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Knowledge Management Capability, Entrepreneurial Strategy Making Capability and Organizational Effectiveness: Evidence from Turkey

Bilgi Yönetim Yeteneği Ve Organizasyonel Etkililik Arasindaki Ilişkide Girişimcilik Stratejisi Geliştirme Yeteneğinin Aracilik Etkisi: Türkiye'den Bir Örnek

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ABSTRACT

The aim of this study is to investigate the relationship between knowledge management capabilities and organizational effectiveness in organizations and the mediating effect of entrepreneurial strategy making capability in this relationship. The universe of this study is constituted by innovative-entrepreneurial businesses, launched in 18 active free zones in Turkey that are currently operating and having R&D activities. A survey was conducted and a sample of 206 organizations was analyzed using path analysis with LISREL 8.8. Software. As a result, the relationship between organizational effectiveness and knowledge management capabilities has been empirically proven; additionally, it has been found that the entrepreneurial strategy making capability has a mediating effect between knowledge management capabilities and organizational effectiveness.

Keywords: Knowledge management, knowledge management capability, entrepreneurial strategy making capability, organizational effectiveness

ÖZET

Bu çalışmanın amacı organizasyonlarda bilgi yönetim yeteneği ve organizasyonel etkililik arasındaki ilişkiyi ve bu ilişkide girişimcilik stratejisi geliştirme yeteneğinin aracılık etkisini araştırmaktır. Türkiye'de mevcut ve faal durumda olan 18 serbest bölgedeki üretim, patent ve Ar-Ge çalışması yaparak hali hazırda faaliyetlerine devam eden inovatif-girişimci işletmeler bu çalışmanın evrenini oluşturmaktadır. Araştırma kapsamında 311 işletmeye mail yoluyla anket gönderilmiştir. Elde edilen bu veriler LISREL 8.8. programı kullanılarak yapısal eşitlik modellemesi (YEM) ile analiz edilmiştir. Yapısal Eşitlik Modellemesi sonucunda, organizasyonel etkililik ile bilgi yönetimi arasındaki ilişki ampirik olarak kanıtlanmakla beraber, girişimcilik stratejisi geliştirme yeteneğinin bilgi yönetimi ile organizasyonel etkililik arasında aracılık etkisine sahip olduğu saptanmıştır.

Anahtar Kelimeler: Bilgi Yönetimi, Bilgi Yönetim Yeteneği, Girişimcilik Stratejisi Geliştirme Yeteneği, Organizasyonel Etkililik

1. INTRODUCTION

It is possible for organizations to adapt to ever-changing environmental conditions, and to exist for a long time in a dynamic, complex and competitive business environment, with a high level of organizational effectiveness. Organizational effectiveness describes strategies for achieving business goals, coping with competitors, and increasing profitability and success (Mott, 1972). Georgopoulos and Tannenbaum (1957) describe organizational effectiveness as achieving goals of the firm without overwhelming its employees, without bringing to a standstill its sources and assets with the given resources. This definition is supported by Taego et al. (2013) that define the organizational effectiveness as the process of satisfying objectives without undermining the resources of an organization. Despite the complexity of defining organizational effectiveness, Abston and Stout (2006) conclude that organizational effectiveness is not an idea; however, it is a structure because it is identified and determined by observing objective events.

Today's managers believe that knowledge management skills are an important source of competitive advantage and organizational effectiveness (Bohn, 1994; Broadbent, 1998; Clarke, 2001; Grover and Davenport, 2001; Felton, 2002). As a result of a survey conducted by Gold et al. (2001) to senior executives, it has been found that having appropriate knowledge infrastructure and operational capabilities within the firm will increase organizational effectiveness. Researchers also argue that aligning knowledge management initiatives with business strategy will provide additional improvements in organizational effectiveness (Zack, 1999; Clarke, 2001; Maier and Remus, 2002). Indeed, Clarke (2001) believes that knowledge management programs cannot succeed unless they are closely linked to business strategy. Because of this reason, business strategies are not only a factor that affects effectiveness in organizations but also indispensable in maximizing the outcomes of technological investments. Although researchers have discussed the importance of relating the business strategy to knowledge management (Clarke, 2001; Maier and Remus, 2002), there are only a few studies that have examined the link between business strategy and knowledge management (Maier and Remus, 2002).

Although some studies have shown that knowledge management skills have a positive significant impact on organizational effectiveness (Gold et al., 2001), to the best of our knowledge, there are no studies examining the role of knowledge management skills on a firm's entrepreneurial strategy making capability.

The concept of entrepreneurial strategy making, arisen as a result of today's highly competitive environment, is a reflection of how an organization is connected to risk-taking, innovation orientation and strategy development and implementation proactivity, and is critical to the success of an organization (Dess et al., 1997 ; Li, et al., 2005). In the area of organizational behaviour, the entrepreneurial strategy can be described as an example of decisions to define and to respond to opportunities for new businesses (Mintzberg 1978; Miles et al., 1978; Miller 1983; Covin and Slevin 1989; Grant 1998). In a study conducted by Li et al. (2005), it has been proven that there is a significant positive relationship between businesses' capability to develop an entrepreneurial strategy and their performance.

In today's world's economy where richness has become increasingly the creation of knowledge rather than physical sources, organizations now recognize the importance of knowledge management and getting prepared for a knowledge-intensive future. Organizations are aware that they will not survive unless they can respond to this reality through effective knowledge management skills. Since the knowledge management capability means both the processing and management of knowledge, the boundaries of this concept can be expanded to managing organizational knowledge that will create a competitive advantage and business value. Knowledge management enables firms to use all kinds of knowledge that can be employed in order to achieve organizational goals and to have creativity and communication (Tiwana, 2003). Today, organizations are trying to respond to the difficulties of the knowledge-based economic structure by managing the capabilities including acquiring, transforming, application and protecting knowledge, and the key antecedents such as organizational structure, organizational culture, and knowledge technology support that constitute the knowledge management infrastructure (Gold et al., 2001).

The knowledge management capabilities framework (Gold et al., 2001) offers a useful context to examine the role of business strategy. The model of Gold and his colleges presented in 2001, combines two widely accepted dimensions of knowledge management in organizations in the form of knowledge processing capability including knowledge acquisition, transformation, application and protection, and knowledge infrastructure capability including technology, structure and culture. The knowledge processing capability dimension, refers to the ability to transform the stored knowledge in standard operations, procedures and routines into organizational knowledge, experience and expertise in the entire organization (Nonaka and Takeuchi, 1995). The knowledge infrastructure capability is defined as facilitating conditions provided by the organizations themselves in order to

enable them to process information with less effort (Sanchez and Mahoney, 1996). Researchers argue that these activities and structures are a prerequisite for effective knowledge management skills (Alavi and Leidner, 2001; Davenport et al., 1998). Also, these are in turn posited as key antecedents of organizational effectiveness (Gold et al., 2001; Stein and Zwass, 1995). In this study, knowledge infrastructure capability and knowledge process capability dimensions are considered as sub-dimensions of knowledge management capabilities.

Despite the fact that organizational strategies are important to the success of knowledge management practices in organizations; there is no empirical study that shows that the capability to develop entrepreneurship strategy is mediated by knowledge management capability and organizational effectiveness. Entrepreneurship involves identifying and using entrepreneurial opportunities. However, it is necessary to act strategically in order to be able to create an entrepreneurial business that creates value. This requires the integration of entrepreneurial and strategic thinking (Hitt et al., 2001).

Rapidly changing global markets, competition and uncertainty are deeply affecting the countries' economies' which pursue their activities in an integrated manner as much as businesses. Because of this reason, the free zones have been created as the locomotive for the economic development of countries in order to increase the export potential of the country and to withdraw more foreign direct investments, to adapt to developing and changing technology, and thereby increase the foreign exchange inflow to the country, to provide the raw materials and intermediates demanded by domestic producers at the requested price and place that are currently available in the global marketplace due to the incentives and advantages offered by the state (Tufan, 2009).

Due to all these features of the free zones, this study is conducted on the 311 businesses operating in 18 free zones in Turkey which are innovation-oriented and engage in R&D and patent work. This research assumes that the knowledge management capabilities of such businesses in the free zones are the antecedents of organizational effectiveness with the ability to make an entrepreneurial strategy, and also it aims to test the mediating effect of entrepreneurial strategy making on the relationship between knowledge management capabilities and organizational effectiveness. On the basis of the relationship between knowledge and strategy, this study adds a new dimension to the model of Gold et al., (2001), combining organizations' capability to making entrepreneurial strategy and knowledge management skills, aiming to increase organizational effectiveness. The lack of such a model indicates that there is no widespread application in practice as a means of the entrepreneurial strategy making in relation to knowledge management capability and organizational effectiveness. The study contributes to the knowledge management theory by conceptualizing and evaluating a model and a framework that shows the mediating effect of the entrepreneurial strategy making capability in this relationship.

2. CONCEPTUAL FRAMEWORK

When knowledge management literature examined, it is seen that knowledge and resource-based views have priority (Gold et al., 2001). Gold et al. (2001) point out that knowledge-based views in the organizations are related to integration and the resource-based views are related to coordination characteristics.

Grant (1996a) has established a link between resource-based and knowledge-based views, and stated that knowledge-based view will be a result of resource-based consultation that focuses strategically on information as the most important organizational resource.

2.1. The Resource-based view

The resource-based view extends to Penrose's The Theory of the Firm. The resource-based view, which has started to gain importance in the field of strategic management, is based on the idea of that the organization is regarded as the sum of the incentives and capabilities. This view seeks to predict

and explain the performance of the organization and the sustainable competitive advantage. In addition, it argues that the firm is a unique union of individual capabilities and resources, and that the main role of management is to reach value maximization via deploying the best available resources and capabilities (Grant, 1996a). Similar to Grant (1996a), Nonaka and Takeuchi (1995) have come to the conclusion that the resource-based view sees competencies, capabilities, skills, or strategic assets as a source of sustainable competitive advantage within the organization. In this respect, unlike other strategic thinking mechanisms, it is ensured that organizations are embodied in a coherent and integrated structure.

There are two basic assumptions in this approach. The first one is being that the strategic resources that are under the control of organizations that are operating within the industry might be different; and the second one is being that these resources might not have full mobility among the organizations (Barney, 1991). Organizations have to be successful in finding and managing scarce resources to be effective. According to the resource-based view, the main determinant of organizational effectiveness is the efficient use of the different resources that are under the control of the organization, and that these resources cannot be fully imitated by the competitors. Therefore, the resource-based view suggests that the competitiveness of the organization comes from valuable, rare, hardly imitable, sustainable, physical and moral unique assets (Helfat and Peteraf, 2003). Additionally, it suggests that the unique resources of the organization will provide a base for the strategy of that organization. In this model, the strategy chosen by the organization should enable it to optimally utilize the organization's core competences in order to be able to give quick responds to opportunities outside the organization (Hall, 1991).

2.2. The Knowledge-based view

The knowledge-based view holds that the capability to create and utilize knowledge is the most important source of an organization's sustainable competitive advantage (Zheng et al., 2010). The knowledge-based view is at the center of the resource-based view. And it sees knowledge clearly as a unique source and organization as a dynamic, developing, semi-autonomous system of information production and use (Medsker et al., 1994). It also extends the resource-based view, which was developed previously by Penrose (1959) and states that valuable and scarce resources can be the source of a sustainable competitive advantage of an organization. The knowledge-based view is based on the organization's capability to create and use the knowledge as a source of significant and sustainable competitive advantage. While organizational theories are generally based on a set of suggestions about the organization's existence, structure, behaviour, and effectiveness; the knowledge-based view offers insight into the strategic and managerial issues that guide inter-organizational collaboration (Grant and Baden-Fuller, 1995). Grant (1996b) argues that the different kinds of expertise knowledge that individuals in the same organization have are ultimately coordinated in the production process. Thus, it can be suggested that knowledge integration is the focal point of knowledge-based view. Grant (1996b) argues that the central to the theory is analysis of the mechanisms through which knowledge is integrated within firms in order to create capability. Therefore, knowledge-based view followers often imply to knowledge in the minds of employees (tacit knowledge) and codified knowledge in a knowledge system (explicit knowledge) when they refer to knowledge. Since tacit knowledge cannot be obtained easily and stored for future use, there are some difficulties in practice. This kind of knowledge is based on unique concepts and experiences and a part of the organization's procedures. Thus, it is hard to buy or copy this kind of knowledge (Tzortzaki and Mihiotis, 2014).

2.3. The relationship between knowledge management capability and organizational effectiveness

It is well known that firms need to develop appropriate capabilities to manage knowledge resources in the concept of knowledge management. Knowledge is an asset with the potential to provide a competitive advantage when it possesses valuable, rare, unique and non-substitutable qualities (Grant

1996a). Because of this reason, an organization's knowledge management capabilities can potentially contribute directly to organizational effectiveness or indirectly affect outputs associated with organizational effectiveness or other resources (Stein and Zwass, 1995; Gold et al., 2001; Wade and Hulland, 2004). If these theoretical perspectives are considered together, it can be argued that when the knowledge management capabilities appropriately supported organizational effectiveness will boost.

On one hand, Hlupic et al. (2002), argue that knowledge management is a tool for the effectiveness of organizations and competitiveness. On the other hand, Gold et al. (2001), indicate that successful implementation of knowledge management provides benefits for an organization in order to be more innovative, to accommodate its efforts, to commercialize new products quickly, to anticipate opportunities and to be more sensitive to the market changes.

In short, knowledge management capability means processing and management of knowledge (Tiwana, 2003). The knowledge management capability is also defined as the ability of an organization to manage, store, absorb, and use the critical knowledge resources (Miranda et al., 2011) or the ability to mobilize and use knowledge-based resources along with other resources and capabilities (Chang and Chuang, 2011).

Knowledge management is an organizational process that aims to benefit from the creative power of the organization by combining the data and knowledge processing capacity of information and communication technologies with the innovative and creative capacity of human capital at the maximum level. According to another approach, knowledge management is an integrated and systematic approach that includes identifying, managing and sharing all knowledge assets of an organization such as databases, documents, policies, and procedures, including existing expertise and experience (Barquin et al., 2001).

Knowledge management capabilities contribute to organizational effectiveness in areas such as innovation, new product development and competitiveness (Villar et al., 2014).

In this study, knowledge infrastructure capability (structure, culture, and technology) and knowledge process capability (acquisition, conversion, application and protection) are used as the sub-dimensions of knowledge management capability. Structure can be defined as formal relations and activities, also distribution of resources among people (McKenna, 1999). Knowledge management initiatives can be organized structurally as separate organizational units, projects or informal initiatives (Maier and Remus, 2002). Culture means the vision and values of the organization and its behaviour towards knowledge transfer and learning (DeTienne et al., 2004). Peachey and Hall (2005) state that even the best knowledge management initiatives will fail if organizations do not have a culture that has an easy-adaptive characteristic. Moreover, it is acknowledged that the organizational culture influences knowledge management initiatives and is one of the biggest obstacles in front of knowledge management success. Technology including hardware, software, internal and external system networks and databases constitutes the basic knowledge technology infrastructure of the organization. Many researchers (Leonard, 1995, Davenport and Prusak, 1998, Holsapple and Joshi, 2001) point out that technological ability has lifted barriers to communication and sharing, furthermore, helped out in the process of the integration of knowledge through departments and project teams. Acquisition process is the first step in the knowledge management process. The acquisition of knowledge is related to the development or creation of sources of knowledge between functional boundaries. Moreover, the acquisition of knowledge is seen as the ability of the organization to use knowledge in order to gain competitive advantage. The focus of the process of acquiring knowledge is to obtain new knowledge by using the existing knowledge more efficiently. Benchmarking and collaboration are two examples of this process (Emadzade et al., 2012). Conversion is defined as the conversion process that is a fundamental input-output and knowledge-transformation process by Armistead (1999). When organizations obtain the knowledge in a raw form, this knowledge cannot be used instantly within the organization. Once the organization obtains

the knowledge, it needs to be processed accordingly to its own culture, its structure and the sector it is currently in (Çakar et al., 2010). Application refers to processes for the actual use of knowledge after it is converted (Verkasalo and Lappalainen, 1998; Gold et al., 2001). Protection is creating security-oriented knowledge management processes to prevent intra-organizational knowledge from illegal or improper use and theft (Porter-Liebskind, 1996). When the knowledge is applied to the firm's current objectives, the size and sustainability of a firm's competitive advantage depend on how well the knowledge is protected. Therefore, knowledge is a source of competitive advantage when it is only rare and unique as an asset. Thus, the protection process is very important for an organization at this point (Barney, 1991).

Improving knowledge technologies enables organizations to offer better products and services and thereby gain competitive advantage and profit. Knowledge sharing and information is an important factor in all of the organizations. Knowledge communication technologies allow the all of the knowledge management activities required for collaborative decisions, knowledge sharing, organizational learning and organizational memory (Liao, 2003).

At the organizational level, technology transfer is the process of transposing the recently acquired knowledge into the activities of the organization via transferring knowledge and technology from one individual or one group to another. A new technology with considerable advantage has to offer the customer an important value before being adopted by a wider user community (Jain and Triandis, 1997). Besides using the new technology, there are numerous management challenges, such as the need to improve this technology constantly, which will form the basis for future competitive advantage for an organization. Because of this reason, organizational management also focuses on knowledge management and technology, which are the main determinants of excellence and competitive advantage of the organization (Sher and Lee, 2004).

In the previous studies, it is shown that the knowledge management processes have an impact on organizational effectiveness. McEvily and Chakravarthy (2002) have stated that an organization can provide a competitive advantage, especially by creating and sharing scientific and technological knowledge. Argote and Ingram (2000) have implied that ability to deliver the knowledge between departments of the organization enhances the organizational effectiveness. Germain, et al. (2001) found a positive relationship between knowledge management and financial performance by conducting a survey on 200 manufacturing firms. Gold et al. (2001) found that knowledge management provided important contributions to the organization in terms of organizational effectiveness. Therefore the study proposes the following hypothesis:

H1a: Knowledge infrastructure capability has a positive significant effect on organizational effectiveness.

H1b: Knowledge process capability has a positive significant effect on organizational effectiveness.

2.4. The relationship between knowledge management capability and entrepreneurial strategy-making capability

Entrepreneurial strategy-making capability addresses the organizational processes, methods, and styles that firms use as they make and implement strategic decisions. Especially, it reflects how well an organization adapts itself to the issues of risk-taking, innovation, and pro-activeness while making and implementing its strategy (Miller and Friesen, 1983).

It has been proved that it is important to adapt a firm's strategy and knowledge technology by the previous studies (Henderson and Venkatraman, 1993; Sabherwal and Chan, 2001). Likewise, when it comes to the role of knowledge management, it is thought that the successful deployment of knowledge management resources depends on its alignment with firm's strategy (Zack, 1999; Clarke, 2001; Maier and Remus, 2002). For instance, Lam and Chua (2005) found that the most important

cause of failure was the lack of alignment between organizational strategy and knowledge management initiative in a study of five unsuccessful knowledge management projects. Effective knowledge management also means that resources can be used correctly so that desired results such as innovation and better financial performance can be achieved (Darroch, 2005). The Ernest Young Center's business innovation research suggests that measuring the value and performance of the knowledge is the second important activity in organizations after changing human behaviours for the organizations (Van Buren, 1999). Gloet and Barrell (2003) believe that organizations view knowledge management as a way to both provide a competitive advantage and contribute to them. According to a research study conducted in the US, more than 60 percent of 40 senior management consultants who participated in a survey believe that knowledge management is a key success factor (Ofek and Saravay, 2001). Since it is a strategic weapon that will ensure the continued profitability of the organization, knowledge management is crucial. Organizations gain competitive advantage only when accurate and important knowledge is converted, distributed and integrated (Probst et al., 1998). Organizations that produce new knowledge and distribute it to a wide range of organizations and apply it rapidly to new technologies and products are considered successful. Skyrme (1997) suggests that successful knowledge management programs will reduce costs, provide customer focus, improve employee relationships, increase innovation and provide a competitive advantage. Zack (1999) finds that the most important concept guiding knowledge management to be the organizations strategy. In a study by Liu, Chen and Tsai (2005), it was found that knowledge management skills positively influenced new product development strategies. In another study by Janson and Wrycza (1999), it is found that entrepreneurial activities were supported by the use of knowledge technology (Aslan and Ozata, 2007). Therefore we hypothesized:

H2a: The knowledge infrastructure capability has a positive significant effect on entrepreneurial strategy-making.

H2b: Knowledge process capability has a positive significant effect on entrepreneurial strategy-making.

2.5. The relationship among knowledge management, entrepreneurial strategy-making and organizational effectiveness

In today's world, product-based competition among organizations is replaced by core competence that provides a competitive advantage based on innovation. Sustainable competitive advantage means that implementing a value creation strategy that can survive despite the organizations' current and future competitors' imitative efforts (İnce and Oktay, 2006). New knowledge, new technologies, and new products will impair the competitive potential of already existing knowledge, technology, and products eventually. Because of this reason, the role played by knowledge in organization strategies is crucial, and managers understand the potential of tacit knowledge. The knowledge in the business environment may be divided into two categories: firm-specific knowledge, and public knowledge known by a few competitors. Addition to this, firm-specific knowledge must have three characteristics in order to bring a sustainable competitive advantage: being valuable, hard to imitate by competitors, difficult to substitute (Krogh et al., 2002).

The knowledge-based view takes organizations as a set of knowledge assets and argues that the role of the organization creates value by creating and distributing these assets. Thus, an organizational strategy can be perceived as knowledge assets that distribute the organizational plan. Knowledge management can partially carry out the impact of the strategy by identifying what the strategic knowledge is and coordinating critical knowledge transfer and guiding efforts to use basic knowledge. Knowledge management influences organizational effectiveness through other channels such as control systems and resource sharing systems, addition to managing (Zheng et al., 2010).

Organizations that focus only on knowledge management cannot escape the fallacy of ignoring the vital link between organizational strategy and knowledge strategy. Today's conditions require

organizations to be smarter, and being smart for the organizations means to know the boundaries of technology and to understand where technology will adapt to knowledge management (Davenport and Prusak, 1998).

There are some studies that try to evaluate the impact of knowledge management and the strategy on organizational effectiveness. Venkatraman and Prescott (1990) argue that the alignment between the strategy and the context of the organization has significant and positive effects on organizational effectiveness. In the study, it has been found that providing an appropriate match between environment and strategy has a positive and significant effect on organizational effectiveness. Zack (1999), states that the most important concept in guiding knowledge management is the strategy of the firm. Moreover, some researchers found that fitting knowledge management initiatives with organizational strategy has additional advantages (Clarke, 2001). In a comprehensive research by Thompson (2009), the impact of technology and knowledge on organizational effectiveness was explored. This research focuses on the knowledge fields in performance-based metrics in the organizations. Data were collected from three different sources in order to investigate the relationship among knowledge, knowledge technology, knowledge strategies and organizational effectiveness. Thompson (2009) concludes that although performance-based measures have a significant relationship with technology, still there are obstacles to effective knowledge management strategies that optimize organizational effectiveness.

In another study, knowledge management infrastructure was emphasized. This study by Gold et al. (2001) finds that the knowledge infrastructure, including technology and process architecture, improves the organizational capabilities. Findings reveal that there is a significant relationship between knowledge management technology infrastructure and organizational effectiveness. Because of the fluid nature of knowledge management tools, the impact of knowledge management on organizational effectiveness has been examined from different perspectives. In another study, tacit knowledge in organizational culture is investigated with a combined approach and it is shown that this can easily be transferred to the organization's competitive advantage values. The focus of the study is to provide a knowledge base for researchers to use organizational knowledge effectively. Organizational culture includes the effectiveness of knowledge sharing within an organization (Jasimuddin and Zhang, 2014). Valmohammadi and Ahmed (2015), in their study on the impact of knowledge management and strategy on organizational effectiveness, state that there are seven factors that affect the organizational effectiveness and these factors are the following: leadership, organizational culture, knowledge strategy, knowledge processes, education, knowledge technology and incentives. The researchers use a balanced scorecard to assess this relationship. The results of the study supports that variables are positively and significantly influenced on organizational effectiveness. In this context, we hypothesized:

H3: Entrepreneurial strategy making capability has a positive significant impact on organizational effectiveness.

H4: Entrepreneurial strategy making capability has a mediating effect between knowledge management capabilities and organizational effectiveness.

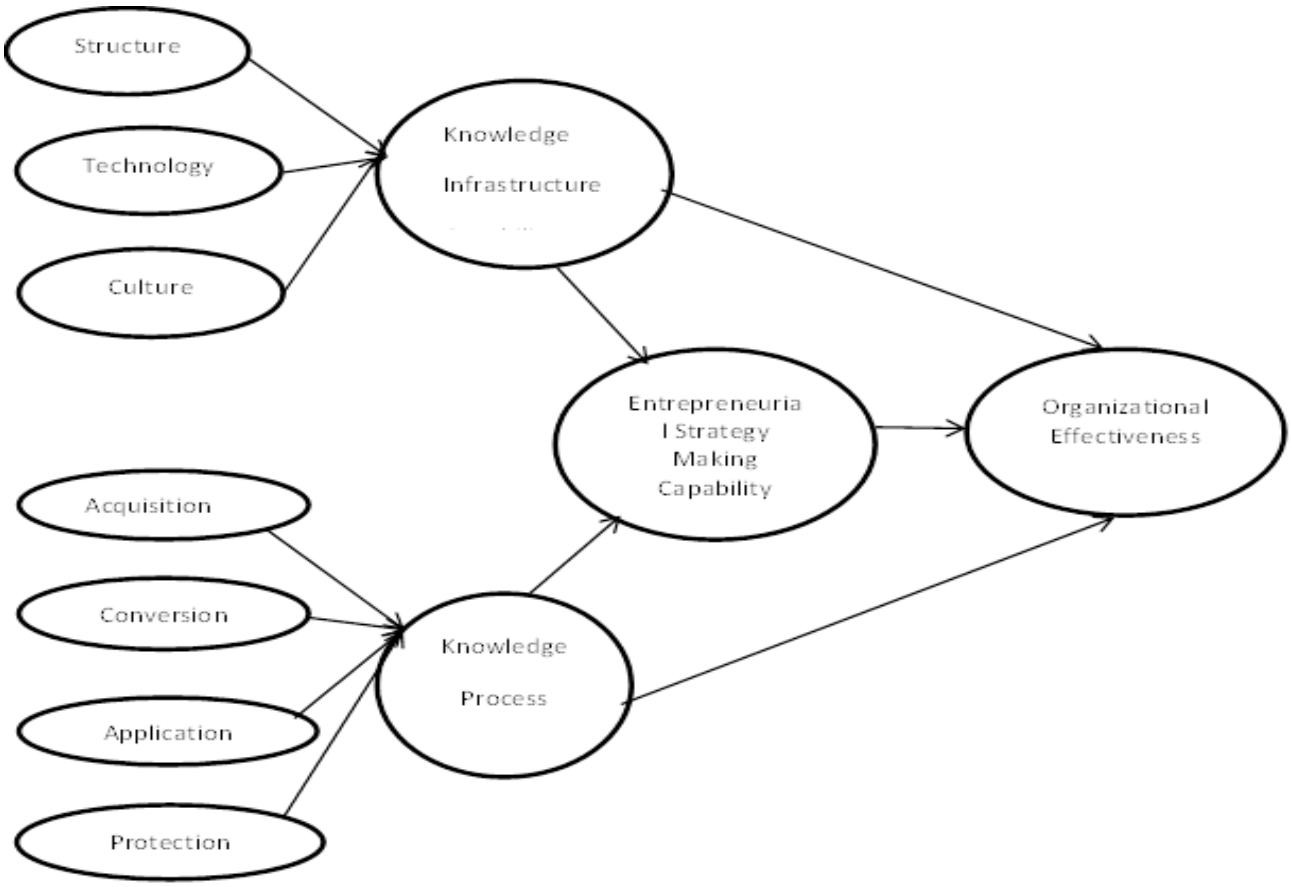

Figure I. The conceptual model of the research

3. METHODOLOGY

The purpose of this study is to investigate the relationship between knowledge management capabilities and organizational effectiveness in organizations and the mediating effect of entrepreneurial strategy making capability in this relationship. The universe of the study is 342 innovative organizations that constitute patent and R&D work, operating in 18 free zones in Turkey. The survey could not be sent to 31 of these organizations because their contact information (telephone, e-mail address, web address, etc.) could not be reached. Among the 311 organizations surveyed via e-mail, 206 responses were obtained. These 206 organizations are the sample of this study. Thus, we can conclude that the rate of returning to the survey is 66%. The organizations that are in innovative activities are included in the sample even though they do not have R&D departments. The organizations that have a free zone license yet do not continue to produce are not included in the sample. Moreover, the organizations that are involved in purchasing, selling, renting, and store activities are not included in the sample of the research either.

The organizations included in the sample are selected through interview with the marketing departments of the founding operating companies of the free zones. Moreover, each organization was called and included in the sample after discussions with production managers or their assistants. A focus group study was made with the Ministry of Economy General Directorate of Free Zones, Overseas Investments and Services and managers before the conducting the survey. Also, the survey was first sent to the general managers of the founding operating companies of Istanbul Atatürk Airport Free Zone, Bursa Free Zone, Antalya Free Zone and Trakya Free Zone by email; and, their opinions and suggestions about the issue were taken into account. In order to increase the number of participants, telephone numbers of organizations included in the sampling were obtained by communicating with the founding operating company. Later, they communicated with the staff working in contact with the free zone founder and informed them about the work. Thus, the managers who can answer the survey have been identified with the help of these personnel.

The scales used in the research are the ones that have been used in the literature before and the reliability and validity of the scales are already tested. All items except descriptive questions were measured with a 5-point Likert-type scale. The scales related to structure, culture, and technology, which are components of the knowledge infrastructure capability and the ones related to the acquisition, conversion, application, protection, and organizational effectiveness, which are the components of knowledge capability, are adapted from Smith (2006). The entrepreneurial strategy making capability scale is adapted from Li et al. (2005).

3.1. The reliability and validity of scale items

The most widely used method for determining the reliability of scale items is the cronbach alpha coefficient. When the research findings are examined alpha coefficients are obtained as the following: for knowledge infrastructure ability scale, $\alpha = 0.939$; for the ability of knowledge process capability, $\alpha = 0.969$; for the ability to entrepreneurial strategy making, $\alpha = 0.859$ and for the organizational effectiveness scale, $\alpha = 0.886$. When the Cronbach's alpha coefficients are examined, it can be seen that all the coefficients are above 0.70. Therefore, it can be concluded that these findings show that the scales used are reliable (Gefen et al., 2000). Confirmatory factor analysis (CFA) was applied to test the validity of the scales used.

Table I. The results of confirmatory factor analyses of the scales

Scale/Model	X^2	df	X^2/df	GFI	CFI	AGFI	RMSEA
Knowledge Infrastructure Capability (KIC)	184.32	107	1.72	0.90	0.99	0.90	0.059
Knowledge Process Capability (KPC)	529.45	283	1.87	0.86	0.98	0.90	0.065
Entrepreneurial Strategy-Making Capability (ESM)	3.10	5	0.62	0.99	1.00	0.98	0.000
Organizational Effectiveness (OE)	13.30	7	1.9	0.98	0.99	0.94	0.066
Goodness of Fit Indices *			≤3	≥0.90	≥0.95	≥0.95	≤0.05
Acceptable threshold levels *			≤4-5	0.89-0.85	≥0.90	≥0.90	0.06-0.08

p>.05, X2= Chi-Square, df= Degree of Freedom, GFI=Goodness of Fit Index, CFI=Comparative Fit Index, AGFI= Adjusted Goodness of Fit Index, RMSEA=Root Mean Square Error of Approximation

* Source: Schumacker and Lomax (1996) ; Tabachnick et al.(2001) ; Hooper et al.(2008) ; Çokluk et al.(2010) ; Kline, (2015

When Table I is examined, it can be seen that the values obtained from the Knowledge Infrastructure Capability, Knowledge Process Capability, Entrepreneurial Strategy-Making Capability and Organizational Effectiveness scales are within the acceptable interval. Therefore, we can conclude that the structures belong to scales are verified (Byrne, 2010).

3.2. Findings

206 businesses participated in the study, 74.3% of the participants were male and 25.7% were female. The majority of the participants (47.6%) were in the age group of 36-45 and the university graduates (69.9%). Moreover, 43% of the participants were managers, 24% were assistant managers, 10% were experts, 14% were general managers and 9% were in other positions. It is seen that 20% of the people who participated in the research have been working for 1-2 years, 23% for 3-5 years, 19% for 6-9 years and 38% for more than 10 years at the workplace that they are currently employed. Additionally, 1% of participants have 1-2 years of experience, 6.3% have 3-5 years of experience, 9.7% have 6-9 years, and 83% have more than 10 years of total experiences. Moreover, 10.7% of the organizations that participants are employed in have been operating in the sector they are currently in for 1-5 years, 21.8% of them for 6-10 years, 31.6% of them for 11-20 years and 35.9% of them for more than 20 years. 50.49% of the organizations have R&D departments.

Path analysis was performed using LISREL 8.80 to investigate research questions and related hypotheses. The selected models were then tested for goodness of fit testing including Chi-square / SD, (NFI), p-value and (RMSEA).

The path coefficient values between observed and latent variables are given in table II.

Table II. Path coefficients related to the research model

Path Coefficients (ʎ)							
Strategy (ST)	⟵	KIC	5.03	E_1	⟵	ESM	0.72
Technology (TC)	⟵	KIC	2.40	E_2	⟵	ESM	0.68
Culture (CU)	⟵	KIC	3.99	E_3	⟵	ESM	0.65
Aquisition (AQ)	⟵	KIC	3.31	E_4	⟵	ESM	0.59
Conversion (CN)	⟵	KIC	4.06	E_5	⟵	ESM	0.30
Application (AP)	⟵	KIC	4.56	E_6	⟵	ESM	0.63
Protection (PN)	⟵	KIC	4.44	O_1	⟵	OE	0.62
ESM	⟵	KIC	0.33	O_2	⟵	OE	0.75
ESM	⟵	KIC	0.57	O_3	⟵	OE	0.78
OE	⟵	KIC	0.47	O_4	⟵	OE	0.78
OE	⟵	KIC	0.33	O_5	⟵	OE	0.70
Oe	⟵	KIC	0.27	O_6	⟵	OE	0.59

According to Table II, the path coefficient values for the constructed structure vary between 0.12 and 4.57. According to the path coefficients in Table II, it is found that there is a positive relationship between the knowledge infrastructure capability variable and the entrepreneurial strategy-making capability (ʎ = 0.33; p <0.05). It was found that there was a positive relationship between the knowledge infrastructure capability variable and organizational effectiveness (ʎ = 0.33; p <0.05).

It was found that there is positive relationship between the knowledge process capability and the entrepreneurial strategy-making capability in the same direction (ʎ = 0.57; p <0.05). The results indicate that there was a positive relationship between the knowledge process capability and organizational effectiveness (ʎ = 0.29; p <0.05). Moreover, the results suggest that there is a positive relationship between entrepreneurial strategy-making capability variable and organizational effectiveness (ʎ = 0.47; p< 0.05).

Table III. The variance estimates of the model

Variance Estimates			
ST	0.86	G3	0.50
TC	0.63	G4	0.34
CU	0.74	G5	0.10
AQ	0.75	G6	0.55
CN	0.84	O1	0.38
AP	0.87	O2	0.58
PN	0.55	O3	0.76
ESM	0.75	O4	0.66
OE	0.65	O5	0.56
G1	0.65	O6	0.37
G2	0.59		

According to the Table III, variance estimates range from 0.09 to 0.87.

The fit indices for the research model are given in Table IV.

Table IV. Fit indices for the research model

Fit Indices	X^2	df	X^2/df	GFI	AGFI	CFI	NFI	NNFI	RMR	RMSEA
Model Indices	248.87	141	1.77	0.92	0.90	0.99	0.97	0.98	0.049	0.061
Goodness of fit indices			≤3	≥0.95	≥0.95	≥0.95	≥0.95	≥0.95	≤0.05	≤0.05
Acceptable threshold levels			≤4-5	0.89-0.85	0.89-0.85	≥0.90	≥0.90	≥0.90	0.06-0.08	0.06-0.08

According to the findings obtained from the analysis, estimated results are $X^2 = 248.87$ and sd= 141. As a result, $X^2/sd = 1.77$. Since this value is below 3 it can be concluded that there is perfect compliance. As a result, since the obtained values are within acceptable interval it can be concluded that the established structure is confirmed (Schumacher and Lomax, 1996; Tabachnick et al., 2001; Hooper, Coughlan, and Mullen, 2008; Çokluk, et al., 2010; Kline, 2015).

3.3. Hypothesis Test Results

The path analysis was applied to test model's hypotheses. Hypotheses have been investigated by means of path coefficients (ʎ), p-values and t-values.

From the results of this study, the following can be indicated:

Table V. Path analysis results

Hypothesis	t	p	ʎ
H_{1a} (for KIC)	2.25	p <0.05	0.29
H_{1b} (for KPC)	3.50	p <0.05	0.46
H_{2a} (for KIC)	2.69	p <0.05	0.32
H_{2b} (for KPC)	4.89	p <0.05	0.60
H3	8.11	p <0.05	0.78
H4(for KIC)	0.24*	p >0.05**	0.33
H4 (for KPC)	1.93*	p >0.05**	0.29

* t>1,96; ** p< 0.05

Regarding H1a; knowledge infrastructure capability directly influences organizational effectiveness (for KIC, t = 2,25, p <0.05, ʎ = 0,29). Thus, the H1a hypothesis is supported.

Regarding H1b; the knowledge process capability directly influences the organizational effectiveness (t = 3.50, p <0.05, ʎ = 0.46 for KPC). It can be concluded that the H1b hypothesis is supported.

Regarding H2a; knowledge infrastructure capability significantly influences entrepreneurial strategy-making capability (t = 2,69, p <0.05, ʎ = 0,32 for KIC). Therefore, H2a hypothesis is supported.

Regarding H2b; the knowledge process capability significantly affects entrepreneurial strategy-making capability (t = 4.89, p <0.05, ʎ = 0.60 for KPC). Therefore, the H2b hypothesis is supported.

Regarding H3; the entrepreneurial strategy-making capability significantly influences organizational effectiveness (t = 8,11, p <0.05, ʎ = 0,78). Therefore, H3 hypothesis is supported.

As it is suggested in the H4 hypothesis, the procedure outlined by Baron and Kenny (1986) was used to test the mediating effect the entrepreneurial strategy-making capability.

Regarding H4; when the mediator variable is included in the regression model with the independent variable, the effect of the independent variable on the dependent variable is entirely absent (t = 0.24, p >0.05, ʎ = 0.33 for KIC, t = 1.93, p >0.05, ʎ= 0.29 for KPC). Therefore, it can be concluded that the H4 is supported.

In conclusion, it can be said that the entrepreneurial strategy-making capability has a full mediating effect in the relationship between the organizational effectiveness and both the knowledge infrastructure capability and knowledge process capability.

4. DISCUSSION AND CONCLUSION

As a result, this study shows that the entrepreneurial strategy-making capability has a positive mediating effect on the relationship between the organizational effectiveness and both the knowledge infrastructure capability and knowledge process capability. This study reveals that an organization's technology, culture and organizational structure, and that how an organization acquires converts, applies and protects knowledge are the main elements of that organization's knowledge management capabilities. Additionally, it also demonstrates that these are antecedents of the entrepreneurial strategy-making capability. Moreover, the study finds that an organization's knowledge management

capability and the entrepreneurial strategy-making capability are also antecedents of organizational effectiveness. In addition to these, the relationship between knowledge management capability and the entrepreneurial strategy-making capability is supported by this study.

In the context of the sample, it has been concluded that technology, structure and culture are the antecedents of an organization's knowledge infrastructure capability. And also, acquisition, application, conversion and protection of knowledge factors are the antecedents for the knowledge process capability within the organization. The results shows us that the structure and culture have a stronger and more positive effect on the knowledge infrastructure capability; on the other hand, while technology has a positive effect, its effect is weaker in a comparison with the structure and culture's effect on the knowledge infrastructure capability. It has also been found that knowledge acquisition, conversion, application and protection have a positive effect on the knowledge process capability. It has been seen that application and converting knowledge has more influence on knowledge process capability than other capabilities.

The results also indicate that organizations must initiate processes that facilitate the acquisition/generation of knowledge on customers, suppliers, products and services. This is especially important because modern organizations now compete on the basis of the ability to acquire and use knowledge. The centralization of the conversion processes in the direction of filtering, integrating, transferring, and renewing of existing knowledge is also emphasized.

There are indicators that it is easier to transfer knowledge from organizations to individuals rather than from individuals to organizations. Through knowledge management capabilities and the relevant infrastructure, individuals will be prevented from using the knowledge for their own benefit, and moreover, the knowledge transfer to the organization will naturally be facilitated. Because of this reason, organizations need to encourage or reward individuals for sharing knowledge. In addition, rather than focusing on matching knowledge sources with problems and difficulties, it would be more accurate to make an emphasis on the general application of the knowledge.

In this study, it has been proven that knowledge process capabilities and knowledge infrastructure capabilities contribute to the organizational effectiveness. Because of this reason, management can assess knowledge management capabilities in combination with organizational effectiveness. In this study, it is concluded that management's attention should be focused on the human-technology relationship in order to increase organizational effectiveness.

After a review of the limited literature, it is seen that there is a relationship between organizational performance and the entrepreneurial strategy-making capability (Covin and and Slevin, 1989; Dess et al., 1997; Lee and Lim, 2001). For instance, the study of Covin and Slevin (1989) shows that there is no direct relationship between entrepreneurial strategy and performance of small businesses. Dess et al. (1997) find that there is no direct relationship between entrepreneurial strategy-making and performance in an example of firms that compete in various industries. Lee and Lim (2001) show that entrepreneurial strategy has a very weak positive relationship with performance in technology-based initiatives in Korea. Li et al. (2005) prove that there is a positive significant relationship between organizations' entrepreneurial strategy-making capabilities and their performance.

In this study, it is found that the entrepreneurial strategy-making capability has a mediation role between organizational effectiveness and knowledge management. Additionally, it is shown that there is a direct relationship between the entrepreneurial strategy-making capability and organizational effectiveness. This means that the reflection of an organization's entrepreneurial strategy to its organizational processes and decision-making style can be a source of competitive advantage for itself. Thereby, it can be concluded that resources or capabilities that will provide an organization with a sustainable competitive advantage should be combined with other organizational skills and capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000).

Research findings empirically provide evidence of the link between organizational effectiveness and knowledge management. The results support that the idea of the knowledge management system is not just an independent management practice, but at the same time, it is a central mechanism that enhances the cultural, structural, technological and strategic impact of the organization as it is argued in the knowledge-based view. This corresponds to Penrose's idea (1959) of that changes in the organizational region occurs with the usefulness of organizational resources. Knowledge management serves as the main leverage point for organizations.

4.1. Contributions of the study

The theoretical arguments that researchers (Zack, 1999; Clarke, 2001; Maier and Remus 2002) proposed for linking knowledge management capabilities and business strategy have been proven by this research. It also fills the gap in the literature by providing empirical support for a positive relationship between entrepreneurial strategy-making capability and knowledge management capability. Moreover, the study supports the studies by Gold et al. (2001) and Smith (2006) that find that the knowledge management capabilities are an antecedent for entrepreneurial strategy-making capability and influence on organizational effectiveness.

To the best of our knowledge, there is no study investigating how the knowledge management capability relates to entrepreneurial strategy-making capability. Therefore, it can be concluded that this study contributes to the literature by demonstrating that knowledge management capability is an important factor affecting the entrepreneurial strategy-making capability. In addition, this paper, using Gold et al.'s (2001) model, presents a theoretical framework and model that can be used to examine in more detail the link between future competence in entrepreneurial strategy-making and knowledge management capability.

4.2. Limitations

Despite the expected benefits of the research, there are some limitations as well. First of all in this study, only the manufacturing firms were included. For this reason, there is a need for further study to determine the clear impact of the dimensions of organizational effectiveness of knowledge management capabilities on different organization types.

Secondly, research is only applied on innovative organizations in manufacturing activities in free trade zones in Turkey. The fact that organizations representing all sectors cannot be found in free zones should be taken into consideration. Because of this reason, the organizations participated in the survey may not represent innovative organizations from all sectors in the country.

Thirdly, similar to previous studies, this study targets the managers who are more likely to understand the concepts of entrepreneurial strategy-making, organizational effectiveness and knowledge management capabilities. However, it should be stated that the possibility of some inaccurate responses stands, because all participants may not have a holistic view of their organization's capabilities and processes.

4.3. Suggestions for the future research

First of all, future researchers may want to expand the study population on a country-by-country basis, considering differences between countries, and whether there will be differences among them. Since cultural differences affect the organizational characteristics and organizational effectiveness, it will be quite interesting to study on an international level.

Secondly, since the knowledge process capability is a versatile concept, there is no generally accepted conceptualization about which components should form the knowledge process capability in the literature (Stein and Zwass, 1995; Zack, 1999; Alavi and Leidner, 2001; Gold et al., 2001). Therefore, it is useful to assess the relationship between the entrepreneurial strategy-making capability and other aspects of knowledge management capability.

Thirdly, previous researchers suggest that there may be different relationships at the factor level when certain components are concerned (Lee and Choi, 2003). Thus, the business strategy can have a general impact on the knowledge infrastructure capability and the knowledge process capability at the construct level while they might a different effect on the enablers and processes. Therefore, further study should be done on the research model in which the path analysis is used to examine the relationship between knowledge management capability, business strategy and organizational effectiveness in depth.

Last but not least, there is a need for further investigation the relationship between the knowledge management capabilities and organizational effectiveness in the literature. Even though this study is done on the ground in this area, there are still some opportunities for further research in order to explore the effect of business strategy and knowledge capabilities on other success measures including user satisfaction, intention to use and perceived benefits and other precursors (to be specific; user characteristics, task characteristics and organizational strategy) on knowledge management success.

4.4. Suggestions for practitioners

The findings of this research provide empirical evidence that supports the remarks in the literature that suggest that aligning knowledge management with strategy may increase organizational effectiveness (Zack, 1999; Clarke, 2001; Lang, 2001; Maier and Remus, 2002).

The practical implications suggest that an effective knowledge management requires a holistic approach that takes into account the relationship between the organization's business strategy, knowledge infrastructure capability and knowledge process capability. Firstly, the results show that an effective knowledge management is an obligation for an organization in order to have business strategy-making capability. Additionally, the business strategy associated with the knowledge management initiatives is also important for organizational effectiveness. Because of this reason, organizations should align knowledge management initiatives with the organization's business strategy. Investments should not be transformed into infrastructure or processes without regard for alignment with the business strategy.

Effective knowledge management requires managers to develop a pragmatic and holistic approach to understand how the technological, cultural and structural aspect of an organization impact and support the knowledge management processes (Davenport et al., 1998; Gold et al., 2001; Jennex and Olfman, 2006). In order to ensure a high level of organizational effectiveness, management should initiate knowledge management initiatives by working on improving the organization's knowledge infrastructure capabilities by paying attention to three aspects: infrastructure, structure, and culture. Basic knowledge management usually begins with the acquisition of explicit knowledge. In order to provide an effective organization, it is necessary to develop mechanisms that enable people to share and obtain tacit knowledge forms that are in the mind and critical to the organization. Considering this, organizations should encourage and even reward the environment of cooperation, and information sharing. In addition, organizations must adapt their organizational structure and redesign their culture in order to identify their technology needs more clearly and provide adequate support for knowledge sharing. Appropriate infrastructure capabilities will provide a sustainable and effective platform for improving knowledge process capabilities, and improvements in the knowledge process capabilities will lead improvements in the organizational effectiveness.

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