in the cleaned data set.

## 4.2 Descriptive Statistics

### 4.2.1 Descriptive Statistics of Firms and Teams

SMEs from different sectors formed the sample of the present study. 20.3% of these companies are in textile sector, 28.4% are in automotive sector, 10.8% are in chemical groups sector, 8.1% are in information technologies sector, 8.1% are in metal/rubber/packaging sector and 24.3% are in other businesses such as construction, printing, heating-cooling systems, logistics and consultancy. The average age of the companies was 18 years with a median of 14.5 years. 73.3% of the companies have employees less than 50 showing that sample is consisting of small companies with few exceptions. 43.2% of these firms are producer, 20.3% are seller, 2.7% are importer and 33.8% are multiple. More than half of these companies have annual turnover larger than 500000. In terms of status, 12.2% of these firms are sole proprietorship, 1.4% is open partnership, 28.4% are incorporated company and 58.1% are limited company.

The proportion of different team formation modes in the sample are illustrated in Figure 4.1. More than half of the teams (54.1%) were formed drawing upon family members and friends. Some 24.3 per cent of all teams emerged out of groups that had professional relations prior to firm's foundation. Only 4.1 percent of teams were formed under the lead of an investor. These results showed that Turkish SMEs chose their top management team members with whom they have emotional kinship rather than emphasizing professional relations (Westhead et al, 2001).

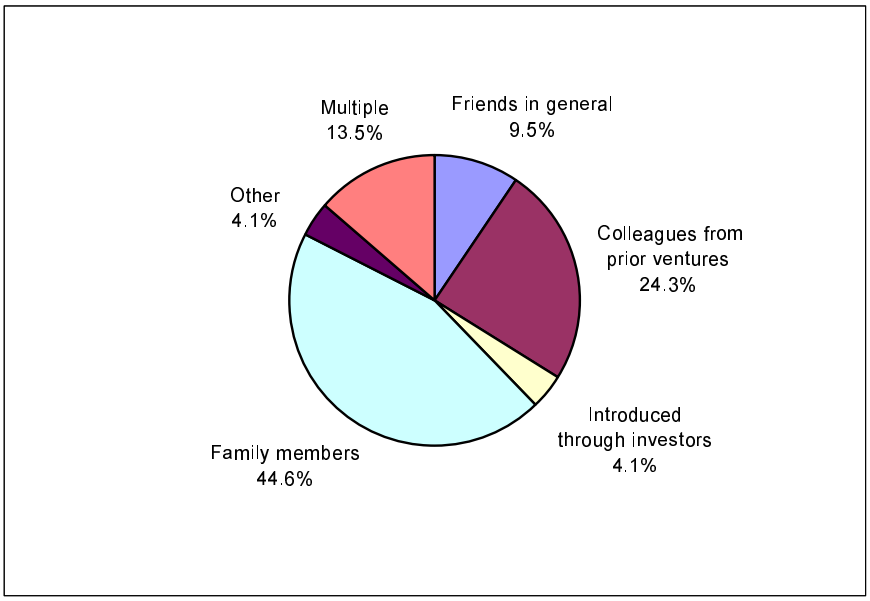


**Figure 1.** Proportion of team formation modes

The top management teams of the SMEs ranged in size from two to twelve members, with average size being 4.04 (SD= 2.49). Totally, there were 299 members in 74 teams. However, because of the missing variables, following descriptive statistics will be given out of the available data in Table 4.1. Therefore, between the variables, number of people may change, but in the analysis they will be handled after mean substitution of missing data. Of the 290 top management team members, 74.8% was male; remaining 25.2 % was female showing that top management teams are dominated by men. The average age of the 272 team members was 43.86 (SD= 7.62). They had been employed at their current firms 11.17 years on average (SD=6.73), and they had an average of 18.68 years of work experience (SD= 7.90). Operations/production, management, marketing/sales, finance/accounting and R&D backgrounds form the top managers' work experiences with 27%, 26%, 19%, 15% and 13% respectively. Education levels attained varied considerably, as follows: elementary school (15.2%), high school (25.9%), two-year degree (10%), college degree (37.2%), master's degree (10%) and doctoral degree (1.7%).

**Table 4.1.** Descriptive statistics for team members

| Variable | Frequency | % |
|---|---|---|
| **Gender (N=290)** | | |
| Male | 217 | 74.8 |
| Female | 73 | 25.2 |
| **Age (N=272)** | | |
| 20-30 | 36 | 13.2 |
| 31-40 | 88 | 32.4 |
| 41-50 | 79 | 29.0 |
| Above 51 | 69 | 25.4 |
| | **Mean= 43.86** | **SD= 7.62** |
| **Education (N=290)** | | |
| Elementary school | 44 | 15.2 |
| High school | 75 | 25.9 |
| Two-year degree | 29 | 10.0 |
| College degree | 108 | 37.2 |
| Master's degree | 29 | 10.0 |
| Doctoral degree | 5 | 1.7 |
| **Tenure in the company (N= 267)** | | |
| 0-1 year | 14 | 5.2 |
| 2-5 years | 71 | 26.6 |
| 6-10 years | 78 | 29.2 |
| 11-15 years | 39 | 14.6 |
| 16-20 years | 21 | 7.9 |
| More than 21 | 44 | 16.5 |
| | **Mean=11.17** | **SD= 6.73** |
| **Tenure in general (N=248)** | | |
| 0-1 year | 5 | 2 |
| 2-5 years | 19 | 7.7 |
| 6-10 years | 46 | 18.5 |
| 11-15 years | 43 | 17.3 |
| 16-20 years | 37 | 14.9 |
| More than 21 | 98 | 39.5 |
| | **Mean= 18.68** | **SD= 7.90** |

From the members that have at least college degree, 41% have technical education such as engineering or science whereas 59% have non-technical education in the areas of general business, finance/accounting, marketing/sales or law. Firms' engagement in environmental scanning activities reported with a mean of 4.70 (SD= 1.36). Most of the firms try to build networks with their customers (78.4%) and suppliers (77%), whereas networking with competitors (24.3%), universities (21.6%) and public agencies (36.5%) are less frequent as given in Table 4.2.

**Table 4.2.** Means and standard deviations of firms' networking activities

| Items | Mean | Std. Deviation | % | N |
|---|---|---|---|---|
| Network1- Networking with customers for innovative activities during past 3 years | 0.78 | 0.41 | 78.4% | 74 |
| Network2- Networking with suppliers for innovative activities during past 3 years | 0.77 | 0.42 | 77.0% | 74 |
| Network3- Networking with competitors for innovative activities during past 3 years | 0.24 | 0.43 | 24.3% | 74 |
| Network4- Networking with universities for innovative activities during past 3 years | 0.22 | 0.41 | 21.6% | 74 |
| Network5- Networking with public agencies for innovative activities during past 3 years | 0.36 | 0.48 | 36.5% | 74 |

### 4.2.2 Descriptive Statistics of Constructs

#### 4.2.2.1 Environmental Scanning Construct

In the measures part, it was said that environmental scanning was measured with nine items. Of the nine items, first four of them were related with the activities to gather market information, following three were referred to scanning of the technological environment and last two were associated with the external exploration of funding for the capital required to develop innovative products or processes.

When the ratings on these items were evaluated in Table 4.3 , it was seen that entrepreneurial teams reported the highest value to item 1, “routine gathering of opinions from customers”, ($\underline{M}$ = 5.8028, SD= 1.5843) which shows that the firms most frequently take feedback from their customers about the products or services they offer. Item 7, “information exchange with academic researchers”, was the least frequently applied method within firms in order to perform environmental scanning ($\underline{M}$ = 3.6143, SD=2.1345). From a general perspective, it was seen that entrepreneurial teams gave importance to the market related information at most, external exploration of funding at second and scanning of technological environment at least. The reason for this kind of behaviour might be the fact that these firms are SMEs. Financial performance is more vital since they are small firms and they have limited resources and capital. Thus, they try to follow the trends in the market to survive and sustain profitability. Moreover, they search for the potential investors and take financial advices in order to generate resources. As a result, the priority for technological scanning starts to fall behind these. However, technological environment scanning is equally important for long-term success and when firms completed their requirements for financial growth; they should turn their faces to this side.

**Table 4.3.** Means and standard deviations of the items in environmental scanning construct

| Items | Mean | Std. deviation | Alpha if item deleted | N |
|---|---|---|---|---|
| Envscan1- routine gathering of opinions from customers | 5.8028 | 1.5843 | 0.852 | 74 |
| Envscan2- explicit tracking of activities and tactics from competitors | 5.2958 | 1.8828 | 0.873 | 74 |
| Envscan3- sales forecasting | 5.4225 | 1.7878 | 0.855 | 74 |
| Envscan4- special market research studies | 5.0714 | 1.8456 | 0.841 | 74 |
| Envscan5- scientific literature | 4.5143 | 2.1051 | 0.857 | 74 |
| Envscan6- the knowledge of external industry experts | 3.9275 | 2.0361 | 0.848 | 74 |
| Envscan7- information exchange with academic researchers | 3.6143 | 2.1345 | 0.844 | 74 |
| Envscan8- specific monitoring or surveying approaches to identify new potential investors | 4.0145 | 2.1164 | 0.841 | 74 |
| Envscan9- external financial knowledge in terms of professional advice | 4.600 | 2.0367 | 0.842 | 74 |

#### 4.2.2.2 Organizational Innovativeness Construct

As was mentioned before, organizational innovativeness was measured by 19 items. Of these 19 items, item 4, "new products and services in our company often take us up against new competitors", ($\underline{M}$ = 4.8116, SD=1.3167) took the highest value, whereas item 7, "in comparison with our competitors, our products' most recent marketing programme is revolutionary in the market", ($\underline{M}$ = 3.3088, SD=1.4070) took the lowest value from top management teams as presented in Table 4.4.

In general, it was seen from the ratings of firms that they are not very assertive about the products they offer. However, at the same time, they see themselves better performers than their competitors. This is somehow

contradictory. In terms of behavioral or process innovativeness, most of the entrepreneurial teams are open to new ideas and try new processes or management approaches in their companies.

**Table 4.4.** Means and standard deviations of the items in organizational innovativeness construct.

| Items | Mean | Std. deviation | Alpha if item deleted | N |
|---|---|---|---|---|
| Innov1- In new product and service introductions, our company is often first-to-market. | 3.8592 | 1.4363 | 0.884 | 74 |
| Innov2- Our new products and services are often perceived as very novel by customers. | 3.5797 | 1.5825 | 0.885 | 74 |
| Innov3- Our recent new products and services are only minor changes from our previous products and services (R). | 3.4143 | 1.3293 | 0.905 | 74 |
| Innov4- New products and services in our company often take us up against new competitors. | 4.8116 | 1.3167 | 0.886 | 74 |
| Innov5- In comparison with our competitors, our company has introduced more innovative products and services during the past five years. | 4.7324 | 1.3544 | 0.881 | 74 |
| Innov6- In comparison with our competitors, our company has a lower success rate in new products and services launch(R). | 4.5652 | 1.3797 | 0.891 | 74 |
| Innov7- In comparison with our competitors, our products' most recent marketing programme is revolutionary in the market. | 3.3088 | 1.4070 | 0.887 | 74 |
| Innov8- In new product and service introductions, our company is often at the cutting edge of technology. | 4.3099 | 1.4391 | 0.885 | 74 |
| Innov9- Our firms' R&D or product development resources are not adequate to handle the development need of new products and services (R). | 4.3333 | 1.5674 | 0.898 | 74 |
| Innov10- We are constantly improving our business processes. | 4.8028 | 1.1660 | 0.884 | 74 |
| Innov11- Our company changes production methods | 4.2794 | 1.3833 | 0.883 | 74 |

| | | | | |
|---|---|---|---|---|
| at a great speed in comparison with our competitors. | | | | |
| Innov12- During the past five years, our company has developed many new management approaches. | 4.1029 | 1.4910 | 0.883 | 74 |
| Innov13- Key executives of the firm are willing to take risks to seize and explore "chancy" growth opportunities. | 3.9859 | 1.5746 | 0.885 | 74 |
| Innov14- Senior executives constantly seek unusual, novel solutions to problems via the use of "idea men". | 4.1286 | 1.4422 | 0.887 | 74 |
| Innov15- In our company, we tolerate individuals who do things in a different way. | 3.9857 | 1.5919 | 0.888 | 74 |
| Innov16- We are willing to try new ways of doing things and seek unusual, novel solutions. | 4.7714 | 1.1001 | 0.886 | 74 |
| Innov17- We encourage people to think and behave in original and novel ways. | 4.6087 | 1.1846 | 0.887 | 74 |
| Innov18- When we see new ways of doing things, we are last at adopting them (R). | 4.6571 | 1.3936 | 0.886 | 74 |
| Innov19- When we can not solve a problem using conventional methods, we improvise on new methods. | 4.4203 | 1.2096 | 0.894 | 74 |

### 4.3 Correlation Analysis

Table 4.5 presents Pearson bivariate correlations for the fourteen variables in the study. Correlation coefficients range between -0.270 and 0.579. The findings show that organizational innovativeness is significantly correlated only with two and weakly correlated with one of the six team composition variables. These correlations are consistent with past research. Innovativeness is negatively correlated with average age ($p< 0.05$). As predicted from research on communication process and dysfunctional conflict, innovativeness is negatively correlated with age heterogeneity ($p< 0.05$). Innovativeness is positively correlated with average education level as expected ($p< 0.1$, weak). Other team variables such as gender heterogeneity, average organizational tenure and organizational tenure heterogeneity are not even weakly correlated with innovation ($p> 0.1$).

Environmental scanning is significantly correlated with innovativeness. As expected and also found in Henneke and Lüthje (2007)' study, innovativeness is positively linked with environmental scanning ($p < 0.001$).

All of the networking variables are significantly correlated with innovativeness. There are positive correlations between innovativeness and networking with customers ($p<0.01$), networking with suppliers ($p<0.01$), networking with competitors ($p < 0.05$), networking with universities ($p < 0.05$) and networking with public agencies ($p < 0.01$), respectively.

**Table 4.5.** Intercorrelations for variables assessed in the study

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Organizational innovativeness | | | | | | | | | | | | | |
| 2. Gender heterogeneity | 0.103 | | | | | | | | | | | | |
| 3. Average age | -0.268* | 0.059 | | | | | | | | | | | |
| 4. Age heterogeneity | -0.270* | -0.179 | 0.098 | | | | | | | | | | |
| 5. Average organizational tenure | -0.060 | 0.236* | 0.524** | 0.046 | | | | | | | | | |
| 6. Organizational tenure heterogeneity | 0.027 | 0.012 | -0.058 | 0.341** | 0.272* | | | | | | | | |
| 7. Average number of years of education | 0.224[a] | 0.019 | -0.172 | 0.066 | 0.033 | 0.188 | | | | | | | |
| 8. Environmental scanning | 0.579** | -0.036 | -0.151 | -0.255* | 0.069 | -0.040 | 0.188 | | | | | | |
| 9. Networking with customers | 0.389** | 0.177 | -0.213[a] | -0.133 | 0.029 | -0.112 | 0.373** | 0.397** | | | | | |
| 10. Networking with suppliers | 0.408** | -0.003 | -0.080 | -0.057 | -0.012 | -0.145 | 0.308** | 0.424** | 0.572** | | | | |
| 11. Networking with competitors | 0.285* | 0.131 | -0.115 | -0.160 | 0.057 | -0.128 | 0.087 | 0.177 | 0.298** | 0.310** | | | |
| 12. Networking with universities | 0.269* | -0.020 | -0.092 | 0.085 | -0.037 | -0.003 | 0.348** | 0.115 | 0.116 | 0.287* | 0.161 | | |
| 13. Networking with public agencies | 0.404** | 0.117 | -0.221[a] | -0.094 | -0.119 | -0.003 | 0.205[a] | 0.240* | -0.011 | 0.147 | -0.168 | 0.147 | |
| 14. Team size | 0.285* | 0.107 | -0.056 | 0.066 | 0.037 | 0.355** | 0.068 | 0.186 | 0.102 | -0.108 | 0.003 | -0.035 | 0.124 |

[a] $p < 0.1$; * $p < 0.05$; ** $p < 0.01$.

### 4.4 Regression Analyses

The relationships between team composition, scanning and networking activities and innovativeness were examined after controlling for another potential predictor of innovativeness, team size. For this purpose, four separate regression analysis were performed. In the first regression analysis, individual effect of team composition variables on innovativeness was investigated after controlling for team size. In the second regression analysis, impact of environmental scanning on innovativeness was measured after controlling for team size. In the third regression analysis, the influence of networking variables on innovativeness was searched again controlling for team size in the first step. Lastly, all independent variables were entered in the same step in order to see the changes in beta weights while explaining innovativeness. Detailed results of these analyses are shown in Table 4.6, 4.7, 4.8 and 4.9. The beta coefficients or standardized regression coefficients represent the strength of the unique relationship between a predictor variable and innovativeness after controlling for the effects of the other predictor variables in regression model at that step. The $R^2$ statistics represent the amount of variation in innovativeness that is explained by all the predictor variables in the regression model at that step.

#### 4.4.1 The Relationship between Team Size and Innovativeness

Recent research has found that the relationship between team size and innovativeness is positive in SMEs (e.g. Brunninge et al., 2007). Therefore, team size was analyzed in the first step as a control variable in all regression analyses. As expected, $\underline{R}$ for regression was significantly different from zero for this step ($\underline{F}$ (1, 72) = 6.377, $p < 0.05$). The result of regression analysis in this step showed that team size is positively associated with organizational innovativeness ($\beta = 0.285$, $p<0.05$). Of the total variance in each regression analysis, 8.1% was explained by team size ($R^2_{change} = 0.081$, $p < 0.05$).

### 4.4.2 The Relationship between Team Composition Variables and Innovativeness

In first regression analysis, innovativeness was regressed on team composition variables. As shown in Table 4.6, $\underline{R}$ for regression was significantly different from zero for this step ($\underline{F}$ (7, 66) = 3.237, p< 0.01). From the team composition variables, age heterogeneity was found to predict innovativeness negatively ($\beta$= -0.265, p<0.05) whereas average education level of teams had a positive effect on innovativeness ($\beta$= 0.186, p<0.1, weak). Of the total variance of 25.6% (17.7% adjusted), 17.4% was explained by team composition variables ($R^2_{change}$= 0.174, p< 0.05).

**Table 4.6.** Results of regression analysis estimating the relationship between entrepreneurial team composition and innovativeness in SMEs.

| | Organizational innovativeness | | | | | |
|---|---|---|---|---|---|---|
| **Variables** | ***R*** | ***$R^2$*** | ***Adjusted $R^2$*** | ***$R^2$ change*** | ***F*** | ***β*** |
| **Control variable** | 0.285 | 0.081 | 0.069 | 0.081* | 6.377* | |
| Team size | | | | | | 0.285* |
| **Team composition variables** | 0.506 | 0.256 | 0.177 | 0.174* | 3.237** | |
| Gender heterogeneity | | | | | | 0.029 |
| Average age (squared) | | | | | | -0.219 |
| Age heterogeneity | | | | | | -0.265* |
| Average organizational tenure (log) | | | | | | 0.023 |
| Organizational tenure heterogeneity | | | | | | -0.043 |
| Average number of years of education | | | | | | 0.186[a] |

[a] p< 0.1; * p< 0.05; ** p< 0.01; *** p< 0.001, Standardized coefficients are reported. N=74.

### 4.4.3 The Relationship between Environmental Scanning and Innovativeness

In the second regression analysis, innovativeness was regressed on the scanning variable, environmental scanning. As was found in past research (e.g. Hurley and Hult, 1998; Crick and Jones, 1999; Henneke and Lüthje, 2007), environmental scanning is linked with innovativeness positively ($\beta$= 0.545, p<0.001) resulting in significant $\underline{R}$ value for this step ($\underline{F}$ (2, 71) = 20.659, p< 0.001) as illustrated in Table 4.7. From the total variance of 36.8% (35% adjusted), environmental scanning explained 28.7% ($R^2_{change}$= 0.287, p< 0.001).

**Table 4.7.** Results of regression analysis estimating the relationship between environmental scanning and innovativeness in SMEs.

| | Organizational innovativeness | | | | | |
|---|---|---|---|---|---|---|
| **Variables** | ***R*** | ***$R^2$*** | ***Adjusted $R^2$*** | ***$R^2$ change*** | ***F*** | ***β*** |
| **Control variable** | 0.285 | 0.081 | 0.069 | 0.081* | 6.377* | |
| Team size | | | | | | 0.285* |
| **Scanning variable** | 0.607 | 0.368 | 0.350 | 0.287*** | 20.659*** | |
| Environmental scanning | | | | | | 0.545*** |

[a] p< 0.1; * p< 0.05; ** p< 0.01; *** p< 0.001, Standardized coefficients are reported. N=74.

### 4.4.4 The Relationship between Networking Activities and Innovativeness

This step indicated significant relationships between networking variables and innovativeness. As shown in Table 4.8, $\underline{R}$ for regression was significantly different from zero ($\underline{F}$ (6, 67) = 9.259, p< 0.001). Innovativeness was positively predicted by networking with customers ($\beta$= 0.194, p<0.1, weak), networking with competitors ($\beta$= 0.218, p<0.05) and networking with public agencies ($\beta$= 0.372, p<0.001). Networking variables explained 37.5% of the total variance ($R^2_{change}$= 0.375, p<0.001).

**Table 4.8.** Results of regression analysis estimating the relationship between networking activities and innovativeness in SMEs.

| | Organizational innovativeness | | | | | |
|---|---|---|---|---|---|---|
| **Variables** | ***R*** | ***$R^2$*** | ***Adjusted $R^2$*** | ***$R^2$ change*** | ***F*** | ***β*** |
| **Control variable** | 0.285 | 0.081 | 0.069 | 0.081* | 6.377* | |
| Team size | | | | | | 0.285* |
| **Networking variables** | 0.676 | 0.457 | 0.408 | 0.375*** | 9.259*** | |
| Networking with customers | | | | | | 0.194[a] |
| Networking with suppliers | | | | | | 0.167 |
| Networking with competitors | | | | | | 0.218* |
| Networking with universities | | | | | | 0.117 |
| Networking with public agencies | | | | | | 0.372*** |

[a] p< 0.1; * p< 0.05; ** p< 0.01; *** p< 0.001, Standardized coefficients are reported. N=74.

### 4.4.5 Results When All Predictors Entered Together

In previous three regression analyses, individual effects of team composition, environmental scanning and networking on innovativeness were demonstrated. However, the impact of these variables together was not measured.

In Table 4.9, the result of entering all independent variables at the same time was shown. According to this table, $\underline{R}$ for regression was significantly different from zero ($\underline{F}$ (13, 60) = 6.206, p< 0.001). From team composition variables, only age heterogeneity predicted innovativeness, negatively ($\beta$= -0.169, p<0.1, weak). Innovativeness was positively predicted by environmental scanning ($\beta$= 0.300, p<0.01), networking with competitors ($\beta$= 0.174, p<0.1, weak) and networking with public agencies ($\beta$= 0.283, p<0.01). Variables together better explained innovativeness than they individually did. Variance explained by all variables is 49.2% ($R^2_{change}$= 0.492, p< 0.001) with a total variance of 57.4% (48.1% adjusted). Beta weights differed importantly in three individual regressions and the last regression showing the probability of interactions between variables.

**Table 4.9** Results of regression analysis estimating the relationships between entrepreneurial team composition, environmental scanning and networking activities and innovativeness in SMEs.

| | Organizational innovativeness | | | | | |
|---|---|---|---|---|---|---|
| **Variables** | ***R*** | ***$R^2$*** | ***Adjusted $R^2$*** | ***$R^2$ change*** | ***F*** | ***β*** |
| **Control variable** | 0.285 | 0.081 | 0.069 | 0.081* | 6.377* | |
| Team size | | | | | | 0.285* |
| **All independent variables** | 0.757 | 0.574 | 0.481 | 0.492*** | 6.206*** | |
| Gender heterogeneity | | | | | | 0.005 |
| Average age (squared) | | | | | | -0.038 |
| Age heterogeneity | | | | | | -0.169[a] |
| Average organizational tenure (log) | | | | | | -0.056 |
| Organizational tenure heterogeneity | | | | | | 0.120 |
| Average number of years of education | | | | | | -0.073 |
| Environmental scanning | | | | | | 0.300** |
| Networking with customers | | | | | | 0.129 |
| Networking with suppliers | | | | | | 0.111 |
| Networking with competitors | | | | | | 0.174[a] |
| Networking with universities | | | | | | 0.157 |
| Networking with public agencies | | | | | | 0.283** |

# CHAPTER V

# DISCUSSION

## 5.1 Overview

The aim of the present study is to investigate the causal relationships between team composition variables and innovativeness, environmental scanning and innovativeness and firms' networking activities and innovativeness. In the following sections, first of all, an explanation for single respondent approach will be done because this might create question marks in readers' minds. Then, after briefly reviewing the sample characteristics and descriptive statistics, findings concerning the constructs and hypotheses will be discussed. Implications of the findings will be given within each part and this chapter will end with strengths and weaknesses of the study and lastly the directions for future research.

## 5.2 An Explanation to Single Respondent Approach

The use of single respondent to make inferences about an organization's situation is widespread in strategy research. The two most often cited contributions are by Snow and Hrebiniak (1980) and Hambrick (1981). Although their views are similar in many respects, Snow and Hrebiniak promote the use of any top manager, while Hambrick strongly advises the use of only the CEO when researchers have no option but to access only one unique respondent.

According to Snow and Hrebiniak (1980), top managers have the advantage to view the entire organizational system better than lower level managers. Hambrick agrees with this, however he includes in the lower-level manager group all managers except the CEO and he asserts that: "researchers who attempt to identify an organization's actual strategy by asking executives other than chief executives may receive considerably less accurate information than might have been presumably assumed". Moreover, in Bowman and Ambrosini's (1997) study on single respondent approach, it was stated that several authors argue that it is

justifiable to use an organization's CEO as a single source of information if the business is small, specialized or not diversified.

The use of single respondent approach has been criticized due to probable disagreements among managers. Bowman and Ambrosini (1997) argued that if there is a lack of consensus in firms about strategic dimensions, then relying on a single respondent for anything other than factual, objective information may be misleading. Boyer and Verma (2000) also went into detail on the desirability of research designs with multiple respondents. However, as Pagell and Krause (2005) mentioned, such designs have costs. Not only will the actual costs of data collection increase, but there is also evidence that (e.g., Carter, 2000) response rates for studies with multiple respondents are lower than response rates for studies with a single respondent. In other words, researchers pursuing designs with multiple respondents will have increased costs, and may trade inter-rater reliability for sample size and generalizability.

In some part of this study, it might be expected to collect data from all members of entrepreneurial teams since the relation between team demographics and innovativeness was measured. Dependent variable reflected general managers' or owners' view, however, independent variables reflected group characteristics. In fact, it would have probably been more accurate if questionnaires had distributed to and gathered from all members and the average innovativeness was calculated and taken into analysis. However, due to cost and time factors and in order to increase response rate, the most knowledgeable person (general manager/owner) was chosen to fill the questionnaire. Since the firms chosen were SMEs, single respondent approach can be justified based on the literature. If independent variables were scale variables or based on psychological characteristics of each team member instead of demographic information, this study would be more problematic. However, in literature also, it was realized that most of the time, questionnaires were filled by the most knowledgeable person only.

## 5.3 Sample Characteristics and Descriptive Findings

Sample characteristics were investigated in order to compute team composition variables. Majority of the entrepreneurial team members were male and at the age below 50. More than half of them had an education level less than college degree. More than half of them had less than 10 years of experience in their current companies. Of these members most of them had less than 10 years of experience in total showing that they started their managerial careers in the companies they were currently working for. This can be associated with the team formation mode because more than half of these teams were formed drawing upon family members or friends. Therefore, most of these team members started to work in their families' companies or with friends when they entered into business life. However, it is found that this approach decreased the innovativeness of firms.

Teams that are formed based on professional relationships ($\underline{M}$= 4.43) are more innovative than teams formed of family members or friends ($\underline{M}$=4.09) with ($\underline{F}$=3.260, p< 0.1). The reason for that was explained in Brunninge et al. (2007) as family ownership impedes strategic change activities, such as innovation, venturing and strategic renewal activities, as a result of the risk aversion of the concentrated ownership, altruistic incentives and problems with self-control.

## 5.4 Results of Hypotheses Testing

### 5.4.1 Team Composition Variables

In this study, aspects of team composition were examined in the context of Turkish SMEs with six hypotheses by using data gathered from general managers/owners of the firms. The first hypothesis (Hypothesis 1) stated that there would be a positive relationship between innovativeness and gender heterogeneity in entrepreneurial teams. Direct support for Hypothesis 1 was not obtained in the present study. However, there is a tendency that heterogeneous teams in terms of gender are more innovative.

Results of the analyses didn't provide support for the second hypothesis (Hypothesis 2), that there is a negative curvilinear relationship between average age of entrepreneurial team and innovativeness. With the third hypothesis, the relationship between innovativeness and heterogeneity in terms of age was tested in negative (Hypothesis 3) direction. Hypothesis 3 was supported with the results.

The fourth hypothesis (Hypothesis 4) stated that there would be a negative curvilinear relationship between innovativeness and average organizational tenure of entrepreneurial teams. This hypothesis was not supported with the results, instead a positive tendency was found. With the fifth hypothesis, the relationship between innovativeness and heterogeneity in terms of organizational tenure was investigated in negative (Hypothesis 5) direction. Direct support was not obtained; however, there was a weak negative tendency between innovativeness and organizational tenure heterogeneity.

In the sixth hypothesis (Hypothesis 6), it was proposed that there would be a positive relationship between innovativeness and average education level in entrepreneurial teams. Results of the analyses supported this hypothesis.

In sum, it was argued that entrepreneurial team characteristics play an important role as antecedents of innovativeness in small firms. Influence of team size, which was controlled in the analysis, was also found significant. Larger size for an entrepreneurial team should be sought in order to benefit from the human capital at most in creating innovative capability for SMEs.

The findings in this study lend support to the "upper echelons perspective" (Hambrick and Mason, 1984) in that an organizational outcome, namely innovation, has been shown to be associated with the demographic characteristics of the entrepreneurial team. Overall, it was found that innovativeness was greater in SMEs with more educated persons placed in the entrepreneurial teams in condition that there was less diversity in terms of age. The finding about age heterogeneity is consistent with previous research in that increasing age differences

may increase potential for conflict which decreases consensus and cooperation over strategic targets such as innovation capability.

The slight influence of educational level of entrepreneurial teams implied the entrepreneurship training provided by universities and other institutions. Shortcomings in educational background can be eliminated with proper programs of entrepreneurship training in universities. Moreover, in recent years, KOSGEB (Small and Medium Industry Development Organization) have started support programs for young entrepreneurs and already established SMEs which include training about how to develop a business idea, market research, business plan, marketing plan and project management. With these support programs, the better performance of SMEs is aimed (Genç Girişimci Geliştirme Programı, 2009).

As Nelson (2000) noted from a series of case studies and as Freel (2003) mentioned in his study, the presence of education and training systems which ensured a flow of individuals with requisite knowledge and skills, was a distinctive feature of those countries that were able to get and sustain competitive and innovative firms. An interesting implication for future research is the impact of entrepreneurship programs on innovativeness.

This study has guiding implications for entrepreneurs who have innovative ideas, decide to establish a company and try to form a new team. Following the results of this study, it can be said that if entrepreneur managers are decisive on forming and maintaining an innovative culture and innovative firm, they should be careful in building their teams and try to choose highly educated people of the same age. By this way, they can lay a successful foundation of the desired innovative company.

### 5.4.2 Environmental Scanning

The impact of environmental scanning on innovativeness was examined in this study as the first strategic external variable. Hypothesis 7 stated that there would be a positive relationship between environmental scanning and innovativeness. Results of the analyses provided support for this hypothesis and showed that firms have to scan the environment to gather the necessary information in order to be innovative. Firms which scan their environments found to be more innovative.

Environmental scanning was found to be an important predictor of organizational innovativeness. Environmental scanning brings many advantages for organizations. It contributes to an organization's transformation into a learning organization which is essential for organizational innovativeness. By scanning the environment, firms learn their strengths and weaknesses and use the collected information in order to fill their deficiencies or build on their strengths. Moreover, they can find the strengths and weaknesses in their competitors and identify new markets, prospective customers and emerging technologies in order to fill these gaps with the innovative activities in their firms. Beyond the contribution on innovation, environmental scanning serves as an early warning system and identifies potential threats to the organization. By alerting the organization to possible changes in the environment, environmental scanning helps firms modify their strategies to the external environment. The ultimate goal of environmental scanning is to help an organization learn about the external environment in order to increase its responsiveness and flexibility in decision-making processes.

Albright (2004) suggested managers to perform environmental scanning process in five steps. Firstly, managers should identify the environmental scanning needs of their organizations. Secondly, they should gather the information. Then, they should analyze the information and communicate the results in their organizations. Finally, they should make informed decisions. Therefore, managers

in entrepreneurial teams can make better environmental scanning if they use these formal steps.

### 5.4.3 Networking

The last hypothesis tested the positive relationship between innovativeness and networking activities with customers, suppliers, competitors, universities and public agencies, respectively. The first part of the hypothesis (Hypothesis 8a) stated that there would be a positive relationship between innovativeness and networking with customers. Results supported this hypothesis. The second part of the hypothesis (Hypothesis 8b) declared that there would also be a positive association between innovativeness and networking with suppliers. Although there was no direct support for this proposition, there is a tendency that relations with suppliers have a positive effect.

Significant relationship was expected and found between networking with customers and innovativeness, because customers give feedback about the processes or products and may bring innovative ideas for firms to apply. However, sometimes SMEs may lack financial and human capital resources and they might not reflect these innovative ideas to real life. Therefore, financial support from government may become necessary in order to make these creative ideas real.

Insignificant relationship between innovativeness and networking with suppliers was interesting. Since firms depend heavily on their suppliers for the necessary parts of the machinery or the products, a significant result was expected. However, the examined innovativeness type is overall organizational innovativeness in this study, not only the product innovativeness. Therefore, this might have created this result. There might be other reasons for the insignificance. Trust between firms and their suppliers is one of these reasons. If firms work with many suppliers instead of building long-term relationships, this will also decrease the trust and idea transfer between the two parties. Therefore, managers should consider this implication of this study. However, again, the positive tendency of the

relationship between innovativeness and networking with suppliers showed that if managers take the right steps in linkage with their suppliers, they can benefit from them and become more innovative.

The following three parts of the hypothesis looked for the positive relationship with competitors (Hypothesis 8c), universities (Hypothesis 8d) and public agencies (Hypothesis 8e), respectively. Results of the analyses supported Hypothesis 8c and 8e. Significant results in co-operation with competitors and public agencies showed once more that the links outside the vertical value chain are more important than the collaborations in the vertical value chain. According to Kotabe and Swan (1995), the stronger role for horizontal links in enhancing innovativeness is related to their strategically motivated character.

Although the number of firms cooperating with their competitors is small, networking with rivals has a significant positive effect on innovativeness. Firms who make use of such collaborations become more innovative. Strategic alliances provide a platform for organizational learning, giving partner firms access to new knowledge. Through shared decision making, execution of alliance tasks, mutual interdependence and problem solving; firms can learn with and from their partners which enhance innovativeness. Lack of trust and an inability to find suitable collaborators were found as the real hindrance in front of competitor networking by Freel (2000) and which was also probably true for this study. Therefore, if firms can not move away these barriers, there should be local government policies that find solutions to such problems. For instance; there can be public agencies which help firms to find companies that want to make collaborative agreements or idea transfer. But these agencies should not only start these collaborations but also follow the relationships between two parties. By this way, firms feel themselves more comfortable when entering into such co-operations. Future research may add trust to competitors as a variable to explore more on "networking with competitors" and its impact on innovativeness.

Similar to networking with competitors, the number of firms that have linkages with universities is the least within networking partners. Although significant positive impact was expected on innovativeness, results didn't provide support for the proposition. Firms who have such relationships can benefit from the technical knowledge that academicians have. Moreover, university resource networks can help them to improve their innovative capability which may be limited within entrepreneurial teams themselves. Anyhow, there is a positive tendency between innovativeness and networking with universities.

In recent years, establishment of technoparks adjacent to universities has enhanced university- industry relationship. Firms in technoparks use the advantage of proximity to university and get the latest theoretical or technical knowledge which they use in their applications. There are also project offices in technoparks that work together with public agencies like KOSGEB, TUBITAK, EU offices or others and they also provide consultancy for the firms inside or outside the technoparks. For instance; there was a project that has finished last year named as IRC Anatolia (Innovation Relay Centers) and with this project, technology transfers were done between industry-industry, industry-university and also with foreign companies. These all are factors enhancing innovativeness. In fact, if the firms in technoparks had chosen for this study as a sample, the results would have shown more university linkages and also a more powerful beta weight.

As found in this study, networking with public agencies is another important cornerstone of innovation. Through well designed government policies, SMEs can add more commercial value to their activities. Hence, governments need to review their innovation supporting programs to tailor with the capacity of entrepreneurial teams. Although governments may support innovation in SMEs, lack of proper training may curtail the effectiveness of such policies. The educational gap may be closed by various continuous training institutions. Given the paternalism and strong state tradition (Heper, 2006) prevalent in Turkish culture, it is not surprising to find public organizations perceived as having the sole significant effect on innovativeness. In support of this finding, Bugra (2007) also

argued that Turkish private sector owed their existence to state. Given the nature of historical relationships, government organizations should take the lead in initiating such policies and programs as part of development programs. Communicating these policies to SMEs directly or by way of agents is another important aspect in making the networking more valuable.

In order to help SMEs more, government should also overview its policies of strengthening the financial capacity of regional/local actors in order to extend and enrich the financial environment and support for SMEs. There is need for trust between firms and financial providers and government should stimulate confidence building strategies and help entrepreneurs in drafting their business plans and introducing themselves to different type of financial organizations (Barczyk, 2007).

To date, some positive steps have been taken by the Turkish government to assist SME owners, such as the establishment of the KOSGEB, but more should be considered. Turkey can encourage the creation of more SMEs by making entrepreneurship a more profitable employment opportunity. A simplification of the labor code, a decrease in payroll taxes, and greater technical assistance and business education, especially in the areas of accounting, market research, human resources management, and technological support, would help energize the Turkish economy. In so doing, a new class of well-trained, highly motivated entrepreneurs can create much-needed jobs and make Turkey's economy more competitive with that of countries already in the EU (Benzing et al, 2009).

An important suggestion for future research here is the nature of contributions on innovativeness done by networking partners, particularly public organizations. This will help to restructure the array of public policies aiming to mobilize SMEs towards both regional and national development.

### 5.4.4 Interactions and Overall Implications

Some findings of results of the analyses were outstanding. It was realized that, effects or directions of beta values found in individual regressions have changed when all predictor variables were entered together. Beta weights for gender heterogeneity, average age, age heterogeneity, environmental scanning, networking with customers, suppliers, competitors and public agencies were all decreased. Beta weight for average organizational tenure was positive in individual regression but changed sign in the final regression analysis. Conversely, the negative beta weight for organizational tenure heterogeneity in individual regression turned to positive in the last regression analysis. This implied a possible interaction between these variables and scanning and networking variables.

Another possible interaction might occur between average education level and networking with universities. While average education level was positive and significant in individual regression, it became negative and insignificant in the all-predictors model. On the contrary, the beta weight of networking with universities increased in the all-predictors model. This interaction seems logical because in the absence of networking with universities, more educated team members try to close this deficiency. However, when firms start to cooperate with universities, the level of education becomes less important. In fact, team members may think that choosing highly educated members is unnecessary and costly most of the time and the need for higher level of education start to decrease when networking with universities increase.

Reason for the disappearance of the significant effect of networking with customers may be the environmental scanning activities, because in environmental scanning construct there is an item about gathering opinions of customers. While scanning their environments, firms fulfill the need of networking with customers and as a result the effect of this variable has decreased. Overall, these findings indicated the possibility of interaction effects which can be explored in future research.

Results of this study revealed that internal capabilities or external networks were not solely enough in order to create better organizational outcomes. Entrepreneurial teams, therefore, should accumulate internal and external resources simultaneously. When the teams put most of their effort into accumulating internal capabilities, firms will fail to mobilize complementary external resources and plans not to collect the rents from their innovation. In the same manner, firms which team members spend most of their time and energy to develop external networks or scan the environment can not succeed in the long-run, since the network partners are reluctant to put their proprietary assets repeatedly at risk (Chung et al., 2000; Lee et al., 2001). However, as known, innovative activity is largely incremental and necessitates building upon current capabilities and prior experiences and involving some tacit dimension. According to Smith (2000), this tacit knowledge is essentially person embodied, then '… any firm level strategy for the development of knowledge must therefore be an employment strategy'. Thus, firstly, the formation of entrepreneurial teams and then, further employment of skilled labor become necessary before any innovative activity or external network. Therefore, yes, it can be said that these internal capabilities and external knowledge are complementary, but building up the right entrepreneurial teams seems as a preliminary step before initiating other activities.

## 5.5 Strengths of the Study

It is important to note several strengths of this study. First strength is associated with relative representativeness of the participative organizations. Data were collected from private sector companies in a number of industries like automotive, textile and chemicals.

Second, this study is the first research done which combined different variables. Most of the prior studies on entrepreneurship or strategy did not investigate the impact of internal resources and social capital like networking on organizational outcomes in an integral way. Finally, results of the analysis have

various implications for managers, government and policy makers and have new areas open for future research.

### 5.6 Limitations of the Study and Directions for Future Research

The research findings are subject to some limitations. First question regards generalizability. The data was collected only from Bursa region which may not represent the whole country. It is obvious that replicating this study in other cities or different industries would increase the confidence in the results. Second, availability of entrepreneurial human capital does not adequately clarify how innovation takes place. Third, as was mentioned before, most of the items in the questionnaire were taken from Henneke and Lüthje's (2007) study. Their sample was high-tech SMEs, however in present study not all firms were performing in high-tech sectors. Therefore, appropriateness of these items for present sample may be questioned. Finally, use of categorical (networking) variables may reduce the regression model's explanatory power, but generate more conservative results than the use of continuous variables. Thus, this study's findings should be considered conservative.

A question that may arise for future research is that whether different types of heterogeneity among team members have different impacts on innovativeness. There are other team composition variables that weren't considered in this research which might also affect innovativeness in either positive or negative way such as socioeconomic background, financial position and career profiles. Therefore, one should not make a conclusion about the firms until such variables are also examined.

Another suggestion for future research is the measurement of innovativeness by using tangible data such as magnitude of the R&D expenditure. In this study, innovativeness results somehow might have reflected the intentions of the managers, but by asking tangible questions together with the items as in this

study, more realistic conclusions can be done about the innovativeness activities of the firms.

Future research should also highlight the absorptive capacity and learning potential of entrepreneurial teams. Moreover, contribution of networking parties to innovativeness is a fruitful line of research. Particularly, the policies government adopts and their effectiveness in fostering innovativeness may be explored. However, the results belong to a pioneering research that shows the first direct effect of entrepreneurial team demographics, environmental scanning and networking on innovativeness in Turkey.

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# APPENDICES

## APPENDIX A

## QUESTIONNAIRE INFORMATION FORM

# ORTA DOĞU TEKNİK ÜNİVERSİTESİ

# SOSYAL BİLİMLER ENSTİTÜSÜ

# İŞLETME BÖLÜMÜ

## TEZ ÇALIŞMASI

"TÜRKİYE'DEKİ KÜÇÜK VE ORTA ÖLÇEKLİ İŞLETMELERDE GİRİŞİMCİ EKİP ÖZELLİKLERİNİN, YAPILAN ÇEVRESEL İNCELEMELERİN VE NETWORK (AĞ) KURMA FAALİYETLERİNİN YENİLİKÇİLİK ÜZERİNE ETKİLERİ"

**Araştırmacı:** Dilek TÜTEN

**Danışman:** Doç. Dr. Semra AŞCIGİL

**YÖNETİCİ- ŞİRKET DEĞERLENDİRME ANKETİ**

Sayın katılımcı,

Bu anket, Orta Doğu Teknik Üniversitesi İşletme Bölümü Yüksek Lisans öğrencisi Dilek Tüten tarafından Doç. Dr. Semra F. Aşcıgil' in danışmanlığında yürütülen "Türkiye'deki Küçük ve Orta Ölçekli İşletmelerde Girişimci Ekibin Özelliklerinin, Yapılan Çevresel İncelemelerin ve Network (Ağ) Kurma Faaliyetlerinin Yenilikçilik Üzerine Etkileri" konulu tez çalışması kapsamında yapılmaktadır. Anketin amacı, şirketleri yöneten girişimci ekiplerin özelliklerini belirlemek, şirketlerin rakipleri, fırsatları vb. tanımlamak için yaptıkları çevresel incelemelerin boyutları ve şirketlerin kurmuş olduğu networkler hakkında bilgi edinmek ve bu değişkenlerin yenilikçilik ile olan ilişkilerini incelemektir. Bu anlamda sizden anketteki sorulara her bölümde verilen açıklamalar doğrultusunda dikkatli ve özenli yanıtlar vermeniz beklenmektedir.

Anketin giriş bölümünde sizden şirketle ve yönetici ekip ile ilgili bazı bilgiler istenmektedir. Bu bilgiler hiçbir şekilde kurum içinden ya da dışından kişilerle paylaşılmayacak, sadece araştırma amaçlı kullanılacaktır. Buna ek olarak, anket sorularına verilen bütün cevaplar gizli tutulacak ve anketi uygulayan kişi dışında hiç kimse tarafından incelenemeyecektir. Değerlendirmenin daha sağlıklı yapılabilmesi için tüm maddelerin cevaplandırılması gerekmektedir. Lütfen, tüm maddeleri dikkatlice okuyunuz ve boş bırakmayınız. Katkılarınız ve yardımlarınız için şimdiden teşekkür ederiz.

Çalışma hakkında detaylı bilgi edinmek veya sorularınız için;

Dilek Tüten

e-mail: ……

Telefon: ……

# APPENDIX B

# GENERAL COMPANY INFORMATION

**A) Genel Şirket Bilgileri**

**1)** Şirketiniz ne zaman kuruldu?:_____

**2)** Şirketiniz hangi alanda/alanlarda faaliyet gösteriyor?

□ Bilgi teknolojileri

□ Biyoteknoloji

□ Çevre

□ İlaç

□ İleri üretim

□ Otomotiv

□ Diğer ise belirtiniz _____

**3)** Şirket tipi: □ Üretici

□ Satıcı

□ İthalatçı

□ İhracatçı

**4)** Ciro (TL): □ < 10000 □ 10000-50000 □ 50000-100000 □ 100000- 250000 □ 250000-500000 □ 500000- 1000000 □ 1000000- 5000000 □ > 5000000

**5)** Personel sayısı: □ 1-9 □ 10-24 □ 25- 49 □ 50-99 □ 100-149 □ 150-250

**6)** Şirket Statüsü: □ Şahıs işletmesi

□ Kolektif şirket

□ Anonim şirket

□ Adi ortaklık

□ Limited şirket

**APPENDIX C**

**DEMOGRAPHIC QUESTIONS**
**ABOUT**
**ENTREPRENEURIAL TEAM MEMBERS**
**by**
**Henneke and Lüthje (2007)**

Aşağıda anketin B, C, D ve E kısımlarında adı geçen bazı kavramların ifade edilmek istenilen anlamları verilmiştir. Lütfen anketi cevaplamadan önce açıklamaları okuyunuz.

**Girişimci ekip:** Bir girişimin kuruluş ve başlangıç gibi erken aşamaları da dahil olmak üzere fikir, sermaye ya da herhangi bir çaba ile katkıda bulunup, yönetim seviyesinde sorumluluk alan; girişimin geleceği ve başarısı için çalışan; bu girişimden maddi ya da başka türlü yarar sağlayan; birbirine karşı kendini sorumlu hisseden; kendileri ve başkaları tarafından sosyal bir varlık olarak görülen iki ya da daha fazla kişiden oluşan grup, ekip.

**Çevresel İnceleme:** Bir işletmenin rakiplerini, fırsatları, pazarlama imkanlarını vb. tanımlamak amacıyla çevresini incelemesi.

**Bilimsel Literatür:** Daha önceden bir konu hakkında başkaları tarafından yazılmış eserler ve yapılan çalışmalar sonucunda alınmış olan patentler.

**Dış Finansal Bilgi:** Şirket dışı finans uzmanlarından ya da danışmanlardan bilgi edinme.

**Yenilikçilik**: İnovasyon; bir fikri, pazarlanabilir bir ürün ya da hizmete, yeni ya da geliştirilmiş bir üretim ya da dağıtım yöntemine, ya da yeni bir toplumsal hizmet yöntemine dönüştürebilmek.

**Network (ağ):** Birbiri ile rekabet etmeyen ve kaynakları ortak paylaşan insan ağı veya şebekesi.

**B) Girişimci/Yönetici Ekip**

**1)** Şirketin kurucuları nereden tanışıyorlar? (Birden fazla seçenek işaretleyebilirsiniz.)

□ Üniversiteden arkadaşlar

□ Arkadaşlar

□ Üniversiteden meslektaşlar

□ Önceki iş girişimlerinden meslektaşlar

□ Yatırımcılar tarafından tanıştırıldılar

□ Diğer ise belirtiniz _____

**2)** Şirketin şu anki yönetim ekibinde kaç kişi var?:_____

**3)** Aşağıda şirketi yöneten ekipteki her bir üyenin cinsiyeti, yaşı ve eğitim durumu hakkında bilgiler istenmiştir. Cinsiyet ve eğitim durumunu uygun yerlere (X) işareti koyarak, yaş, meslek, şirketteki iş deneyimi ve toplamda iş deneyimini de yazarak tabloyu doldurunuz.

| Üye | Cinsiyet | | Yaş | Eğitim Durumu | | | | | | Meslek | Şirketteki iş deneyimi (yıl olarak) | Toplamda iş deneyimi (yıl olarak) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | K | | İlköğretim | Lise | Önlisans | Lisans | Y. Lisans | Doktora | | | |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |

(5. ve 6. sorularda kişilerin birden fazla alanda eğitimi ya da deneyimi varsa bunu göze önünde bulundurunuz.)

**5)** Lisans ve üzeri eğitim durumuna sahip üyeler için:

Ekipten kaç kişinin mühendislik/fen bilimleri alanında eğitimi var?:

Ekipten kaç kişinin işletme alanında eğitimi var?:

Ekipten kaç kişinin finans/muhasebe alanında eğitimi var?:

Ekipten kaç kişinin pazarlama/satış alanında eğitimi var?:

Ekipten kaç kişinin hukuk alanında eğitimi var?:

Diğer alanlarda var ise belirtiniz: _____

**6)** Ekip üyelerinden kaç kişinin geçmişte yöneticilik ile ilgili iş deneyimi olmuştur?:

Ekip üyelerinden kaç kişinin geçmişte pazarlama/satış ile ilgili iş deneyimi olmuştur?:

Ekip üyelerinden kaç kişinin geçmişte finans/muhasebe ile ilgili iş deneyimi olmuştur?:

Ekip üyelerinden kaç kişinin geçmişte operasyon/üretim ile ilgili iş deneyimi olmuştur?:

Ekip üyelerinden kaç kişinin geçmişte araştırma-geliştirme ile ilgili iş deneyimi olmuştur?:

Diğer ise belirtiniz:_____

# APPENDIX D

## ENVIRONMENTAL SCANNING

**by**

**Henneke and Lüthje (2007)**

**C) Çevresel İnceleme**

Şirketinizde çevresel inceleme yapmak için aşağıdaki faaliyetlere hangi sıklıkla başvurulduğunu lütfen verilen ölçeğe göre değerlendiriniz. (1- hiç kullanılmaz, 4- ara sıra kullanılır, 7- her zaman kullanılır)

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | Düzenli aralıklarla müşterilerin görüşlerini toplamak | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | Rakiplerin aktiviteleri ve taktiklerini yakından takip etmek | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3 | Satış tahminleri | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4 | Özel pazar araştırma çalışmaları | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5 | Bilimsel literatür (teknik, bilimsel, patentler,…) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | Şirket dışı endüstri uzmanlarının bilgileri | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7 | Akademisyenlerle bilgi değişimi/paylaşımı | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | Yeni potansiyel yatırımcıları belirlemek için özel izleme ve inceleme yaklaşımları | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9 | Dış finansal bilgi, örneğin profesyonel öğütler | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## APPENDIX E

## ORGANIZATIONAL INNOVATIVENESS

**by**

**Wang and Ahmed (2004)**

**D) Yenilikçilik**

Aşağıda, yöneticilerin işletmelerinde yenilikçiliğe verdiği öneme dair tanımlayıcı cümleler bulunmaktadır. Lütfen her maddeyi aşağıdaki ölçeğe göre değerlendirerek, ne ölçüde katıldığınızı belirtiniz.

| | | **1 Hiç Katılmıyorum** | **2 Katılmıyorum** | **3 Pek Katılmıyorum** | **4 Biraz Katılıyorum** | **5 Katılıyorum** | **6 Tamamen Katılıyorum** |
|---|---|---|---|---|---|---|---|
| 1 | Yeni ürün ve hizmetleri çoğunlukla pazara ilk bizim şirketimiz getirir. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Yeni ürün ve hizmetlerimiz çoğunlukla müşterilerimiz tarafından sıra dışı olarak algılanır. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | En yeni ürün ve hizmetlerimiz bir önceki ürün ve hizmetlerimizin sadece biraz değişmiş halidir. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | Şirketimizdeki yeni ürün ve hizmetler çoğunlukla bizi yeni rakiplerimize karşı üstün tutar. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | Rakiplerimize kıyasla şirketimiz son beş yılda daha yenilikçi ürün ve hizmetler getirdi. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | Rakiplerimize kıyasla şirketimiz yeni ürün ve hizmetleri piyasaya sunmada daha düşük başarı oranına sahiptir. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | Rakiplerimize kıyasla ürünlerimizin en son pazarlama yöntemleri piyasada devrim niteliği taşımaktadır. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8 | Yeni ürün ve hizmet tanıtımlarında şirketimiz çoğunlukla en ileri teknolojiden yararlanır. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9 | Şirketimizin Ar-Ge veya ürün geliştirme kaynakları yeni ürün ve hizmet geliştirme ihtiyacını karşılamaya yeterli değildir. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10 | Sürekli olarak iş süreçlerimizi iyileştiririz. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11 | Rakiplerimize kıyasla şirketimiz üretim metotlarını büyük bir hızla değiştirir. | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | Son beş yılda şirketimiz pek çok yeni yönetim yaklaşımları geliştirdi. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13 | Şirket yöneticileri olarak riskli büyüme fırsatlarını kaçırmamak ve keşfetmek için risk almaya hazırız. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14 | Üst düzey yöneticiler olarak fikir adamlarından yararlanarak sürekli olarak problemlere sıra dışı, orijinal çözümler ararız. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15 | Şirketimizde işleri farklı yollarla yapan kişilere tolerans gösteririz. | 1 | 2 | 3 | 4 | 5 | 6 |
| 16 | İşleri yeni yollarla yapmayı ve sıra dışı, orijinal çözümler aramayı denemeye hazırız. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17 | Çalışanları orijinal ve sıra dışı yollarla düşünmeye ve davranmaya teşvik ederiz. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18 | İşlerin yapılışında yeni yollar gördüğümüzde biz onları benimsemede sona kalırız. | 1 | 2 | 3 | 4 | 5 | 6 |
| 19 | Problemi geleneksel metotlarla çözemediğimizde geçici olarak yeni metotlar buluruz. | 1 | 2 | 3 | 4 | 5 | 6 |

**APPENDIX F**

**NETWORKING**

**by**

**Freel (2003)**

**E) Networkler (Ağlar)**

**1)** Şirket son 3 yıl içerisinde yenilikçi aktivitelerde bulunmak için müşterileriyle işbirliği yaptı mı?

□ Evet □ Hayır

**2)** Şirket son 3 yıl içerisinde yenilikçi aktivitelerde bulunmak için tedarikçileriyle işbirliği yaptı mı?

□ Evet □ Hayır

**3)** Şirket son 3 yıl içerisinde yenilikçi aktivitelerde bulunmak için rakipleriyle işbirliği yaptı mı?

□ Evet □ Hayır

**4)** Şirket son 3 yıl içerisinde yenilikçi aktivitelerde bulunmak için üniversitelerle işbirliği yaptı mı?

□ Evet □ Hayır

**5)** Şirket son 3 yıl içerisinde yenilikçi aktivitelerde bulunmak için kamu idareleriyle(devlet kurumları, Avrupa Birliği Komisyonu, vb.) işbirliği yaptı mı?

□ Evet □ Hayır

**6)** Kurulan diğer networkler varsa kimlerle olduğunu belirtiniz _____

**Anketimiz sona ermiştir.**

**Çalışmamıza sağladığınız değerli katkılarınız için çok teşekkür ederiz…**