

THE RELATIONSHIP BETWEEN CORPORATE ENTREPRENEURSHIP AND
INNOVATION AND THE MODERATING EFFECT OF TRANSFORMATIONAL
LEADERSHIP

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ABSTRACT

THE RELATIONSHIP BETWEEN CORPORATE ENTREPRENEURSHIP AND INNOVATION AND THE MODERATING EFFECT OF TRANSFORMATIONAL LEADERSHIP

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Innovation has one of the most important activities for ensuring competitiveness and development which results in sustainable economic growth. Innovation is encouraged by corporate entrepreneurship which challenges bureaucracy and promotes entrepreneurial behaviors within an organization. Corporate entrepreneurial environment is the stimulator of innovation within large companies through development of new opportunities, renewing processes, implementation of new methods, and exploitation of the new products or services. In this study, the relationship between innovation and factors such as top management support, work discretion/autonomy, time availability, organizational boundaries, and rewards/reinforcements, which are covered within the scope of corporate entrepreneurial factors, are examined. In addition, the moderation effect of transformational leadership in the relationship between corporate entrepreneurial factors and innovation is investigated. For this purpose, survey data collected from 135 unit level managers of a large defense and aviation company are examined by regression analysis. Contrary to the corporate entrepreneurship literature, no significant relationship between innovation and the corporate entrepreneurial factors have been found by this research. Moreover, a significant moderating effect of transformational leadership on the relationship between corporate entrepreneurial factors and innovation has not been found.

Keywords: innovation, corporate entrepreneurship, transformational leadership, defense/aviation industry, Turkey.



ÖZ

KURUMSAL GİRİŞİMCİLİK VE İNOVASYON ARASINDAKİ İLİŞKİ VE DÖNÜŞÜMCÜ LİDERLİĞİN DÜZENLEYİCİ ETKİSİ

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İnovasyon sürdürülebilir ekonomik büyümeye önayak olan rekabet gücü ve gelişimi sağlamadaki en önemli rollerden birine sahiptir ve bürokrasiye meydan okuyan bir kuruluştaki girişimci davranışları teşvik eden kurumsal girişimcilik tarafından desteklenir. Kurumsal girişimcilik ortamı, yeni fırsatların gözden geçirilmesi, süreçlerin yenilenmesi, yeni yöntemlerin uygulanması, yeni ürün veya hizmetlerin kullanılması ile büyük şirketlerdeki inovasyonun teşvik edicisidir. Bu çalışmada, inovasyon ile kurumsal girişimcilik boyutları kapsamında ele alınan üst yönetim desteği, iş takdir yetkisi/özerklik, zaman mevcudiyeti, örgütsel sınırlar ve ödüller/takviyeler gibi boyutlar arasındaki ilişki incelenmiştir. Ayrıca dönüşümcü liderliğin kurumsal girişimcilik boyutları ve inovasyon arasındaki ilişki üzerindeki etkisi araştırılmıştır. Bu amaçla büyük bir savunma ve havacılık şirketinin 135 farklı bölüm yöneticisinden toplanan anket verileri regresyon analizi ile incelenmiştir. Bu araştırmada, kurumsal girişimcilik yazınından farklı olarak, inovasyon performansı ile kurumsal girişimcilik boyutları arasında anlamlı bir ilişki bulunamamıştır. Ayrıca dönüşümcü liderliğin kurumsal girişimcilik boyutları ve inovasyon arasındaki ilişki üzerinde anlamlı bir etkisi saptanamamıştır.

Anahtar Kelimeler: İnovasyon, kurumsal girişimcilik, dönüşümsel liderlik, savunma/havacılık sanayii, Türkiye

To My Parents



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CHAPTER 1

1. INTRODUCTION

The global economy and fast developing technology are creating strong changes for organizations all over the world. Because of these changes, it is a big challenge for companies to develop competitive advantages (Dewhurst, Harris and Heywood, 2012). Continuous innovation in products and processes is a key way to keep pace with the changing technology and maintain market share for companies. For this reason, innovation is increasing in importance and consequently creating a significant interest in the management literature (OECD Science, Technology and Innovation Report, 2016).

Another reason for the popularity of continuous innovation is the decreasing product life cycles and the increasing competition in today's market conditions. Due to fast changing technology, companies keep the product life cycles shorter and adapt their products according to new technologies (Artz, Norman, Hatfield, and Cardinal, 2010). Process innovations decrease cost and time to market. Launching innovative products with new technology earlier than rivals provides competitive advantage and bigger market share to private companies. Moreover, in the defense industry, designing and manufacturing superior products provide strategic and deterrent advantages to countries (FitzGerald, Sander and Parziale, 2016). As an example of maintaining military advantage through science and technology investments, the latest technology air defense system will bring deterrent advantages to its owner country and make all other old technology aircrafts and fuses useless (USAF 2030 STO Strategy Report, 2019). In order to gain military advantages, it is very important to sustain continuous innovation in products and manufacturing processes to develop products earlier and cheaper. Furthermore, innovation capabilities make a company much more agile in meeting customer requirements (Lu and Ramamurthy, 2011). Developing countries like Turkey should develop their own way specific to their

culture, resources, legacy for innovation to meet customer requirements in a very short time and adapt their products and processes to fast-changing concepts to compete with developed countries.

Due to the reasons mentioned above, business practitioners and management scholars have been searching the answer to the question, “How can a company be more innovative?” Organizational boundaries determine employees’ responsibilities and roles in large companies. For this reason, employees mainly do only their own professional jobs with very limited knowledge transfer between different departments. This may bring optimization and cost reduction to a certain extent. However, as conditions and constraints change in the globalized world, wealth is created by innovation, not optimization. This means that wealth is not created by making perfect or optimal what is already known; rather it is reached by imperfectly grabbing the unknown (Kelly, 1997).

Let us consider an employee with a creative idea in a large company. Where there is a lack of corporate entrepreneurship, the employee meets obstacles such as the difficulty to change written rules, procedures, and methods of new product development when he/she attempts to innovate in a large company. These strict rules prevent the emergence of new ideas and innovations (Schaeffer, 2015). Corporate entrepreneurship is a good strategic and managerial solution for stretching strict rules to ensure innovation.

The employee trying to realize his/her creative idea and innovate as an entrepreneur can also establish a new and small company but it is difficult to survive in this increasing competition environment as a small entrepreneur. In that case, there are different prerequisites to work on that creative idea, such as a wide network, financial power, market knowledge, and awareness of consumer requests and problems (Ardichvili and Cardozo, 2000). Even good new ideas or innovations may not turn into a viable product due to limited financial and technological resources, poor management skills, or insufficient marketing. Resources are crucial for

innovation and include human resources, funds, time availability, and materials (Batten, 2002). Studies such as Elfenbein, Hamilton and Zenger (2010) define this impact as the “small firm effect”. Chesbrough (2002) investigated Xerox’s support and management of its technology spin-off organizations as a successful corporate entrepreneurship example for entrepreneurs within large companies. Dobrev and Barnett (2005) investigate the question how an individual participates in entrepreneurship or founding of a new company/organization and found that members of organizations become unlikely to leave their organizations to build new ones as their organizations age and grow, which is evidence that organizations are effective in shaping and constraining the innovative behavior of their members (Dobrev and Barnett, 2005). Shane and Venkataraman (2000) mention that entrepreneurship is more likely to happen in large organizations especially when the individuals lack incentives to realize their own projects. It is found that transition to entrepreneurship is three times higher among employees of large and mature companies than SMEs (Sorensen, 2007).

Intrapreneurship, which means entrepreneurship appearing as a venture or as a corporate entrepreneurship within a large company, is found as one of the links to innovation (McFadzean, O’Loughlin, and Shaw, 2005). Entrepreneurs working in large companies can come up with many innovations and contribute to economic growth for their nations. That is why in recent research corporate entrepreneurship has gained attention as a key to increase innovation, enhance productivity, and revitalize organizations (Zahra, 2015; Acs, 2006)

In the literature, there are many different terms for entrepreneurship within a large company. Morris and Kuratko (2002) define this type of entrepreneurship as “corporate entrepreneurship”. Another term is coined by Hornsby, Kuratko and Zahra (2002) as “internal corporate venturing”. While Covin and Miller (2014) prefer the term “strategic entrepreneurial posture”, Pinchot (1985) suggests the term “intrapreneurship”. Tang and Koveos (2004) coin the term “venture entrepreneurship”, while Dess and Lumpkin (2005) use the terms “entrepreneurial

orientation” (EO) and “corporate entrepreneurship”. The term “*corporate entrepreneurship*” is used in this study because it is preferred by most of the science citation indexed research papers in recent years.

Corporate entrepreneurship (CE) is a process that creates a new organization within an existing organization, or generates strategic rejuvenation or innovation (Sharma and Chrisman, 1999). This definition includes the collection of organizational *innovations* within the company (Guth and Ginsberg, 1990), *strategic renewal* activities to gain competitive advantages (Ireland, Covin and Kuratko, 2009), and *corporate venturing* activities (Zahra, 1996, Hitt, Beamish, Jackson and Mathieu, 2011; Shimizu, 2012).

Innovation refers to the company’s commitment and willingness to create new products, new production processes, and new organizational systems (Zahra and Covin, 1995). Damanpour (1991) explains innovation as a new product, process, service, or a new plan for an organizational structure or administrative system. Guth and Ginsberg (1990) explained *Strategic renewal*, as the generation of richness by the new combinings of sources. Changing the business scope and competitive approaches to revitalize operations are also included in strategic renewal. *Corporate venturing* is defined by researchers as new business creation (e.g. Covin and Slevin (1991); Lumpkin and Dess (1996). The three processes are entangled, strengthening, and mutually supportive (Simsek and Heavey, 2011) for the transformation of companies from local to globally competitive players.

Corporate entrepreneurship is a tool that large companies take advantage of to increase innovation because without CE they suffer from inertia or idleness due to their bureaucracy and strict managerial structure (Thornberry, 2001). This tool provides a connection to global knowledge, new technologies, and specific proficiency, which eventually enhance company innovation (Boone, Lokshin, Guenter and Belderbos, 2019). Corporate entrepreneurship is a hybrid way to use the power and skills of a large company and an entrepreneur’s advantages like agility,

ease of applying new ideas, innovativeness, and fast deciding or judgements. Companies which apply corporate entrepreneurship practices are dynamic and flexible, ready to catch the rising new business opportunities (Busenitz, Plummer, Klotz, Shahzad and Rhoads, 2014; De Jong, 2013). Large companies have noticed the benefits of CE and applied this model for their innovation projects by utilizing the innovative capabilities of their employees (Ahuja & Lampert, 2001). Boeing's "Phantom", Google's "X Lab", Amazon's "Lab 126 and A9", Apple's "Jony Ive's Apple Design Lab", Raytheon's "Bike Shop", Du Pont's "Experimental Station", Ford's "special Vehicle Team and Silicon Valley Lab", Nike's "Innovation Kitchen", Walmart Labs, AUDI's "Quattro GmbH", Nordstrom's "Innovation Lab", HP Labs, Staples' "Velocity Lab", Xerox's "PARC", IBM's "Thomas J. Watson Research Centre", Samsung's "SAIT" and Arçelik's "Garage" are successful examples of corporate entrepreneurship in big technology based companies from different industries.

There are five essential steps for a company attempting to benefit from the opportunities of CE (Hornsby, Naffziger and Kuratko, 1993). As a first step, upper management promotes entrepreneurial activities within the firm and provides an appropriate climate for those activities (Kuratko, Hornsby, Sabatine, 1999). In the second step, the organization provides freedom of decision-making and autonomy to employees towards the implementation of new ideas (Ireland, Covin and Kuratko, 1999). As a third step, the company provides rewards and reinforcements to employees taking part in entrepreneurial activities (Hornsby, Naffziger and Kuratko, 1993). In the fourth step, the company arranges workload ensuring the slack time required for pursuing innovations (Kreiser, Kuratko, Covin, Ireland, Hornsby, 2019). As a last step, the company provides a supportive organizational structure and boundaries that prevent people from looking at problems outside their own jobs and encourages employees to look at the organization from a broad perspective (Kuratko, Ireland, Covin, Hornsby, 2005).

This fivefold mechanism needs proper management, which leads to creative ideas, solutions, and innovation through a transformation within the company. Especially for innovative behaviors, leadership is highly important (De Jong, 2007). Balsano, Goodrich, Lee, Miley, Morse and Roberts (2008) show that leadership may boost innovation by developing a corporate entrepreneurial environment and culture which contribute innovative behavior. Damanpour (1991) mentions that there is a significant relationship between leadership and corporate entrepreneurship.

Corporate entrepreneurship is very challenging due to the pre-existing structures in companies and resistance to change in the organizations. To manage this difficult process, leadership style is very important as it is a critical factor affecting the organizational characteristics of such as culture, motivation, strategy, and structure (Cheung and Wong, 2011). CE activities are generally initiated and managed by one “Champion” entrepreneur within the company (Brown, 2004). Therefore, in any successful corporate entrepreneurship endeavor, transformational leadership is needed to encourage staff to go beyond the status quo and increase their ability to innovate (Ling et al., 2008). In traditional management, there are many mechanisms to control people or correct mistakes. However, in CE there are fewer management mechanisms to make the team more agile (Burns, 2013). At this point, the motivation, control, and management of the team depend on the direct supervisor who is main management mechanism (Shin and Zhou, 2003).

Leadership is concerned with the motivation of the employees, communication in and between groups, and setting directions. The leadership style of the direct supervisor affects the innovation capability of the team significantly because employees take decisions according to the organization’s strategy and operational environment (Bel, 2010). The management of an entrepreneurial group within a company is a big challenge which requires distinctive leadership capabilities. Therefore, management practices should be tailored by the leader to facilitate corporate entrepreneurship and support the company’s organizational objectives (De Church et al., 2010). It is expected that the relationship between corporate

entrepreneurial environment and innovation performance may be moderated through the effect of transformational leadership. Zahra (1996) finds that corporate entrepreneurship is more likely to occur in transformationally managed organizations because transformational leadership supports main strategic activities like CE and innovation (Ling, Simsek, Lubatkin and Veiga, 2008). Matzler, Schwarz, Deutinger and Harms (2008) find a positive and significant impact of transformational leadership on innovation and profitability, while Eisenbeiss, Knippenberg and Boerner (2008) find that transformational leaders have a positive impact on R&D team innovativeness.

Research on innovation and corporate entrepreneurship has also showed that companies should provide a considerable degree of autonomy to their units to implement their innovation strategies (Burgelman, 2002). Autonomy gives rise to innovation when it is managed properly. Studies indicate the importance of autonomy given to operational managers and their role in corporate entrepreneurship (Shimizu, 2012). However, this autonomy can also be harmful or useless to the company (Burns, 2013). First of all, creative ideas and the company's strategy should be in line because the company can support projects only in its strategic focal area. Giving autonomy to operational or lower level managers may cause information asymmetry between different levels of management (Kuratko et al., 2004). This risk may be prevented by transformational leaders because their inspirational motivation and idealized influence behaviour transform personal goals into a joint aim for the whole organization (Wang and Howell, 2010). This means that relationship between innovation performance, which is one of the main outputs of CE, and CE may be moderated by the effect of transformational leadership.

Another risk brought by autonomy is the freedom addiction of employees. An employee who gets used to working for a project in an autonomous group can have problems adapting to the rules and working environment of the main organization after the project due to loss of autonomy (Morris and Kuratko, 2002). Furthermore, those kind of autonomous habits and behaviors may intensify opportunistic behaviors

(Shimizu, 2012). These risks should be managed properly to get the most benefit of corporate entrepreneurship and that is why leadership has an important moderating factor on CE and innovation. Burke, Sims, Lazzara and Salas (2007) find that transformational leaders foster employees' trust. This in turn may make employees more vulnerable to their leader and regulate opportunistic behaviors within the team. The sector is also important when studying innovations. An entrepreneur in the defense sector cannot work on missiles or weapons individually. In the defense/aviation sector, an entrepreneur without financial and managerial support cannot realize his/her idea and manufacture a prototype of a plane or warcraft. That is why, especially in the defense sector, companies and entrepreneurs may need corporate entrepreneurship as a suitable solution for innovativeness and to get rid of the slowness of large and mature companies. Due to these reasons, corporate entrepreneurship and organizational factors need to be investigated further for the defense/aviation sector.

In the defense industry, Lockheed Martin initiated "Skunk Works" as a corporate entrepreneurship activity in 1943 to design and manufacture warcraft in a very short time during World War 2 (Miller, 1993). The Skunk Works term can be found in the 4th edition of the American Heritage Dictionary of the English Language as "an often-secret experimental laboratory or facility for producing innovative products, as in the computer or aerospace field" and is defined as any work involving a specially talented group of people that are separated from the main organization or mother company to autonomously work on a high technology secret project. Breakthrough innovation is usually the main task of Skunk Works groups and these groups have a budget and a limited schedule because they try to develop prototypes in a very short time (May, 2013).

Due to the above reasons, there is a need to investigate the interrelationships between the corporate entrepreneurial environment, innovation, and transformational leadership, especially in defense sector. The aim of this study is to examine the relationship between corporate entrepreneurial factors and innovation, and the

transformational leadership's moderating effect on this relationship in a large defense/aviation company.

1.1. Significance of the Study

The significance of this study is its contribution to CE, innovation, and leadership literatures. The model developed for this research is a new model and to the best of our knowledge, tested only in this research. In the literature, there are studies about the relation between corporate entrepreneurship and firm performance (Engelen, Gupta, Strenger and Brettel, 2012) or the relationship between transformational leadership and corporate entrepreneurship (Chang, Chand and Chen, 2017).¹ However, the model developed for this research includes transformational leadership as a moderator between corporate entrepreneurship and innovation relationship.

Another significance of the study is that the relationship between the corporate entrepreneurial environment and innovation is investigated in a company from the Turkish defense/aviation sector. Therefore, the study is the first to investigate the corporate entrepreneurial environment in the Turkish context. Turkey is still trying to accomplish its modernization and changing an economy based more on industry than agriculture (Imamoğlu and Karakitapoğlu-Aygün, 2002; Sargut, 2001). Due to the cultural and socio-economic characteristics of Turkey, it is worth investigating the corporate entrepreneurial environment and transformational leadership in the Turkish context.

Many studies in the innovation literature (e.g., Urban and Wood, 2017; Chen et al. 2014; Mostaghel,Oghazi, Patel, Parida and Hultman, 2019) measure innovation through the respondent's perception of innovation. However, in this research, the innovation performance of the company departments involved are taken from a company innovation database, hence quantitative data is used. This means that in this

¹ Only five of the 158 research papers empirically testing entrepreneurial orientation and its relationships discuss leadership in their abstracts, and only one research which is conducted by Todorovic and Schlosser (2007) is about transformational leadership (Wales, Gupta and Moussa, 2013).

study, instead of perception, real innovation performance data is used, which is another significance of the study.

The study aims to generate managerial implications by evaluating the corporate entrepreneurial environment in one of the companies with the biggest annual revenue in the defense/aviation sector in Turkey. A big portion of the Turkish government's budget is spent on defense projects. A successful defense project enhances the government's strategic superiority, which is a priceless contribution. However, the problem is resources lost, like money and time, during attempts for successful innovation and new product development projects with a limited budget. Defense companies should be successful with time and budget constraints in their innovation projects because developing countries like Turkey have limited financial resources. The results of our study may be a guide for innovation project managers and people who work on science and technology policy.

Another important contribution of our study is that the data is collected from "chief" titled operational/unit level managers or team leaders. Although unit level managers are increasingly recognized for promoting corporate entrepreneurship, there is little empirical research on unit level managers (Braun, Peus, Weisweiler and Frey, 2013). Most of the previous studies have focused on the various activities of senior managers and middle level managers to support corporate entrepreneurial activities (e.g. Kanter, 1985; Hornsby et al., 2009; Kuratko et al., 2005). In literature, there is increasing attention on the unit level managers' role in transformational leadership and entrepreneurship. Unit level managers not only encourage the interest in CE but also their employees' commitment to entrepreneurship within the company (Stopford and Baden-Fuller, 1994), making their perspective important. In addition, there are empirical results that mention that research on transformational leadership should intentionally isolate unit and company level of analysis (Chang et al., 2017; Schriesheim, Castro, Zhou and DeChurch, 2006; Yukl, 1999). However, research analyzing transformational leadership at the unit level is still insufficient (Braun et al., 2013).

1.2. Research Questions

The main research questions of this thesis are:

1. Which dimensions of the corporate entrepreneurial environment have a significant relationship with innovation?
2. Is the relationship between dimensions of the corporate entrepreneurial environment and innovation moderated by the transformational leadership of the unit level manager?

The relationship between the dimensions of corporate entrepreneurial environment (which are top management support (TMS), time/resource availability (RA), work discretion (WD), organizational boundaries (OB rewards/reinforcements (R/R)) and innovation will be investigated by regression analysis using SPSS software. Any significant relationship between the dimensions of corporate entrepreneurial environment and innovation will be tested for the moderation effect of transformational leadership of the unit level manager on that relationship by the PROCESS supplement of SPSS.

The following chapter gives a literature overview of corporate entrepreneurship and factors affecting it, transformational leadership, especially the role of the unit level manager on corporate entrepreneurship, and the definition and types of innovation. Next the hypotheses and research methods section describes the company where the survey was conducted, the scales and the data collection methods of the study, and the hypotheses to be tested. This is followed by a quantitative analysis section investigating the relationship between the dimensions of the corporate entrepreneurial environment and innovation. The moderation effect of unit level managers on this relationship will also be investigated in this section. The thesis continues with a discussion of the findings, its limitations, and directions for future research.

CHAPTER 2

2. LITERATURE REVIEW

This chapter provides an overview of previous research in corporate entrepreneurship, transformational leadership, and innovation. Firstly, corporate entrepreneurship and its main dimensions supporting the corporate entrepreneurial environment will be discussed. Secondly, transformational leadership, and especially the effect of middle managers' transformational leadership, will be presented. Thirdly, the definitions and types of innovation in the literature will be discussed. Lastly, the research models which include any combinations of corporate entrepreneurship, transformational leadership, and innovation in the literature and their findings will be presented.

2.1. Corporate Entrepreneurship

The application and the practice of the term “corporate entrepreneurship” was first seen in industry at Lockheed Martin Company in 1943 under the name “Skunk Works”. During World War 2, the US Air force needed a new warcraft in a hurry. Challenging constraints were determined and the project was started. The skunk works group, a corporate entrepreneurial group in Lockheed Martin, designed and manufactured the new aircraft in just 150 days (Miller, 1995).

Later the term “corporate entrepreneurship” was first mentioned in the academic world by Peter Drucker in 1970, in his article in the Journal of Business Policy titled “Entrepreneurship in the Business Enterprise”. While this topic was getting attention, Burgelman (1983a) was the first to use the “corporate entrepreneurship” term in his paper's title. In the article, he explains that entrepreneurial activity in established and large companies is an integral and essential part of the strategic process, which coincide with the company's competence and opportunities by means of internally generated resources (Burgelman 1983a, 1983b, 1984a, 1984b).

Zahra (1991) adds the strategic renewal dimension to this definition and explains CE as all activities (formal or informal) that constitute a new business via product/process innovations and development of the market. Such activities necessitate the strategic renewal of that business at all levels, such as department, function, or project (Zahra, 1991). As a contribution to Zahra's definition, Sharma and Chrisman (1999) expand CE by noting that "CE is a process that creates a new organization or stimulates renewal or innovation in an already-existing organization". This definition brings together all activities with regard to innovation, corporate venturing, and strategic renewal. In this explanation, an innovation is the combination of new product development (NPD) or development of new processes in order to increase market share or profit by decreasing cost, time, or waste. Innovation also focuses on new marketing techniques, new managerial and organizational improvements/applications in the workplace, or external relations or business practices (OECD and Eurostat, 2005).

Corporate venturing includes new business creation (Govindarajan and Trimble, 2005; Kuratko and Audretsch, 2009) or investing in new businesses created by outside companies like start-ups or spin-offs (Phan, Wright, Ucbasaran and Tan, 2009). Another corporate entrepreneurial activity is strategic renewal, which includes the renewing of the attributes of an existing organization, which influences the organization's long-term view and generates development or growth (Agarwal and Helfat, 2009). The various definitions of corporate entrepreneurship in historical order is shown in Table 1.

Table 1 - Definitions of Corporate Entrepreneurship

Author	Journal/Book	Year	Definition
Burgelman	Management Science	1983a	“Corporate Entrepreneurship refers to the process whereby firms engage in diversification through internal development. Such diversification requires new resource combinations to extend the firm’s activities in areas unrelated, or marginally related, to its current domain of competence and corresponding opportunity set.”
Miller	Management Science	1983	“An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with "proactive" innovations, beating competitors to the punch.”
Jennings and Lumpkin	Journal of Management	1989	“Corporate Entrepreneurship is defined as the extent to which new products and/or new markets are developed. An organization is entrepreneurial if it develops a higher than average number of new products and/or new markets.”
Guth and Ginsberg	Strategic Management Journal	1990	“Corporate Entrepreneurship encompasses two types of phenomena and the processes surrounding them: 1. The birth of new businesses within existing organizations, i.e. internal innovation or venturing; and 2. The transformation of organizations through renewal of key ideas on which they are built, i.e. strategic renewal.”
Covin and Slevin	Entrepreneurship Theory and Practice	1991	“Corporate Entrepreneurship involves extending the firm’s domain of competence and corresponding opportunity set through internally generated new resource combinations.”

Table 1 (Continued)

Zahra	Entrepreneurship Theory and Practice	1993	“Corporate Entrepreneurship is a process or organizational renewal that has two distinct but related dimensions: innovation and venturing, and strategic renewal.”
Stopford and Baden-Fuller	Strategic Management Journal	1994	“Corporate Entrepreneurship is a term used to describe entrepreneurial behavior inside established mid-sized and large organizations.”
Zahra	Academy of Management Journal	1996	“Corporate Entrepreneurship includes radical product innovation, risk taking, and proactiveness. It also includes business venturing and ‘intrapreneuring’ and organizational renewal.”
Covin and Miles	Entrepreneurship Theory and Practice	1999	“Corporate Entrepreneurship is used to increase competitiveness through efforts aimed at the rejuvenation, renewal, and redefinition of organizations, their markets, or industries. Corporate entrepreneurship revitalizes, reinvigorates, and reinvents. The term Corporate Entrepreneurship refers to cases where entire firms act in ways that generally would be described as entrepreneurial.”
Saly	Corporate Entrepreneurship: Antecedents and Consequences of Entrepreneurship in Large Established Firms	2001	“Corporate Entrepreneurship is the process where established firms identify and exploit opportunities by creatively organizing new combinations of resources.”

Table 1 (Continued)

Hornsby, Kuratko and Zahra	Journal of Business Venturing	2002	“Corporate Entrepreneurship centers on re-energizing and enhancing the ability of a firm to acquire innovative skills and capabilities.”
Ireland, Kuratko and Morris	Journal of Business Strategy	2006	“Corporate Entrepreneurship is a process through which individuals in established businesses pursue entrepreneurial opportunities to innovate without regard to the level and nature of current resources.”
Wolcott and Lippitz	MIT Sloan Management Review	2007	“Corporate Entrepreneurship is the process by which teams within an established company conceive, foster, launch, and manage a new business that is distinct from the parent company but leverages the parent’s assets, market position, capabilities, or other resources. It differs from corporate venture capital, which predominantly pursues financial investments in external companies. Although it often involves external partners and capabilities (including acquisitions), it engages significant resources of the established company, and internal teams typically manage projects. It is also different from spinouts, which are generally constructed as stand-alone enterprises that do not require continuous leveraging of current business activities to realize their potential.”
Goodale, Kuratko, Hornsby, Covin	Journal of Operations Management	2011	“Corporate Entrepreneurship refers to the pursuit of entrepreneurial actions and initiatives that transform the established organization through strategic renewal processes and/or extend the firm’s scope of operations into new domains; that is, new product-market segments or technological arenas.”

In the corporate entrepreneurship literature, there are many definitional ambiguities (Sharma and Chrisman, 1999; Phan, Wright, Ucbasaran and Tan, 2009; Gregoire, Noel, Dery, and Bechard, 2006; Amberg and McGaughey, 2017). Many studies put forth that CE is promoted in large organizations because large and mature organizations provide the appropriate environment for CE (e.g., Sorensen, 2007; Schaeffer, 2015). However, CE can be observed in small and medium sized enterprises (SMEs) as well (Bojica and Fuentes, 2012; Armesh, Wei and Marthandan, 2014; Hughes and Mustafa, 2017). Another ambiguity becomes apparent in using the terms “corporate entrepreneurship” and “intrapreneurship”. Pinchot (1985) was the first author who used the term “intrapreneurship” in order to clarify why one does not have to leave the corporation where he/she works to become an entrepreneur. In his book, he explains how innovative employees can utilize resources like time, manpower, materials, etc. to generate new ideas both for the company profit and for their personal benefits. An intrapreneur is the hybrid of an entrepreneur and a company employee. Pinchot (1985) defines them as dreamers who take responsibility to innovate within an organization and transform an idea into a profitable reality.²

In the literature, not only the terms, but also the concepts and dimensions of corporate entrepreneurship have been used differently. Narayanan, Yang, and Zahra (2009) explain corporate entrepreneurship as the generation and implementation of new ideas and mainly focus on just one dimension: corporate venturing. However, they mention the close relationship between corporate venturing and innovation. Burgers and Jansen (2008) examine corporate entrepreneurship articles published and show that innovation, corporate venturing, and strategic renewal are often highlighted as the main common outputs in the CE literature. Even though Burgers and Jansen (2008) have identified three outputs, only “innovation” remains as the common output of corporate entrepreneurship according to the definitions of CE in

² The term “intrapreneurship” has been less used and the term “corporate entrepreneurship” has mostly been preferred (e.g., Cornelius, Landstrom and Persson, 2006; Reader and Watkins, 2006; Gregoire, Noel, Dery and Bechard, 2006; Schildt, Zahra, and Sillanpaa; 2006; Keupp and Gassmann, 2009).

the literature. This agreement in the literature shows that innovation is very important for the evaluation of the corporate entrepreneurship environment.

Kuratko and his colleagues have done most of the studies about the effects of organizational factors on corporate entrepreneurial behavior (Hornsby et al., 1999, 2002, 2009; Kuratko et al., 1990, 2005). Kuratko et al.'s (1990) research shows that five theoretically different factors, which are TMS, autonomy (WD), rewards, source availability, and organizational boundaries, encourage corporate entrepreneurship on the part of first- and middle-level managers. Later Hornsby, Kuratko and Montagno (1999) conduct empirical research for the exploration of the impact of organizational factors on CE in Canadian and US companies and make a comparison between them. The results from all levels of management show that there are no significant differences between the US and Canadian managers' perceptions of the importance of those five factors. After this research, many researchers used Corporate Entrepreneurship Assessment Instrument (CEAI) in their recent studies (Hornsby et al., 2002; Adonisi, 2003; Brizek, 2003; Wood, 2004; Rhoads, 2005; Davis, 2006; Rutherford and Holt, 2007, Goodale et al. 2011; Van Wyk and Adonisi, 2012; La Nafia, 2016). In the next section, we provide detailed explanations of the dimensions of corporate entrepreneurial environment which are also used in the CEAI.

2.1.1. Top Management Support

Top management support is defined as the promotion and support of entrepreneurial activities within the company by senior management. Such promotion and support include supplying sources like time, materials, money, incentives, etc. for employees to take part in entrepreneurial activities and the endorsement of innovative ideas (Morris, Kuratko, Covin, 2008; Hornsby et al., 2009). In a large and mature company, top management is the developer of the mission, vision, and strategy of the company and employees follow this route to reach future plans, aims, and objectives for the benefit of the company (Ireland, Kuratko and Morris, 2006). Besides this, top management defines the personal goals for their employees which should be in line with company goals for the establishment of a shared mission and positive climate of

support and trust (Braun et al., 2013). Top management support promotes entrepreneurial behaviors and overcomes the structural barriers to corporate entrepreneurship (Ireland et al., 2006). Top managers provide the resources to meet employees' needs so that employees take entrepreneurial actions and bring forward their own innovative ideas (Lyon, Lumpkin, Dess, 2000; Hornsby et al., 2002; Morris, Kuratko and Covin, 2008). Therefore, top management's practices define the company's capacity to enhance its entrepreneurial intensity (Barringer and Bluedorn 1999). Moreover, it is found that the interaction between top management and employees increases innovation (Hornsby et al., 2002). Top management's willingness to boost entrepreneurial activities is a good scale to measure top management support (Bhardwaj, Sushil and Momaya, 2007). However, corporate entrepreneurship and providing a CE environment can be seen by top management as costly, hard-to-implement, and time-consuming (Zahra, Filatotchev and Wright, 2009). If top management does not support and reward corporate entrepreneurship activities, operational or middle managers will not engage in innovation (Ireland, Covin and Kuratko, 2009). In this case, the lower-level managers may prefer to follow the existing procedures exactly and do their work as they are told to do. In doing so, they do not promote entrepreneurial activities in their groups (Hornsby et al., 2009). Furthermore, managers differ in their attitudes towards the need for change and this can cause conflicts and operational confusions within a firm (Burgess, 2013). Due to lack of top management support, such conflicts and confusions may continue in the firm and decrease its innovation performance.

2.1.2. Work Discretion/Autonomy

Work discretion means the organization's tolerance to failure and granting more power of authority and autonomy to employees during the decision-making process (Kuratko, Morris and Covin, 2011). According to Hornsby et al. (2002), autonomy can be measured with the freedom to develop ideas, capability of being one's own boss, and the right to select working methods, or to take part in decision-making. Work discretion and autonomy result from decentralization of responsibilities and the employees' self-monitoring of their own results (Platzek et al., 2011), generating

entrepreneurial activities in the organization (Kuratko et al., 2001). A flexible operational environment is very important in maintaining an effective corporate entrepreneurial climate (Adonisi and Van Wyk, 2012), where corporate entrepreneurs see their innovative trials are supported and hence feel more motivated to innovate. Autonomy or work discretion increases job satisfaction and commitment to the company, and in turn, the motivation for innovation in different sectors (Cowden, Cummings, and Profetto-Mcgrath, 2011). In the literature, there are many studies stressing the importance of autonomy given to operational and mid-level managers regarding their role in creating innovative and competitive environment (Hornsby et al., 2009, Kuratko et al., 2004; Floyd and Lane, 2000).

On other hand, too much autonomy may allow middle and operational managers to behave opportunistically (Shimizu, 2012). The innovation literature stresses that very high and very low levels of autonomy cause negative creativity (De Jong and Den Hartog, 2007). Also, a lack of employee coordination can occur due to excessive autonomy, and effectiveness can decrease as a result. Too much decentralization can cause waste, like effort duplication or resource use in infeasible projects. Therefore, the degree of autonomy should be managed well, and success in managing corporate entrepreneurial projects needs monitoring and a good balance of autonomy.

Due to reasons mentioned above, top managers should tolerate potential failures and consider them as lessons learned in entrepreneurial activities. The team's capabilities and experience will increase proportional to the degree of freedom given to the entrepreneurs within the company (Farson and Keyes, 2002). However, to gain its benefits, autonomy should be managed and balanced by managers.

2.1.3. Rewards/Reinforcement

Motivational tools like reward/reinforcement systems are key drivers of CE. Reward refers to gains and/or benefits which the company offers its staff in return for their entrepreneurial performance and success (Hornsby et al., 2002). A proper rewarding

system stimulates CE activities by motivating employees to consider engagement in innovative behaviors (De Jong and Wennekers, 2008). There are two types of rewards: exterior and interior. Exterior rewards may be bonuses, extra payments, share of profit, or equity or shares in the company. Interior rewards may be in the form of promotions, autonomy, job security, free time to work on favorite projects, expanded job responsibilities, respect and recognition, budget for research, or business trips to conferences or meetings for employees to catch up with the latest information about their entrepreneurial field (Kuratko et al., 2011). Companies use such tools to encourage their employees' entrepreneurial efforts and motivate them to accept responsibilities and particular roles (Bhardwaj, Sushil, Momaya, 2011). Many researchers note the importance of rewards/reinforcements systems for entrepreneurial outcomes such as performance increase, innovation, and cost savings (e.g., Hornsby et al., 2009; La Nafie et al., 2019; Sathe, 2003).

In order to enhance innovation in the company, the rewards system should be designed properly to encourage entrepreneurial behaviors, thoughts, and actions. The employee who takes part in corporate entrepreneurial activities should be rewarded so that he/she would feel recognized among other employees. If a corporate entrepreneur learns that his/her salary is same with those of the other employees who are not engaged in entrepreneurial activities in the company, he/she may be demotivated (Marvel, Vojak, Griffin and Hebda, 2007). Furthermore, reward/reinforcement should be in parallel with the employee expectations. Some employees are motivated by monetary rewards, others by recognition and power, yet others by career development, promotions, or social rewards (Kuratko, Morris and Covin, 2011). Moreover, taking care about equity and equality regarding the rewards of corporate entrepreneurs is challenging because rewards/reinforcements may cause envy in organizations (Biniari, 2012).

Hornsby et al. (2002) mention that rewards/reinforcement systems should be planned by considering aims, feedback, and responsibilities. Therefore, employees will be aware of that engagement in corporate entrepreneurial and innovative activities will

be rewarded and that motivation will increase employees' intention to take more risk for entrepreneurial activities and help overcome their risk aversion (Hayton, 2005).

2.1.4. Time Availability

Time availability refers to assessment of workloads to provide slack time for employees to pursue innovative opportunities and the design their job structures to accomplish organizational goals (Kreiser et al., 2019). A manager is responsible towards the shareholders of a company to ensure that the company resources are put to best use. Creative companies need a degree of slack time to experiment. Using 165,410 projects' data which started in Kickstarter during 2009-2015, Agrawal, Catalini, Goldfarb and Luo (2016) found that more ideas are created during breaks. They also mention that slack time helps employees increase focus and coordination so complex projects go further during slack times. As a result, time availability was found as a crucial resource to generate entrepreneurial activities in the literature (Das and Teng, 1997). Top management should make sure that employees who engage in corporate entrepreneurial activity have enough time to continue such activities. The 3M Corporation has some model practices regarding time availability. The company allows their employees to utilize 15% of their official work hours for developing new ideas and projects. As a result, 3M has introduced significant inventions, like Post-It notes and Scotch tape (Finkle, 2012). Google also allows 20% organizational slack time to its employees to work on the ideas they are passionate about. This autonomy has resulted in at least ten new services every quarter, such as Google News and Gmail (Finkle, 2012). In such innovative companies, slack time is added to the system so that employees can work on creative ideas which are not formally written in their job description.

2.1.5. Organizational Boundaries

Organizational boundaries can be defined as the "determination of the borders of the social structure which comprises an organization". This means that activities are performed within the limits of certain specific procedures defined in the organizational context (Dutton and Dukerich 1994; Kogut 2000). Ireland (2009)

defines organizational boundaries as an organizational arrangement of workflow relationships, communication, and authority. Another definition of organizational boundaries is the “determination of the resource distribution within the company which will shape the route of organizational growth” (Helfat, 1997), while Santos and Eisenhardt (2005) define boundaries as the “determination of the territory of organizational influence, including its influence on the external forces and degree of control on industry.”

Flexible boundaries support entrepreneurial activity by developing information flow between external and internal environments and between divisions of a company (Miller et al., 2007). This kind of supporting organizational boundaries are designed in accordance with work flow, communication, and an administrative authority which selects and implements new ideas (Hisrich et al., 2008; La Nafie et al., 2014). There are many ways to determine organizational boundaries. Boundaries can be the borders of a hierarchical architecture or functional borders of teams within an organization. Therefore, organizational boundaries are identified by the capabilities of employees from different departments. Modifying these boundaries means changing their departments or capabilities. Hence, there will always be a resistance within the company to change boundaries because those kind of changes proposed by senior managers involve a modification of comfort zones of the employees (Thomas, Sargent and Hardy, 2011). Flexible boundaries bring organizational changes in the culture, work colleagues, and management, which causes a high level of discomfort and difficult situations for the employees, resulting in facing dismissing or cancellation of incentives (Davis and Gardner, 2004).

It is accepted that flexible organizational boundaries should be set to encourage and manage entrepreneurial activities with optimum use of resources which enable innovation. Effective knowledge transfer between employees from different departments increases the number of innovative activities and creativity (Moorman and Miner, 1998; Miller, Fern and Cardinal, 2007; Aalbers et al., 2013), as social connections increase creativity (Perry-Smith and Shalley, 2003). According to

Kuratko et al. (2014), the implementation of corporate entrepreneurship requires flexible organizational boundaries to enable increased communication between people/department/companies. Companies successful in knowledge transfer within the company will take advantage of innovative activities (Paruchuri, 2010; Whelan, Valk and Parise, 2011). For example, Christensen et al. (2008) give the example of Toyota where key personnel from different departments are brought together in a completely different workplace to have them work as an innovative team. Finkle (2012) mentions that flexible boundaries are one of the important keys to success in stimulating corporate entrepreneurship within Google.

The next section presents the definitions of innovation, kinds of innovation, and the relationship between corporate entrepreneurship and innovation.

2.2. Innovation

Increasing globalization, accelerated technological developments, and shortened product lifecycles increase competition, so companies need to create new businesses and/or do continuous innovation on their main businesses, processes, or products (Brown and Eisenhardt, 1997; Kuratko et al., 2004). That is why firms invest in innovation, which is critical for firms trying to survive and grow in a dynamic business environment (Damanpour, 1991; Jung, Chow and Wu, 2003). The most critical activities for the survival and growth of the company are the ones devoted to creating, capturing, standardizing, and marketing innovations (Cefis and Marsili, 2006).

In parallel to the fast changing competitive environment, the approaches to innovation are also changing. For example, in the OECD report of 2010, one can see the statement below:

Innovation is extensively identified as a crucial growth engine. The fundamental approach to innovation is shifting away from research and development focused models to other innovation processes in knowledge-based globalized economies. Thus, understanding the trajectory and find new ways or solutions to support innovation becomes more important (CERI/STI, 2010).

Many researchers have offered different definitions for innovation. According to Mohr (1969), changes bringing novelty or renewal to an organization are defined as innovation. Zaltman, Duncan and Holbek (1973) suggest that innovation is any idea, practice, or material that is new for the unit/organization. Mintzberg (1983) defines this term as doing things differently and creatively, which means leaving established patterns. Boer and During (2001) consider innovation as a change or a renewal in single or a combination of technology, product, organization, or market. Nohria and Gulati (1996) extend the definition of innovation by adding any policy, method, or market opportunity that is perceived as new by managers. Rogers (1998) mentions that innovation includes creation of new knowledge such as radical innovations and the assimilation of current knowledge such as incremental innovations or kaizen activities. According to Damanpour (1991), the innovation process starts with the generation of new ideas, and continues with development of the plans for these new ideas and then adaptation and application of those ideas and suggestions on the processes or products of the company. The European Commission (1999) enlarges the definition of innovation as the profitable generation, absorption, and taking advantage of novelty in the social and financial spheres. According to the OECD and Eurostat definition, innovation includes new products, processes, and services or significant improvements on existing products, processes, services, marketing methods, business practices, and workplace organization (OECD and Eurostat, 2005). The last innovation definition is from the OSLO Manual (2018): “An innovation is 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”. In all of above definitions, newness is the main aspect of innovation.

In the literature, descriptions of innovation types are also varied. According to Morris and Kuratko (2002), there are four types of innovations. These are discontinuous innovation, dynamically continuous innovation, continuous innovation, and imitation.

- Discontinuous innovation is a breakthrough innovation; i.e., services or products that meet a need that has not been met before, such as refrigerator, automobile, or cellular phone.
- Dynamically continuous innovation is a radical improvement of an existing product, process, or service, such as no frost refrigerator, electric automobile, or smartphone.
- Continuous innovation is an incremental innovation where the existing product or service's performance is increased. Changing the process to manufacture a product cheaper or in less time, or making an electric car driving an extra 100 km on a single charge, or a higher pixel camera smartphone can be examples.
- Imitation is copying or adapting the innovations of other companies. If Samsung introduces a new type of smartphone successfully for use in general communication, LG will be forced to introduce its version of the same thing.

Schumpeter (1996) describes innovation types as:

- Presentation of totally new or developed product or service
- Presentation of a new process
- Creating a new market
- Determination of new solutions for the raw material supply
- The creation of industrial organization structures.

Nowadays the term “disruptive innovation”, which can be included in “discontinuous innovation”, has become very popular in the literature after Christensen defined it first in the Harvard Business Review in 1996 (Gobble, 2016). If an innovation is disruptive, it should be the outcome of a major invention that causes big disruptive changes on the economy (Burns, 2013). This kind of innovation causes big changes and brings wealth to its inventor or originator, but may cause negative effects, even bankruptcy, for others who cannot adapt to it in time (Christensen and Bower, 1996).

2.3. Transformational Leadership

Leaders in organizations manage and motivate not only employees but also groups in the organization (Chen, Kirkman, Kanfer, Allen, and Rosen, 2007). Employees' aims vary in the organization and leaders are responsible for the alignment of employees' purposes with company's common missions, building an environment of trust, support for new ideas, management of resources, knowledge transfer, and coordination of task completion (Zaccaro, Rittman, and Marks, 2001).

Modern leadership includes the task of creating a supportive environment for employees' creativity to enhance innovation within the company (Shalley and Zhou, 2008). Studies show that leadership behavior and innovative work behavior have a significant relation with each other (Yukl, 2002; De Jong and Den Hartog, 2007). There is a common understanding that the employees' entrepreneurial orientation must be properly managed in the company to harvest its full capability (Wales, Gupta, and Moussa, 2011). Researchers note that organizations cannot be successful in turning entrepreneurship into performance advantages when employees' entrepreneurial actions and the company strategy are not well aligned by leadership (Gupta, MacMillan, and Surie, 2004). De Jong and Den Hartog (2007) show that leadership styles such as transformational or participative leadership may be the antecedents of corporate entrepreneurship and innovation. Collective or participative leaders give authority to their followers and impress a sense of responsibility upon the employees. In this kind of leadership environment, while leaders assign challenging duties to employees, they also provide support in case of failure and risk (Russell, 1989). Leaders support employees' efforts by encouraging them to take more responsibility and increasing their autonomy (Avolio and Bass, 1995). Some researchers note that leader support is positively related with followers' proactive behavior, new idea implementation (Axtell, Unsworth, Holman and Wall, 2000), creativity (Madjar, Oldham and Pratt, 2002), environmental initiative (Ramus and Steger, 2000), and personal initiative (Ohly, Sonnentag, and Pluntke, 2006). Furthermore, Chen et al. (2007) find that perceptions of leadership behavior affect

the leader–follower relationships and that the leadership climate moderates the individual performance of followers.

In this study, we will emphasize transformational leadership (TL) due to its effect on the intrinsic motivation of employees (Matzler, Schwarz, Deutinger and Harms, 2008) and the increased attention on this concept in the leadership literature (e.g., Chang et al., 2017; Engelen et al., 2012; Chen et al., 2014; Matzler et al., 2008; Braun et al., 2013). TL is declared as the leadership style which enables the transformation of the followers or the organization itself (Wang and Howell, 2010), and is important for both the corporate entrepreneurial environment and innovation because this kind of leadership behavior is helpful in strategy implementation by forming an environment where followers respect and trust the leader and are ready to do much more than expected (Ling et al., 2008). Transformational leaders form the identities of their followers, the social contagion processes, emotional ties, and value internalizations (Shamir, House, and Arthur, 1993). Therefore, followers are ready to give up their personal benefits for a common purpose and go beyond expectations for the good of company (Bass, 1985). Conger and Kanungo (1998) note that transformational leaders are change-oriented and entrepreneurial. Thus TL is connected to the encouragement of innovation and change in organizations (Howell and Avolio, 1993). Gumusluoglu and Ilsev (2009) discuss the positive and significant influence of TL on the innovation of organizations with research done on 43 micro and small sized software companies. Companies managed by transformational leaders are more likely to take part in corporate entrepreneurship (Ling, Simsek, Lubatkin and Veiga, 2008). Transformational leaders display a high level confidence in their team's skills to achieve big collective aims (Schaubroeck et al., 2007) and change the employees' individual aims into a common goal for the whole group (Wang and Howell, 2010) to encourage them to find innovative solutions (Eisenbeiss et al., 2008).

TL has four main dimensions, which are listed as idealized influence or charisma, inspirational motivation, intellectual stimulation, and individualized consideration. Charisma or idealized influence is defined as creating trust and an attractive vision of the future. Inspirational motivation is defined as energizing followers to go beyond self-interest, which results in an inspiring vision and high performance expectations. The third dimension, intellectual stimulation, is defined as encouraging subordinates to think in creative ways, question assumptions, and trying to find new solutions to problems by looking from new perspectives. The last dimension, individualized consideration, refers to the degree to which a manager treats subordinates individually and focuses on their development by providing personal support, encouragement, and coaching (Bass, 1985; Ling et al., 2008; Chen et al., 2014).

In the literature there is a relationship between TL and organizational champions. Howell and Higgins (1990) state that organizational champions are entrepreneurs using informal organizational mechanisms to support innovations. Organizational champions (corporate entrepreneurs) advance and support novelties by resisting obstacles brought on by organizational officials (Shane, 1994). It can be seen in the different definitions of the “champion” that there are characteristic TL behaviors which affect innovation (Table 2).

Table 2 - Definitions of “Champion”

Author(s)	Definitions of "Champion"
Howell and Higgins (1990)	"... informal emergent leaders who exhibit transformational behavior" (p. 182).
Holt (1992)	"The entrepreneur or manager who pursues the idea, planning its application, acquiring resources, and establishing its markets through persistence, planning, organizing, and leadership." (p. 37)
Jensen and Jorgensen (2004)	"An individual that is willing to take risks by enthusiastically promoting the development and/or implementation of an innovation inside a corporation through a resource acquisition process without regard to the resources currently controlled." (p. 64)
Howell et al. (2005)	"Individuals who informally emerge to actively and enthusiastically promote innovations through the crucial organizational stages, are necessary to overcome the social and political pressures imposed by an organization and convert them to its advantage." (p. 642).
As cited in Howell et al. (2005)	"Individuals who informally emerge in an organization (Chakrabarti, 1974; Roberts and Fushfeld, 1988; Scholl, 1963) and make "a decisive contribution to the innovation by actively and enthusiastically promoting its progress through the critical [organizational] stages." (Achilladelis et al., 1971: 14).
Howell (2005)	"Individuals who informally emerge to promote the idea with conviction, persistence, and energy, and willingly risk their position and reputation to ensure the innovation's success." (p. 723)

Transformational leaders understand and respond to their followers’ needs, skills, and aims (Walumbwa, Orwa, Wang, and Lawler, 2005). The most important effect of TL may be observed on the job satisfaction, motivation, organizational commitment, self-confidence, and creativity of employees. Researchers find a positive and significant connection between TL perception and job satisfaction (Judge, Woolf,

Hurst, and Livingston, 2006; Judge and Piccolo, 2004). Gumusluoglu and Ilsev (2009) find a positive and significant effect of TL on creativity and organizational innovation. Moreover, Bass and Riggio (2006) find that TL has a positive and significant effect on motivation and they inspire their followers to do more than what they are asked to do. Furthermore, a positive and significant relationship is found between team perceptions of the leader's TL and the performance of the team, in different industrial sectors such as the military (Bass et al., 2003), financial services (Schaubroeck, Walumbwa, Avolio & Zhu, 2007), and research and development (Eisenbeiss et al., 2008).

2.4. Transformational Leadership as a Moderator

Researchers show that companies may be unsuccessful in turning entrepreneurship into performance benefits due to inadequate leadership (Gupta, MacMillan and Surie, 2004). Engelen, Gupta, Strenger and Brettel (2012) investigate TL as a moderating factor between entrepreneurial orientation within the company and the performance of company, and find that transformational behaviors of leaders are required for the effective implementation of entrepreneurial orientation for companies to seek new opportunities and increase their performance. This result is consistent with the idea that leadership constitutes an important integration and alignment mechanism in the implementation of strategy successfully (Panagopoulos and Avlonitis, 2010).

Transformational leaders strengthen employees' commitment to the company's strategic activities by acting as a role model for motivating employees to follow the leader's moral values and behaviors (Podsakoff, MacKenzie and Bommer, 1996). Employees respect and trust in their leader and so they are motivated to perform more than they are expected to do due to the transformational behaviors of their leaders (Yukl, 1989). Transformational leaders stimulate intellectuality, help their followers redefine problems, and to solve old cases with new solutions (Eisenbeiss, Van Knippenberg and Boerner, 2008). This encourages cooperation between employees and prepares them to work together for innovative solutions.

Companies with transformational leaders are more likely to have a corporate entrepreneurial environment, and therefore, increased innovation (Zahra, 1996; Gumusluoglu and Ilsev, 2009). This literature shows that the TL has a moderating effect on CE and innovation relationship. In order to investigate these relations of corporate entrepreneurship, innovation, and transformational leadership, a survey is conducted in a defense company, which is explained in detail in the next chapter.



CHAPTER 3

3. HYPOTHESES AND RESEARCH METHODS

This thesis examines the relationship between dimensions of corporate entrepreneurial environment (TMS, WD, R/R, TA, and OB) and innovation using a quantitative approach. Moreover, the moderation effect of transformational leadership of the unit level manager on the relationship between CE and innovation will be investigated. This chapter will provide an overview about the research context, the research model and hypotheses, and the methods used in this thesis.

3.1. Research Context

This study was conducted in a large defense/aviation company in Turkey. Due to security concerns of the company, throughout the thesis the company will be referred to as “Company X”.

Company X was established by Turkish and international partners with the decision of meeting the combat aircraft needs of the Turkish Air Force. Company X has become Turkey's center of technology in design, development, modernization, manufacturing, integration, and life cycle support of integrated aerospace systems, from fixed and rotary wing air platforms to unmanned air vehicles and satellites. Company X, which ranks among the top hundred global players in the aerospace and defense arena with \$1 billion annual revenue and more than 10000 employees, builds its business on five strategic pillars as shown below:

- Aero structures group,
- Aircraft group,
- Helicopter group,
- Unmanned aerial vehicle group,
- Space systems group

Company X, which became a unilateral aviation and space center by carrying out projects and new investments, has a modern production facility in Turkey, furnished with high technology machinery and equipment that has an environmental infrastructure and provides extensive manufacturing capabilities, ranging from parts manufacturing to aircraft assembly, enhanced laboratory and test systems, flight tests and delivery, design/development facilities and factories.

Company X is very effective in terms of design, manufacturing infrastructure, and human resources and serves as an “Aviation Centre”. It is also the privileged supplier partner of many international companies.

3.1.1. Innovation and Technology Strategy of Company X

There are two important reasons for choosing Company X as the context for this study. The first is that the first implementation of corporate entrepreneurship took place in Lockheed Martin (Miller, 1995), a defense/aviation company, which shows that the sector is suitable for investigating the relationship between innovation and corporate entrepreneurship. Company X has many departments like engineering, design, and manufacturing, and from the point of view of the sector, product, customers, and structure, Company X is very similar to Lockheed Martin because it designs and manufactures its own aircrafts. In the defense and aviation sector, products should be innovative to survive and compete against international rivals. Also, Lockheed Martin was one of the partners during establishment of the Company X so the structure of both companies are similar like in terms of sector and size.

The second reason for choosing Company X from the defense/aviation sector is the innovation recording system of this company, which is an innovation suggestion system for employees about processes, products, or services in the company. An innovation suggestion is a systematic expression of ideas about products and services offered or produced in line with the company's main objectives and strategies, which are proposed in relation to a business to improve efficiency and/or effectiveness. The innovation recording system provides ideas for improvement of the current situation, evaluates the suggestions, rewards the idea owner by processing the appropriate

suggestions and communicating the unsuitable suggestions to the bidder in a justified and explanatory manner in matters that directly or indirectly affect the company processes. There is a wide range of innovation suggestions recorded in this system from small daily incremental innovations to new products which create new markets for the company. The employee's suggestions are first evaluated by his/her chief of department, who makes a rough calculation for the cost and benefit of this proposal and later that information goes to the Suggestion Evaluation Commission. This commission makes the final decision by evaluating the suggestions within the scope of the corporate culture, the ways of doing business of the company, past studies, employee motivation, and the benefit to the company. It may exclude proposals that are not appropriate. In order to evaluate the innovation suggestions, the suggestions should cover at least one of the headings of quality, time, cost, occupational health and safety, production assisting team, and environment, and be approved by the first supervisor and/or Suggestion Evaluation Commission.

The innovation recording system lists all the innovation proposals according to their financial gain to the company and every quarter the first three suggestions in the list get rewards. However, some innovation suggestions may not have a computable financial gain like Occupational Health and Safety (OHS), environment or quality improvement etc. and a score of 1 is given as a standard for proposals that cannot be calculated or made under \$500 even if the annual net earnings cannot be calculated.

All the suggestions are recorded in the suggestion system and are listed by their department number. Each innovation suggestion has a staff member responsible for providing correct, reliable, and understandable information and the necessary coordination of the given proposal. The first supervisor of the innovative idea owner and the Corporate Process Management Engineer are automatically assigned by the system as "Corporate Expert". The innovation suggestions are entered by the staff to the system and evaluated by the corporate expert in accordance with the strategic goals of the company. There are different types of gains of innovation suggested by the company employees. Financial gain is the amount of monetary gain over one year by the actual implementation of the innovation proposal. Financial gain is the sum of reductions in workmanship, material, weight, electricity, and other costs.

Other costs is the sum of the cost items such as energy, water, waiting, cost of poor quality, or blocked potential investment. If the suggestions made by the employees are within the scope of their job description which means that the proposals are already required to be done according to the employee's job description, they are excluded from the evaluation. In the event that malicious behaviors are detected in order to receive an award, those behaviors are punished. When calculating the cost of poor quality, the quality assurance reports (QARs) written on the specified situation before the application of the proposal are taken into account. If such a quality assurance report is not available, a profit calculation of eliminating poor quality is not carried out. In those cases, innovation financial gain is calculated as zero.

The departments' innovations are recorded as the number of suggestions and the associated cost reductions or gains. Every three months, there is a ceremony for the suggestions with the highest gain. There are both financial awards and prestige awards, like getting a special thank-you card from the company general manager, or an award cup for the teams. This system gives this study the chance to measure innovation performance by numeric data, which makes an important contribution to the literature.

3.1.2. Data Collection

For corporate entrepreneurship and leadership studies, the commonly used method for data collection is conducting questionnaires (e.g., Engelen et al., 2012; Somech, 2006; Chen et al., 2014; Chang et al., 2017). In this study, the questionnaires are completed by the unit level managers of the departments, who have the title of "chief". The company has 150 departments with financial income recorded in the innovation record system and those departments have at least one innovation realizing financial gain or income for the years 2015-2017. All of the first level managers ("chiefs") of the 150 departments participated in the survey. The chiefs were asked to fill the questionnaires in two different time phases to prevent common method bias (Podsakoff et al., 2012). All participants filled the questionnaires (in English) face to face with the researcher. The participants were asked to fill the first part of the questionnaire at the first appointment and two weeks later the second part

was filled. “The Corporate Entrepreneurship Assessment Instrument-CEAI” (Kuratko et al., 1990; Hornsby et al., 2002) was used to measure employees' perceptions of the internal antecedents of CE within the firm. TMS for CE was measured by 19 items (e.g., “In my business unit, developing one's own ideas is encouraged for the improvement of the organization”), work discretion/autonomy was measured by 10 items (e.g., “I have the freedom to decide what I do on my job”), rewards/reinforcement was measured by 6 items (e.g., “The rewards I receive are dependent upon my work on the job”), time availability was measured by 6 items (“I always seem to have plenty of time to get everything done”), and organizational boundaries was measured by 7 items (e.g., “There are many written rules and procedures that exist for doing my major tasks”). For each of these five scales, participants responded to a 5-point Likert scale with responses ranging from “Strongly Disagree” to “Strongly Agree.”

To measure unit level transformational leadership, a 20-item Multifactor Leadership Questionnaire (MLQ Form 5X-Short) scale developed by Avolio, Bass, and Jung (1999) was used. The unit level manager (“chief”) was asked to indicate the degree to which the statements accurately described his/her own leadership (1 = “strongly disagree” through 5 = “strongly agree”). The scale had the following four subscales and sample items: idealized influence (such as “I instill pride in being associated with him/her”), inspirational motivation (“I emphasize the importance of having a collective sense of mission”), intelligence stimulation (“I reexamine critical assumptions to question whether they are appropriate”), and individual consideration (“I give my team members individualized attention”). The scales used in this research can be found in Appendix B.

In this research, we used the innovation performance data from Company X’s innovation record system. As it is mentioned in the previous section, both incremental innovations like kaizen and utility models, and radical innovations like new products, services, or processes, are recorded in this system and listed according to their financial gains in US dollars.

3.2. The Model and Hypotheses

In this section the hypotheses for the corporate entrepreneurial factors - innovation relation and for the transformational leadership as a moderator on the relationship between CE factors and innovation are generated based on the related literature.

As it is mentioned in the previous section, the dimensions of CE environment include TMS, WD, R/R, TA, and OB (Kuratko and Goldsby, 2004; Goodale et al., 2011; Mueller and Shepherd, 2014). Previous research notes a relationship between these corporate entrepreneurial dimensions and innovation (Chen et al., 2014; Ferreira, Fernandes, Alves and Raposo, 2015; Chang et al., 2017). Transformational leaders encourage employees at the unit level to get involved in innovation through the search for new products and strategic renewal actions (Vera and Crossan, 2004), and focus on individual employee needs for the establishment of new opportunities for innovation and strategic renewal actions (Chang et al., 2017). Due to those effects of transformational leadership, it may be considered as a moderator on the relationship between corporate entrepreneurship and innovation. From this point of view, our research model is generated as shown in Figure 1. According to our research model, TMS, WD, R/R, TA, and OB are CE dimensions supporting innovation, and transformational leadership has a moderating effect on this relationship.

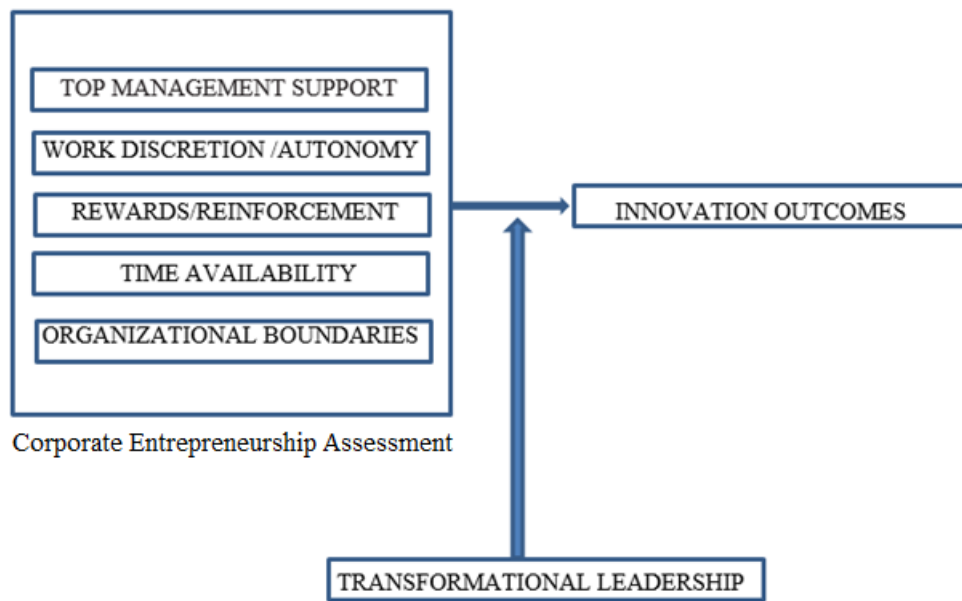


Figure 1 - Research Model.

These dimensions are explored below followed by the related hypotheses.

3.2.1. Top Management Support

Top managers support eases and encourages employees' entrepreneurial behaviors by providing the resources meeting employee needs and by championing innovative ideas so the employees can take entrepreneurial actions (Lyon et al., 2000; Kuratko et al., 2001; Antoncic and Hisrich, 2002; Morris et al., 2008). In the literature a positive relationship has been found between top management support and innovation (Cooper and Kleinschmidt, 2007; Kachouie ve Sedighadeli, 2015). Therefore, this research proposes that:

H1: There is a significant relationship between TMS and innovation outcomes.

3.2.2. Work Discretion/Autonomy

Research results indicate that higher levels of decision-making autonomy are associated with a higher probability of generating innovations (Beugelsdijk and Jindra, 2018). Research on autonomy has shown that employees generate more creative ideas when they decide what to do about accomplishing the tasks they are given (Breevaart and Zacher, 2019). Managers should accept that entrepreneurial activities are often unsuccessful, and should provide freedom to the entrepreneurs

within the company to enable autonomous decisions so that the number and outcomes of innovations increase. Especially in projects with high technology novelty it is found that autonomous teams are more effective (Patanakul, Chen and Lynn, 2012). In line with these findings, this study proposes that:

H2: There is a significant relationship between WD and innovation outcomes.

3.2.3. Rewards/Reinforcement

In the literature, a positive relationship has been found between rewards/reinforcement and entrepreneurial outcomes such as innovation (Kuratko et al., 2001; Sathe, 2003; DeJong and Wennekers, 2008). The rewards system and the resource availability are cultural elements that determine employees to have entrepreneurial initiatives (Goodale et al., 2011). Rewards have always been one of the primary motivation source for employees to achieve their goals and rewards remain as a persuasive source of motivating for innovation in companies (Tantaua, Chiniea, Carleab, 2015). In this respect, we propose that:

H3: There is a significant relationship between RR and innovation outcomes.

3.2.4. Time Availability

Agraval, Catalini, Goldfarb and Lou (2016) provide evidence supporting that during breaks or in their spare time, employees are more inclined to generate innovative ideas and even invent when they receive encouragement for their creative efforts without time pressure. Therefore, upper management should ensure that employees who engage in corporate entrepreneurship have enough time to continue such activities. In this respect, we propose that:

H4: There is a significant relationship between TA and innovation outcomes.

3.2.5. Organizational Boundaries

Organizational boundaries are defined by Goodale, Kuratko, Hornsby and Covin (2011) as the precise explanations of the expectations from organizational work and development of mechanisms for evaluating, selecting and performing tasks. Research shows that regulating organizational boundaries is very important not only for disseminating information within the company but also for opinions entering from outside the company to solve problems inside the company. Flexible organizational boundaries cause an increase in entrepreneurial activities due to the enhanced information flow (Miller, Fern and Cardinal, 2007). In line with the above literature, we propose that:

H5: There is a significant relationship between OB and innovation outcomes.

3.2.6. Moderating Effect of Transformational Leadership on the Relationship between Corporate Entrepreneurship and Innovation

Transformational leadership is expected to play a moderating role on the relationship between innovation outcomes and corporate entrepreneurship environment involving the five dimensions mentioned earlier. This moderating effect of leadership may be explained by changes in the work environment, work culture, and employees' motivation.

According to Bass (1999), leadership style affects the work environment and defines the organizational culture by aligning the interests of company and employees. Leader behaviors help employees to put their self-interest aside and affect employees' values and desires (Bass, Avolio, Jung and Berson, 2003). The changes caused by leadership in the work environment and culture can lead to an increase or decrease in employee creativity, motivation, autonomy, or time availability (Hornsby et al., 2009).

Creativity is the generation of new and beneficial ideas (West, 2002), while innovation is the implementation of these ideas (Rosing, Frese and Bausch, 2011). The main factors affecting employee creativity are motivation, resources like money,

time availability, staff, and managerial practices like empowering or challenging work and supervisory inducement (Amabile and Conti, 1999). Mumford and Hunter (2005) found that motivation affects the link between innovation and creativity. Companies need employees' motivation and ability to create new products and improve existing processes (Scarbrough, 2003). Thus transformational leadership moderates the relationship between corporate entrepreneurship environment and innovation by affecting the employees' motivation to innovate (Zampetakis et al., 2009).

There are many empirical studies stressing the key roles of middle and operational managers in defining and implementing new strategies (Burgelman, 1994; Noda and Bower, 1996). Researchers note that in order to obtain the full potential of corporate entrepreneurship, it should be managed appropriately by transformational leaders (Wales, Gupta and Moussa, 2011). It is stated that companies can be unsuccessful in transforming entrepreneurial orientation into innovation performance if the company's leadership behaviors are not properly aligned (Gupta, MacMillan and Surie, 2004). One of the most crucial gaps in the literature concerning corporate entrepreneurship and innovative results is the lack of studies on unit level transformational managers' effect on the relationship between corporate entrepreneurship and innovative outcomes through conscious leadership effort (Hornsby et al., 2009; Chang et al., 2017). Because of the autonomy given to operational and unit level managers in CE, their leadership style becomes highly important. They can influence organizational characteristics like culture, structure, rewards/reinforcements and strategy (Hornsby et al., 2009). Transformational managers create interest in corporate entrepreneurship and affect their followers' skills to perform the activities when they work collaboratively (Cheung and Wong, 2011). Transformational leaders at the unit level are more effective because they are as critical as middle managers in implementing company strategies from up to bottom (Hales, 2005). Moreover, unit level managers have unique knowledge and perspective in adapting the strategy to operational and environmental needs or opportunities (De Church et al., 2010).

In light of the ideas above, this study investigates if the CE - innovation relationship is moderated by the transformational leadership of the chiefs. We propose that transformational leadership positively affects the relationship between corporate entrepreneurship environment and innovation. Thus, all the relations hypothesized above are expected to be moderated by transformational leadership.

H6a: The relationship between TMS and innovation outcomes is moderated by the degree of transformational leadership.

H6b: The relationship between WD and innovation outcomes is moderated by the degree of transformational leadership.

H6c: The relationship between R/R and innovation outcomes is moderated by the degree of transformational leadership.

H6d: The relationship between TA and innovation outcomes is moderated by the degree of transformational leadership.

H6e: The relationship between OB and innovation outcomes is moderated by the degree of transformational leadership.

CHAPTER 4

4. RESULTS

All statistical analyses were conducted with the IBM SPSS Statistics 22 software. In the first section of this chapter, descriptive statistics and tests for normality are shown. In the second section, the confirmatory factor analysis (CFA) results are given. Correlation analysis is conducted to determine the existence of relationships between variables and their direction in the third section. In the following section, Ordinary Least Squares (OLS) regression analysis is done to test the hypotheses. Next, moderation analysis is conducted for testing the transformational leadership as a moderator on the relationship between CE and innovation outcomes. In the sixth and last section, the hypotheses testing results are presented.

4.1. Data Screening and Cleaning

The procedures described by Tabachnick and Fidell (2001) were followed while screening the data. The data was examined for missing values. There was no missing data. Univariate and multivariate outliers, normality, linearity, and multicollinearity were checked. In order to determine univariate outliers, Z scores are detected and the ones out of ± 3.29 critical value are deleted, leaving 135 participants. After that, multivariate outliers are examined by Mahalanobis distance values. No participants were detected as multivariate outliers.

The data was checked for normality in terms of skewness and kurtosis. Skewness deals with the symmetry of the distribution; a skewed variable is a variable whose mean is not in the center of the distribution (Tabachnick & Fidell, 2013). Kurtosis has to do with the peakedness of the distribution; a distribution with kurtosis is either too peaked (with short, thick tails) or too flat (with long, thin tails) (Tabachnick & Fidell, 2013). Items checked for the skewness values greater/less than ± 2 and kurtosis values greater/less than ± 7 (Curran et al., 1996). All data gathered by the questionnaire satisfy the normality assumptions. Only income per capita value,

which is financial gain of innovation of department per employee, is not within skewness and kurtosis limits, which is expected for innovation gains of different departments because as it is widely acknowledged that the innovations' financial impacts have significant differences between radical and incremental innovations (Christensen, 2000). Income per capita is calculated as (financial gain of innovation at department "A"/ number of employees working at department "A"). After normality checks, the data was examined for linearity testing and multicollinearity. The maximum variation inflation factor was 6.305, which is smaller than 10, so the results show that multicollinearity does not pose a serious problem (Barringer and Bluedorn, 1999; Baron and Tang, 2011).

Common method variance can result in incorrect conclusions about the variance proportion accounted for in a criterion variable and alter conclusions about the nomological and/or discriminant validity of a scale (Podsakoff et al., 2012). One of the most widely used techniques that has been used by researchers to address the issue of common method variance is Harman's one-factor (or single-factor) test (Podsakoff, MacKenzie, Lee ve Podsakoff, 2003). The basic assumption of this technique is that if a substantial amount of common method variance is present, either (a) a single factor will emerge from the factor analysis or (b) one general factor will account for the majority of the covariance among the measures (Podsakoff et al., 2003).

Even though procedural remedy (time lap) to avoid common method bias was employed (Podsakoff et al., 2003) in this study, Harman's Single Factor Test was nonetheless conducted to ensure common method variance is not a problem for our data. Time lap means that the questionnaire formi, which is 2 parts, given to participants by two weeks time lap. At first meeting part 1 is filled by participant and after 2 weeks, part 2 is filled by participant. Time lap is procedural remedy for common method bias (Podsakoff et al., 2003). In order to check this potential threat to validity, a single dimension reduction test was conducted. Harman's one-factor test yielded a factor that extracted only 20.29% of the variance. This test result indicated that the majority of variance was not explained by a single factor.

Therefore, we can conclude that common method variance does not create a significant bias in our data.

4.2. Confirmatory Factor Analysis (CFA)

The responses to CEAI which includes the dimensions of TMS, TA, OB, R/R, WD, and the MLQ 5X short form scale to measure transformational leadership were factor analyzed prior to forming composite variables from the scale items.

Social science researchers need measures with good reliability and validity that are appropriate for the use of across diverse populations. The development of psychometrically sound measures is an expensive and time consuming process, and CFA is an important step in the development process (Harrington, 2009). CFA was conducted on the research data via SPSS 22.

Principal Axis Factoring (PAF) with varimax rotation was conducted on the 48-item CEAI scale using data from 135 participants. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (.828) and Bartlett's Test of Sphericity (χ^2 (990) = 2947.93, $p < .001$) indicated that the data could be factor analyzed.

The results revealed an initial twelve-factor solution with eigenvalues over one and these factors explained 65.52 % of the total variance (with eigenvalues 11.874, 3.411, 2.478, 2.075, 1.908, 1.725). Based on these analyses, the current data was forced into the three factor structure instead of the theoretically-expected five-factor structure because there is a sharp decrease for the eigenvalues after the third factor. The resulting factors explained 35.2 % of the total variance. Factor 1 explains 24.98%, factor 2 6.14%, and factor 3 4.12% of the total variance. A scree plot also indicated the existence of three factors. The examination of the pattern matrix showed that Factor 1, Factor 2, and Factor 3 corresponded to perceived management support, perceived organizational structure, and perceived resource availability, respectively.

Three items³, item 21 originally from “organizational boundaries” scale, 24 and 36, originally from work discretion scale, are deleted after factor analysis because there was no factor loading on those items.

CEAI (Kuratko et al., 1990) is not totally valid and reliable with its five factor structure in the Turkish defense and aviation industry sample of the current study. Though the existence of three factors is indicated by the original authors and a three-factor model was identified in the current study, the factors had to be re-named due to the loss of certain items. New names were assigned to this newly defined three-factor structure that are consistent with the CE literature. The three factors names used by Kuratko et al. (1990); management support, organizational structure and resource availability, were found to be the most important antecedents of corporate entrepreneurial environment. The instability of the organizational boundaries construct was somewhat consistent with previous efforts where the CEAI had been applied.⁴

In this research all original top management support items load on the management support factor as expected. Moreover, item 12 (“This organization provides the chance to be creative and try my own methods of doing the job”), item 19 (“This organization provides freedom to use my own judgment”) and item 28 (“This organization provides the chance to do something that makes use of my abilities”) load onto the management support factor although they are work discretion factor

³ Item 21: “In the past three months, I have always followed standard operating procedures or practices to do my major tasks”, Item 24: “I seldom have to follow the same work methods or steps for doing my major tasks from day to day”, Item 36: “Harsh criticism and punishment result from mistakes made on the job”

⁴ Adonisi (2003) explored the construct validity of the CEAI, finding that the organizational boundaries factor did not emerge as intended. Instead, a related factor emerged that Adonisi named as work improvement. In a subsequent use of the CEAI, Brizek (2003) also suggested concerns with the organizational boundaries dimension. Vizitiu, Agapie, Cristache, Nastase, Craciun and Molanesc (2018) indicate that the five-factor model of CEAI was not valid and reliable for the Romanian R&D industry and they reduced the set of variables from 48 down to 39. They ran the analysis on the reduced set and discarded the three factors (and corresponding items) that were below the minimal acceptance threshold of 0.5(c.f., George and Mallery, 2013). The set of variables were eventually brought down to 21. A final run was performed on the set of 21 items, setting the number of factors to five and modifying the names of the resulting factors.

items in the original CEAI. In the defense and aviation industry, this kind of autonomy can be given only by top management and this may be the reason that three work discretion/autonomy measurement items are perceived as management support items.

Similarly, item 26 (“My manager would tell his/her boss if my work was outstanding”), item 32 (“My supervisor will increase my job responsibilities if I am performing well in my job”) and item 38 (“My supervisor will give me special recognition if my work performance is especially good”) load onto the management support factor although they are rewards/reinforcement factor items in the original CEAI. The term “manager” or “supervisor” may be perceived as top managers and this may be the reason that those three rewards measurement items are perceived as management support items.

Additionally, item 10 (“There are many written rules and procedures that exist for doing my major tasks”) and item 17 (“My job description clearly specifies the standards of performance on which my job is evaluated”) load onto the management support factor although they are organizational boundaries items in the original CEAI. Those procedures and descriptions are determined by top management that is why those two organizational boundaries measurement items perceived as management support items.

Work discretion/autonomy and organizational boundaries constitute the new organizational structure dimension. Items 2, 6, 8, 16 and 44 are originally work discretion/autonomy items, and items 4, 30 and 42 are originally organizational boundaries items. Additionally, item 9 (“My manager helps me get my work done by removing obstacles”), item 14 (“There is a lot of challenge in my job”), and item 41 (“The rewards I receive are dependent upon my work on the job”) load onto the organizational structure factor although they are rewards/reinforcement factor items in the original CEAI. Moreover, item 7 (“I feel that I am always working with time constraints on my job”) and item 35 (“My job is structured so that I have very little

time to think about wider organizational problems”) load onto the organizational structure factor although they are time availability items in the original CEAI.

Lastly, the resource availability factor consists of items 3, 23, 40, and 48, which are items of the time availability scale in the original CEAI. Also item 46 (“There is little uncertainty in my job”) loads onto the resource availability scale.

,4.3. Descriptive Statistics

The descriptive statistics are given in Table 3. In the sample, 9.6% of the participants are female and 90.4% are male. Regarding age, 71.1%.of the participants are in the age range of 30-40 The following most common age range is 40-50 with 16.3%; 11.1% of the respondents are in the 50-60 age range,and 1.5% are in the 22-29 age range.

Table 3 - Descriptive Statistics

Statistics					
	Income per capita	TMS	OS	RA	TL
Mean	55.2111	3.3413	3.3333	3.1141	4.1233
Std. Deviation	96.97217	.60169	.38254	.60473	.41671
Variance	9403.602	.362	.146	.366	.174
Minimum	.03	1.89	2.38	1.00	2.80
Maximum	597.50	4.78	4.31	4.60	5.00

MS: Management Support, OS: Organizational Support, IPC: Innovation per capita
RA: Resource Availability, TL: Transformational Leadership

77% of the respondents have a Bachelor’s degree and 23% have a Master’s degree. Regarding company experience, 42.2% have 6-10 years’ experience, 25.9% have 11-15 years’ experience, 16.3% have 1-5 years’ experience, and 15.6% have more than 15 years company experience.

4.4. Correlation Analysis

The results of the correlation analysis are given in Table 4. Most of the relationships between the variables are in a positive and moderate level. There was no significant correlation observed between the dependent variable, “Innovation Per Capita (IPC)”, and independent variables. Reliability analysis is conducted for each measure in order to determine whether the items are consistent within each scale. Cronbach’s Alpha values can be seen in Table 4. All values are above .50, which means the scales are reliable.

Table 4 - Correlation Matrix (N=135)

Variables	α	m	1	2	3	4	5
1- MS	.927	3.3	1				
2- OS	.538	3.3	.434**	1			
3- RA	.503	3.1	.464**	.372**	1		
4- TL	.909	4.1	.430**	.300**	.262	1	
5- IPC		55.2	-.016	.114	.002	.09	1

4.5. Regression Analysis

To test the hypotheses, Ordinary Least Squares (OLS) regression analysis was conducted. Table 5 shows the regression model’s summary statistics where the dependent variable (DV) is Innovation Per Capita and the independent variables (IV) are Management Support, Organizational Structure, and Resource Availability.

The R^2 value of the first regression model is 0.019, which means that only 1.9% change of the DV is explained by the IVs in the model. In Table 5, the regression model results show the IVs that have no significant effects on Innovation per capita and the model is not significant.

Table 5 - OLS Regression Analysis Results (DV: Innovation Per Capita)

Model	Independent Variables	R2	SE	β	t	p
1		.019				.478
	(Constant)		76.394		-.323	.747
	Management Support		16.608	-.073	-.711	.479
	Organizational Structure		24.935	.154	1.564	.120
	Resource Availability		16.039	-.021	-.213	.831

4.6. Moderation Analysis

In this study, we also test for the moderation effect of transformational leadership on the relationship between corporate entrepreneurship and innovation per capita. Although a significant relationship was not found between innovation per capita and corporate entrepreneurial dimensions, a moderation analysis done on the relationships between the dependent and independent variables (Hayes, 2018).

For the moderation analysis, the SPSS extension PROCESS (v.3.2.) was used (Hayes, 2018). In order to avoid potentially problematic high multicollinearity with the interaction term, the variables were centered and an interaction term between the DV and IV was created (Aiken & West, 1991). The output from PROCESS can be found in Table 6. When management support, organizational structure, and resource availability are taken as independent variables in three separate models, none of them were significant ($p > 0.05$). The result of this study illustrates that there is no statistically significant moderation effect of transformational leadership on the relationship between corporate entrepreneurial dimensions and innovation outcomes.

Table 6 - Moderation Analysis Results (Moderator: TL)

Mod el ^a	Independent Variables	R ²	SE	Coeff.	t	p	LLCI	ULCI
1		.0141	9482.8			.599		
	Management Support		116.26	-76.12	-.64	.514	- 306.1	153.27
	Transformation al Leadership		99.31	-27.22	-.27	.784	- 223.7	169.24
	Interaction Term (X * W)		28.02	15.87	.56	.572	-39.5	71.31
2		.0188	9437.7			.475		
	Organizational Structure		227.35	153.53	.67	.5	- 296.2	603.29
	Transformation al Leadership		181.63	117.27	.64	.519	- 242.0	476.59
	Interaction Term (X * W)		53.82	-30.75	-.57	.568	- 137.2	75.72
3		0.0089	9533.7			0.76		
	Resource Availability		120.98	-28.34	-.23	.815	- 267.7	210.99
	Transformation al Leadership		96.33	2.98	.03	.975	- 187.6	193.55
	Interaction Term (X * W)		28.70	5.89	.20	0.838	-50.9	62.67

a. Dependent Variable: Innovation Per Capita

4.7. Hypothesis Results

According to the regression results (Table 7), none of the hypothesis are supported because the initial regression model was not significant ($R^2 = 0.019$, $p = 0.478$). According to the moderation analysis, as shown in Table 6, when management support, organizational structure, and resource availability are taken as independent variables in three separate models, neither was significant, so none of the hypotheses were supported.

Table 7 - Hypothesis Results

Hypotheses	Results
H1: “There is a significant relationship between management support and innovation outcomes.”	Not Supported
H2: “There is a significant relationship between organizational structure and innovation outcomes.”	Not Supported
H3: “There is a significant relationship between resource availability and innovation outcomes.”	Not Supported
H4: “The relationship between management support and innovation outcomes is moderated by the degree of transformational leadership.”	Not Supported
H5: “The relationship between organizational structure and innovation outcomes is moderated by the degree of transformational leadership.”	Not Supported
H6: “The relationship between resource availability and innovation outcomes is moderated by the degree of transformational leadership.”	Not Supported

CHAPTER 5

5. DISCUSSION AND CONCLUSIONS

5.1. Introduction

In this discussion and conclusion chapter, the results of this study will be discussed with respect to our research questions. Next, the present study's contributions to the literature and limitations will be interpreted and future research recommendations will be given.

5.2. First Research Question

The first research problem was asking which dimensions of the corporate entrepreneurial environment have a significant relationship with innovation in the Company X from Turkish defense and aviation industry. First of all, conducted survey has a three factor structure instead of the theoretically-expected five-factor structure. The examination of the pattern matrix showed that Factor 1, Factor 2, and Factor 3 corresponded to perceived management support, perceived organizational structure, and perceived resource availability, respectively. Therefore, in this new model corporate entrepreneurship dimensions consist of those three factors. The present study could not find any significant relationship between corporate entrepreneurial dimensions and innovation outcomes which was measured by innovation income per capita.

5.3. Second Research Question

The first research problem was asking if the relationship between the dimensions of the corporate entrepreneurial environment and innovation is moderated by the transformational leadership of the unit level manager in the Company X from Turkish defense and aviation industry. The present study could not find any significant moderating effect of transformational leadership on the relationship between corporate entrepreneurial dimensions and innovation outcomes.

5.4. Contributions of the Present Study

Although unit level managers work with employees to fashion corporate entrepreneurial activities through which the company's main proficiencies may be used for the exploits of opportunities (Hornsby et al., 2009), empirical research regarding models including transformational leadership which affect corporate entrepreneurial activities within companies is mainly lacking to date (Ling et al., 2008; Chang et al., 2017). The aim of this study was to expand the understanding of leadership by making clear how transformational leadership encourages employees at the unit level to promote the corporate entrepreneurial activities and innovation within the company.

The focus of this research has been on the relationship between corporate entrepreneurial dimensions, i.e., TMS, R/R, WD, TA, and OB, and innovation performance, with the moderating effect of transformational leadership. According to the findings of this study, none of the corporate entrepreneurship dimensions appear to affect the innovation outcomes of Company X. Furthermore, transformational leadership has no moderator effect on these relationships.

Our findings complement the research on corporate entrepreneurship by Hornsby et al. (2009), and the role of transformational leadership on the relationship between corporate entrepreneurship and innovation by Engelen et al. (2012) and Chang et al. (2017). With this study, the need for measuring corporate entrepreneurship and innovation outcomes, and also the moderating effect of transformational leadership on this relationship is apparent in the context of Turkish defense and aerospace firms at the unit level. Most of the research on corporate entrepreneurship is done in the US so it is important to study corporate entrepreneurship in a Turkish company as it allows us to compare corporate entrepreneurship in the two contexts. However, this research showed that the corporate entrepreneurship assessment instrument (CEAI) needs to be revised, as pointed out by Adonisi (2003), whose results are very similar to our study. Due to the problems regarding the validation of the five-factor structure of CEAI, recent research suggests that there is room for instrument improvement (e.g., Van Wyk and Adonisi, 2011; Adonisi, 2003; Brizek, 2003; Holt, Rutherford,

and Clohessy, 2007). Participants from different social and cultural environments show different behaviors affecting their response to the questionnaires. Therefore, limited cross-cultural portability of psychometric instruments create problems with regard to the validation of psychometric instruments across cultures (Vizitiu et al., 2018; Wyck and Adonisi, 2011).

There is a long debate regarding work discretion/autonomy and its effects on innovation (e.g., Goadale et al., 2011; Urban and Wood, 2017; La Nafie, 2014; Hornsby et al., 2009). Work discretion/autonomy represents the organization's tolerance to failure, granting more power of authority to the followers (Kuratko, Morris & Covin, 2011) and a flexible operational environment (Adonisi and Van Wyk, 2012). Work discretion and autonomy increase job satisfaction and commitment to the company, and ultimately, the motivation for innovation in different sectors (Cowden, Cummings, and Profetto-Mcgrath, 2011). Rutherford and Holt (2007) find that work discretion/autonomy given to employees may generate innovation in companies. However, in this study, a significant relationship is not found between work discretion/autonomy and innovation. Katsu Shimizu (2012) mentions the risks of corporate entrepreneurship due to autonomy. Autonomy can trigger asymmetric information between upper and lower management (Kuratko et al., 2004). Moreover, De Jong and Den Hartog (2007) report that both very high and low autonomy decreases creativity and innovation.

In this study, the moderating effect of transformational leadership is also investigated but a significant effect has not been found on the relationship between corporate entrepreneurial dimensions and innovation outcomes at the unit level. In this research, transformational leadership only at the unit level was investigated. Although the unit level managers perceive an autonomous environment, they may not see the link between their environment and their own actions. This problem is coined as the "two cultures problem" by Garvin and Leveque (2006). The transformational leadership of the unit level manager may not work due to the domination of existing culture of company. Corporate entrepreneurship needs a melding of cultures and corporate entrepreneurial strategy should be unified through

all levels of management which can be succeeded by upper management (Morris et al., 2006).

Another independent variable of present study's model is rewards and reinforcements. A significant relationship is not found between rewards/reinforcements and innovation outcomes. This finding is inconsistent with Hornsby et al. (2009), Hough and Scheepers (2008), and La Nafie et al. (2014). Motivational tools like reward/reinforcement systems are key drivers of corporate entrepreneurship which companies use to encourage their employees' entrepreneurial efforts and motivate them to accept responsibilities and particular roles (Bhardwaj, Sushil, Momaya, 2011). Companies use systems to reward employees based on their success and entrepreneurial activities (Hornsby et al., 2002) because reward and reinforcement systems keep employees motivated and increase job satisfaction.

The effect of increasing rewards will become steady after some point, but it is thought that companies aiming for major changes or gains within the scope of innovation activities should consider the minimum requirements for rewards and reinforcements. Hornsby et al. (2002) mention that rewards/reinforcements systems should be designed by considering aims, feedback, responsibilities, and incentives, which directly depend on results. Otherwise, the rewards/reinforcement system may have no or negative effect on innovation performance because unfair rewards decrease employees' motivation (Simon and Roberson, 2003). In this study, unit level managers ("chiefs") evaluated their own transformational leadership traits, so self-reporting can be the reason for the insignificant results. In the future, data on the managers' leadership style may be collected from their employees.

Time availability refers to the time that companies have set aside for innovation activities as a resource. In this study, no relationship was found between time availability and innovation performance. This result is consistent with Hough and Scheepers (2008), Hornsby et al. (2009), and La Nafie et al. (2014). Some research mentions that entrepreneurial activities require time availability (Sykes & Block, 1989; Slevin and Covin, 1997). On the other hand, if employees are given too much

slack time, they may lose their focus on their official job description and this may cause a waste for the company (Nohria and Gulati, 1996). Thus, companies should balance the workload of employees, avoid strict time constraints, and allow employees to generate new ideas with other colleagues on long term problem solving (Hough and Scheepers, 2008).

In the study, no significant effect of top management support on innovation was observed for Company X. However, top management support is one of the important factors affecting innovation in other studies in the literature (Cooper and Kleinschmidt, 2007; Kachouie and Sedghadeli, 2015). Top management support promotes entrepreneurial behaviors and overcomes structural barriers to corporate entrepreneurship (Ireland et al., 2006).

Moreover, top management support is needed to develop an entrepreneurial strategy and to promote entrepreneurial behaviors among employees. In light of the data obtained in this study, it can be stated that although it is known that top management support exists, it may not be perceived by employees as being towards innovation activities. This may be the case since managers focus only on the development process of new products as required by the sector. The demand for new products in the defense and aerospace sector comes from the government and then the project starts with the determination of customer requests and the establishment of the project mission. The department managers who participated in the survey start the project with system engineering according to customer requests and then work on the conceptual design, design iterations, prototype, and test stages. After the prototype, the project is transferred to the manufacturing groups and mass production continues. In this process, the top management's role is to negotiate with the government and monitor the process. The government asks defense companies to manufacture the product according to its criteria. That is why top management support is not considered by employees as a critical factor for innovation. In the future, increased number of defense and aviation companies will create a competitive environment, as in developed countries and top management support will be supplied by the upper

management of company instead of the government. Else, same survey can be conducted in another sector which is competitive.

In this study, no relationship was found between organizational boundaries and innovation performance. This result is consistent with Hornsby et al. (2009) and Hough and Scheepers (2008). This finding weakens the theory that more bendable organizational boundaries are more beneficial in promoting innovation because they increase information transfer (Miller et al., 2014). On the contrary, Kuratko et al. (2014) state that innovative results appear in the case of innovation is calculated and controlled process. In parallel, researchers clarify that innovative outcomes are mostly achieved by keeping uncertainty at controllable levels by ensuring the utilization of innovation enabling resources.

Dumez and Jeunemaitre (2010) mention that organizational structure regulate the flows between internal and external environment, and also between departments within company, and make these flows apparent, hence modifying boundaries means changing the departments' capabilities. In the defense and aviation sector, there many regulative bodies, so governmental and legal agencies determine organizational boundaries and procedures, resulting in processes which cannot be changed by the company itself. Such regulative authorities also conduct audits to check boundaries and procedures. Moreover, confidentiality agreements do not let information flow other than what was agreed on officially. In the defense and aviation companies, employees of the same company may not be permitted to enter other projects' working zones. Furthermore, the information security department of Company X periodically conducts audits to check for documents left which are reachable by anybody. This means that there is a very small difference between information flow and information leakage, which is legally forbidden. To sum up, due to security and confidentiality regulations, organizational structure cannot be flexible in the defense and aviation sector, which is perhaps one reason why flexible organizational structure increase innovation in the literature but it is not found as a critical factor in this research.

No significant moderation effect of transformational leadership on any of the relations between CE dimensions and innovation outcomes has been observed at the unit level for Company X. Although scholars have suggested that transformational leaders can influence unit level followers' ability and performance of their job (e.g., Shamir et al., 1993), very few studies have examined this relationship at the lower levels of organizations such as units (De Church et al., 2010). Chang, Chang, and Chen (2017) show that unit-level transformational leaders had a positive influence on their followers' effectiveness in corporate entrepreneurship by advancing unit level followers' collective abilities. In this study, unit level transformational leadership was evaluated but no significant effect was found. As it is mentioned by Phan et al. (2009), CE and innovation needs to be investigated for different management levels. In particular, Hornsby et al. (2009) found that the relationship between the antecedents of CE and innovation was more powerful for upper management in comparison with lower management. Although not explicitly stated, Kelley and Lee (2010) also raise the issue of multiple levels of management. Their study draws on interviews with employees at different levels of management on the subject of networks. The authors suggest that an investigation may be conducted for all levels of management separately for innovation-based CE to be effective. Therefore, the level of management may be the reason behind not finding any moderation effect of transformational leadership.

Although the studies on corporate entrepreneurship have expanded in recent decades, it is thought that the current study has contributed to the literature since there has not been a complete consensus in terms of the main dimensions of the subject (Ireland et al., 2009).

5.5. Limitations of the Study

The study has some limitations, the main one being that research is done at one company, which may have affected the significance of the results. This research can be done in other aviation and defense companies in the future. Another constraint is the study has a cross-sectional design that exists in many empirical studies. Future

research can utilize a longitudinal research design where the data is collected across different periods as innovation efforts usually show results with a time lag. Moreover, the data gathering process which took place in the form of self-reporting by the participants can bias the results. Therefore, in future research, it may be meaningful for more than one group of respondent to be included in the study. Finally, the innovation record system of Company X has some limitations.

In this study, the dependent variable is innovation per capita for each department of Company X. However, the innovation record system cannot calculate financial gains for some types of innovations. When calculating the cost of poor quality, the quality assurance reports (QARs) written on the specified situation before the application of proposal are taken into account. If such a quality assurance report is not available, a profit calculation of eliminating poor quality is not carried out. In those cases, innovation financial gain is calculated as zero. Moreover, the financial gains of innovations contributing to occupational health and safety, environment, security, quality etc. cannot be calculated by this innovation recording system. Those incalculable financial gains may be the reason of not finding significant relationships to support any of our hypotheses. Therefore, in future research, it may be meaningful for using a more accurate innovation measure which can calculate the financial gains of all types of innovation in the study.

Another limitation may be the conducting survey in its original language, in English, to Turkish people. All of the participants are recruited by English exam score which is minimum IELTS 6.5. However, there is a possibility that misunderstandings may be happened due to participating in this survey in English, which is not participants' native language. Despite participants' English exam score, there can be some misunderstanding which cause that a significant relationship could not found between corporate entrepreneurial factors and innovation. Also transformational leadership is measured by scale in English and this may be the reason that a significant moderation effect of transformational leadership on the relationship between corporate entrepreneurial factors and innovation outcomes is not found by this research. Frequently, in most of data translation there is a simple statement that "data

are translated from language A to language B by a researcher or translator(s)”, and all citations appear to be nice and tidy. The dilemmas and problems of the process remain in some sort of “black box”. Cross cultural investigation is a both sides cutting edge knife and yet there is no clear answer regarding investigation in original language or translation cause less meaning loss. Therefore, conducting survey in its original language may cause some meaning loss and this can be the reason that no significant relationship is found in this survey.



CHAPTER 6

6. POLICY IMPLICATIONS

This chapter focuses on the policy implications based on this study. With this study, it is possible to reflect the functioning of corporate entrepreneurship; an area which was under-researched if not ignored in Turkey in academic studies despite its increasing contribution to economic growth and policy attraction towards it. Although the number of scientific studies in developed western economies about corporate entrepreneurship which provide significant added value to the country's economy at the micro and macro level shows a significant increase, these concepts are not known enough in developing countries such as Turkey and therefore not discussed. By exploring the effects of corporate entrepreneurial factors on innovation, this study showed the urgent need for a corporate entrepreneurship assessment instrument for the Turkish defense and aviation sector to increase innovation. Moreover, the need for a precise innovation measurement system to evaluate the innovations and their different types of gains is noted by this study. These two important needs have several implications for entrepreneurs, managers, academicians, and for policymakers.

Managers in enterprises whose ability to take advantage of opportunities are weak, want to adapt to the external environment in order to regain the entrepreneurial spirit of the enterprise, and even want to reach new markets through innovation rather than following competitors and want to enter into a cycle of sustainable efficiency and efficiency (Bulut, Fis, Aktan and Yilmaz, 2008). On the contrary, successful executives seek a strategic perspective in order to gain organizational flexibility and innovate in identifying, evaluating and utilizing opportunities in the environment (Barringer and Bluedorn, 1999; Antoncic and Hisrich, 2001). The goals of managers who want to adopt corporate entrepreneurship are making new initiatives, creating new markets, acquiring new core competencies, and gaining competitive advantage based on innovation (Dess and Lumpkin, 2005; Kanter, 2006). In this way,

entrepreneurial managers will be able to achieve growth by strengthening the financial performance and equity of their institutions, while increasing their job satisfaction and motivation through the entrepreneurial environment they will provide to their employees (Covin and Slevin, 1991; Zahra, Neubaum and Huse, 2000; Hayton 2005). From this perspective, corporate entrepreneurship, with its impact on both financial and human resources performance, also makes a unique contribution to the long-term competitive advantage and continuity of the organization (Wiklund, 1999).

In this study, Company X has access to global markets and a wide range of players from different cultures and countries. Yet it is bounded by local conditions including the education system, networks, and financial sector. On the other hand, most public policies are developed at the national level (Edquist, 2005). In other words, national conditions still play a role in innovative activity.

Innovation is not only dependent on the capacity of company, but also on the corporate entrepreneurial environment of the companies and the technological or economical conditions of the country. The economic strength of countries depends on the competitiveness of the companies operating in that country. Therefore, countries implement policies to support their companies and try to help them increase their competitiveness. Countries establish institutions to support the innovation activities of companies, prepare laws, and create incentives to encourage innovation because innovation is the best way to increase the performance and competitiveness of companies. Today innovation has become an important part of economic growth in all countries (Kitanovic, 2007). Dynamism and economic success of countries depend on their achievement in innovation and the number of educated and industry-specific people (Nelson, 2002). The importance of innovation is valid for Turkey as it applies to all countries policies and that is why innovation policy which determines legacy, incentives. and institutions is very important.

The literature mentions that corporate entrepreneurial outputs such as deploying new technologies, innovation, and creation of new businesses depend on environmental factors (Holmes et al., 2016). Government and its policy are one of the most influential players that affect companies' access to resources (Doh, Lawton, and Rajwani, 2012). Literature has shown that policies affect several important outcomes such as venture formation, foreign direct investment (Globerman and Shapiro, 2003), and company structure (Hoskisson, Cannella, Tihanyi, and Faraci, 2004). In addition, these policies affect corporate entrepreneurship by the flow of resources and returns on investments in innovation. In this way, policies affect the implementation of CE strategies, nature of interfirm networks, knowledge, innovation, and economic development.

Government policies encourage companies to act entrepreneurially (Lazzarini, 2015). Those policies can shape the incentives which are necessary for companies to act entrepreneurially (McMullen, Bagby, and Palich, 2008). Governments allocate resources and enforce the technology policies to support and constitute the innovation infrastructure (Etzkowitz and Leydesdorff, 2000). In particular, technology policies form the capabilities, rewards, incentives available for companies, employees, and universities to participate in knowledge development and innovation in the country. In this way, government policies regulate the investments necessary for innovation and strategic change. In parallel to the technological changes and global competition, the need for the development and combination of knowledge from diverse sources is very important (Danis, Chiaburu, and Lyles, 2010). Companies which cannot innovate are less likely to survive over time. Therefore, technology policies of governments are vital, as they affect the incentives and means to catch opportunities for innovation.

In this study, policy implications are based on the findings of this research. Although a significant relationship is not found between corporate entrepreneurial factors and innovation outcomes, the study shows us that there is a big need to measure corporate entrepreneurial dimensions and innovation outcomes adequately in order to

develop a policy framework targeting the aviation and defense industry as a whole in Turkey. With this scope in mind, this study defines mainly two policy aims.

These are:

- (i) Developing a portable corporate entrepreneurship assessment instrument for the Turkish defense and aviation industry*
- (ii) Designing an accurate innovation measurement system to calculate financial gains of all types of innovation for defense and aviation companies.*

Only after the constitution of a context-appropriate corporate entrepreneurship assessment instrument and an accurate innovation measurement system to calculate financial gains of all types of innovation, it will be possible to investigate the means of increasing innovation by corporate entrepreneurship.

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APPENDICES

A. QUESTIONNAIRE

This section contains items regarding your personal characteristics. This information will be used to describe the group of people that completed this questionnaire.

(TMS: Top Management Support; WD: Work Discretion, Autonomy; R: Rewards/Reinforcement; TA: Time Availability, OB: Organizational Boundaries; TL: Transformational Leadership)

1. What is your age range? 22-29 / 30-40 / 41-50 / 51-60 years
2. What is your gender? Male/Female
3. What is your educational background? High School/University/Master Degree/Phd
4. How long have you been working in this company? _____ Years

Please DO NOT PUT YOUR NAME on this questionnaire.

Feel free to make comments on the back of this page.

Thank you for your participation!

PART 1: Please indicate to what extent you agree/disagree with the following statements. (1 = strongly disagree to 5 = strongly agree, 0= “do not know”)

		Don't know	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Money is often available to get new project ideas off the ground.						
2	I feel that I am my own boss and do not have to double check all of my decisions.						
3	I have just the right amount of time and work load to do everything well.						
4	On my job I have no doubt of what is expected of me.						
5	My organization is quick to use improved work methods.						
6	It is basically my own responsibility to decide how my job gets done.						
7	I feel that I am always working with time constraints on my job.						
8	I have much autonomy on my job and am left on my own to do my own work.						
9	My manager helps me get my work done by removing obstacles.						
10	There are many written rules and procedures that exist for doing my major tasks.						
11	Individuals with successful innovative projects receive additional reward and compensation for their ideas and efforts beyond the standard reward system.						
12	This organization provides the chance to be creative and try my own methods of doing the job.						

		Don't know	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
13	Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.						
14	There is a lot of challenge in my job.						
15	Upper management is aware and very receptive to my ideas and suggestions.						
16	I almost always get to decide what I do on my job.						
17	My job description clearly specifies the standards of performance on which my job is evaluated.						
18	There is a considerable desire among people in the organization for generating new ideas without regard to crossing departmental or functional boundaries.						
19	This organization provides freedom to use my own judgement.						
20	The term "risk taker" is considered a positive attribute for people in my work area.						
21	In the past three months, I have always followed standard operating procedures or practices to do my major tasks.						
22	There are several options within the organization for individuals to get financial support for their innovative projects and ideas.						
23	I always seem to have plenty of time to get everything done.						
24	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.						
25	In my organization, developing one's own ideas is encouraged for the improvement of the organization.						

		Don't know	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
26	My manager would tell his/her boss if my work was outstanding.						
27	Many top managers have been known for their experience with the innovative process.						
28	This organization provides the chance to do something that makes use of my abilities.						
29	My organization is quick to use improved work methods that are developed by workers.						
30	During the past year, my immediate supervisor discussed my work performance on which my job is evaluated.						
31	Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not.						
32	My supervisor will increase my job responsibilities if I am performing well in my job.						
33	This organization supports many small and experimental projects realizing that some will undoubtedly fail.						
34	The "doers" are allowed to make decisions on projects without going through elaborate justification and approval processes.						
35	My job is structured so that I have very little time to think about wider organizational problems.						
36	Harsh criticism and punishment result from mistakes made on the job.						
37	People are encouraged to talk to workers in other departments of this organization about ideas for new projects.						
38	My supervisor will give me special recognition if my work performance is especially good.						

PART 2: Please indicate to what extent you agree/disagree with the following statements. (1 = strongly disagree to 5 = strongly agree, 0= “do not know”)

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't know
39	Promotion usually follows the development of new and innovative ideas.						
40	During the past three months, my work load was too heavy to spend time on developing new ideas.						
41	The rewards I receive are dependent upon my work on the job.						
42	I clearly know what level of work performance is expected from me in terms of amount, quality, and timeliness of output.						
43	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.						
44	I have the freedom to decide what I do on my job.						
45	People are often encouraged to take calculated risks with new ideas around here.						
46	There is little uncertainty in my job.						
47	A worker with a good idea is often given free time to develop that idea.						
48	My co-workers and I always find time for long-term problem solving.						
49	I instill pride in being associated with me.						
50	I go beyond self-interest for the good of the group.						
51	I act in ways that builds my team's respect.						
52	I display a sense of power and confidence.						
53	I talk about my most important values.						

		Don't know	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
54	I model ethical standards.						
55	I consider the moral and ethical consequences of my team members' decisions.						
56	I emphasize the importance of having a collective sense of mission.						
57	I talk optimistically about the future.						
58	I express confidence that goals will be achieved.						
59	I talk enthusiastically about what needs to be accomplished.						
60	I arouse awareness about important issues.						
61	I re-examine critical assumptions to question whether they are appropriate.						
62	I seek differing perspectives when solving problems.						
63	I suggest new ways of looking at how to complete assignments.						
64	I get my team members to look at problems from many different angles.						
65	I give my team members individualized attention.						
66	I help my team members to develop their strengths.						
67	I spend time teaching and coaching						
68	I consider my team members as having different needs, abilities, and aspirations from others.						

B. SCALES

Items measuring unit level transformational leadership (Using Multifactor Leadership Questionnaire (MLQ Form 5X-Short))

Idealized Influence Dimension Scale

- (1) I instill pride in being associated with me.
- (2) I go beyond my own self-interest for the good of group.
- (3) I act in ways that builds my team's respect
- (4) I display a sense of power and confidence
- (5) I talk about my most important values.

Inspirational Motivation Dimension Scale

- (1) I model ethical standards.
- (2) I consider the moral and ethical consequences of my decisions.
- (3) I emphasize the importance of having a collective sense of mission.
- (4) I talk optimistically about the future.
- (5) I express my confidence that goals will be achieved.

Intelligence stimulation Dimension Scale

- (1) I talk enthusiastically about what needs to be accomplished.
- (2) I arouse awareness about important issues.
- (3) I re-examine critical assumptions to question whether they are appropriate.
- (4) I seek differing perspectives when solving problems.
- (5) I suggest new ways of looking at how to complete assignments.

Individual Consideration Dimension Scale

- (1) I get my team members to look at problems from many different angles.
- (2) I give my team members individualized attention.
- (3) I help my team members to develop their strengths.
- (4) I spend time teaching and coaching.

- (5) I consider my team members as having different needs, abilities, and aspirations from others.

The Corporate Entrepreneurship Assessment Instrument-CEAI (Kuratko et al., 1990; Hornsby et al., 2002)

Top Management Support Scale

1. Money is often available to get new project ideas off the ground.
2. My organization is quick to use improved work methods.
3. Individuals with successful innovative projects receive additional reward and compensation for their ideas and efforts beyond the standard reward system.
4. Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.
5. Upper management is aware and very receptive to my ideas and suggestions.
6. There is a considerable desire among people in the organization for generating new ideas without regard to crossing departmental or functional boundaries.
7. The term "risk taker" is considered a positive attribute for people in my work area.
8. There are several options within the organization for individuals to get financial support for their innovative projects and ideas.
9. In my organization, developing one's own ideas is encouraged for the improvement of the organization.
10. My organization is quick to use improved work methods that are developed by workers.
11. Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not.
12. Many top managers have been known for their experience with the innovative process.
13. This organization supports many small and experimental projects realizing that some will undoubtedly fail.
14. The "doers" are allowed to make decisions on projects without going through elaborate justification and approval processes.

15. People are encouraged to talk to workers in other departments of this organization about ideas for new projects.
16. Promotion usually follows the development of new and innovative ideas.
17. Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.
18. People are often encouraged to take calculated risks with new ideas around here.
19. A worker with a good idea is often given free time to develop that idea.

Work Discretion Dimension Scale

1. I feel that I am my own boss and do not have to double check all of my decisions.
2. I have much autonomy on my job and am left on my own to do my own work.
3. It is basically my own responsibility to decide how my job gets done.
4. This organization provides the chance to be creative and try my own methods of doing the job.
5. I almost always get to decide what I do on my job
6. This organization provides freedom to use my own judgment.
7. I seldom have to follow the same work methods or steps for doing my major tasks from day to day.
8. This organization provides the chance to do something that makes use of my abilities.
9. Harsh criticism and punishment result from mistakes made on the job.
10. I have the freedom to decide what I do on my job

Time Availability Dimension Scale

1. I have just the right amount of time and work load to do everything well.
2. I feel that I am always working with time constraints on my job.
3. I always seem to have plenty of time to get everything done.
4. During the past three months, my work load was too heavy to spend time on developing new ideas.
5. My co-workers and I always find time for long-term problem solving.
6. My job is structured so that I have very little time to think about wider organizational problems.

Rewards/Reinforcement Dimension Scale

1. My manager helps me get my work done by removing obstacles.
2. There is a lot of challenge in my job.
3. My manager would tell his/her boss if my work was outstanding.
4. My supervisor will increase my job responsibilities if I am performing well in my job.
5. My supervisor will give me special recognition if my work performance is especially good.
6. The rewards I receive are dependent upon my work on the job.

Organizational Boundary Dimension Scale

1. I clearly know what level of work performance is expected from me in terms of amount, quality, and timeliness of output.
2. There is little uncertainty in my job.
3. On my job I have no doubt of what is expected of me.
4. There are many written rules and procedures that exist for doing my major tasks.
5. My job description clearly specifies the standards of performance on which my job is evaluated.
6. In the past three months, I have always followed standard operating procedures or practices to do my major tasks.
7. During the past year, my immediate supervisor discussed my work performance on which my job is evaluated.

C. DESCRIPTIVE STATISTICS

	N	Mean	Std. Deviation	Skewness	Kurtosis	Min.	Max.
Q1	135	3.73	.812	-.576	.02	2	5
Q2	135	3.29	1.099	-.014	-1.215	1	5
Q3	135	3.07	1.097	-.045	-.983	1	5
Q4	135	4.24	.784	-.823	.222	2	5
Q5	135	3.33	1.065	-.288	-.634	1	5
Q6	135	3.87	.871	-.700	.360	1	5
Q7	135	2.10	1.088	.921	.080	1	5
Q8	135	3.26	1.007	-.319	-.139	0	5
Q9	135	3.73	.965	-.586	-.141	1	5
Q10	135	4.04	.867	-.769	.434	1	5
Q11	135	3.07	1.273	-.163	-.729	0	5
Q12	135	3.47	.945	-.221	-.441	1	5
Q13	135	3.19	.918	.076	-.536	1	5
Q14	135	2.27	1.068	.588	-.323	1	5
Q15	135	3.30	1.086	-.331	-.602	1	5
Q16	135	3.64	.886	-.522	.170	1	5
Q17	135	3.41	1.053	-.180	-.679	1	5
Q18	135	3.07	1.062	-.453	.461	0	5
Q19	135	3.56	.843	-.367	-.106	1	5
Q20	135	3.21	1.075	-.513	.010	0	5
Q21	135	2.53	1.057	.412	-.358	0	5
Q22	135	3.10	1.161	-.467	.054	0	5
Q23	135	2.81	1.026	.059	-.693	1	5
Q24	135	2.84	1.038	-.317	-.338	0	5
Q25	135	3.45	1.020	-.232	-.638	1	5
Q26	135	3.67	1.172	-1.017	1.016	0	5
Q27	135	3.00	1.120	-.389	-.328	0	5
Q28	135	3.56	.843	-.442	-.085	1	5
Q29	135	3.26	.954	-.176	-.635	1	5
Q30	135	3.26	1.209	-.513	-.580	0	5
Q31	135	3.27	1.094	-.653	.032	0	5
Q32	135	3.84	.809	-.737	.830	1	5
Q33	135	3.41	1.089	-.712	.330	0	5
Q34	135	2.85	1.116	-.388	-.308	0	5
Q35	135	2.74	1.022	-.055	-.579	0	5
Q36	135	2.92	.970	-.283	-.505	1	5
Q37	135	3.37	.983	-.564	-.162	1	5
Q38	135	3.67	.922	-.560	-.243	1	5

Q39	135	2.81	1.108	.107	-.427	0	5
Q40	135	2.56	1.055	.141	-.945	1	5
Q41	135	3.56	.870	-.450	-.213	1	5
Q42	135	3.87	.910	-.774	.258	1	5
Q43	135	3.51	.969	-.282	-.517	1	5
Q44	135	3.51	.845	-.299	-.554	2	5
Q45	135	3.22	1.005	-.326	-.249	0	5
Q46	135	3.19	1.069	-.058	-1.063	1	5
Q47	135	2.82	1.078	.071	-.741	1	5
Q48	135	3.06	.976	-.022	-.949	1	5
Q49	135	3.59	.832	.041	-.572	2	5
Q50	135	4.10	.679	-.847	1.821	2	5
Q51	135	4.18	.621	-.516	1.209	2	5
Q52	135	4.05	.673	-.061	-.761	3	5
Q53	135	3.93	.816	-.698	.735	1	5
Q54	135	4.33	.644	-.427	-.685	3	5
Q55	135	4.21	.670	-.268	-.784	3	5
Q56	135	4.40	.576	-.315	-.752	3	5
Q57	135	3.84	.848	-.277	-.566	2	5
Q58	135	4.14	.625	-.294	.313	2	5
Q59	135	4.01	.664	-.319	.288	2	5
Q60	135	4.21	.662	-.266	-.747	3	5
Q61	135	4.12	.587	-.474	1.815	2	5
Q62	135	4.19	.696	-.281	-.912	3	5
Q63	135	4.16	.693	-.365	-.362	2	5
Q64	135	4.19	.637	-.354	.183	2	5
Q65	135	4.32	.619	-.524	.406	2	5
Q66	135	4.31	.685	-.772	.576	2	5
Q67	135	3.93	.825	-.346	-.487	2	5
Q68	135	4.28	.631	-.484	.278	2	5

D. HUMAN SUBJECTS ETHICS COMMITTEE APPROVAL

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER



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27 ŞUBAT 2018

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof.Dr. Nazlı WASTİ PAMUKSUZ ;

Danışmanlığını yaptığınız yüksek lisans öğrencisi Barış SOYAL' ın *"Büyük firmalarda girişimcilik ortamı, yenilikçilik ve dönüşümcü liderlik arasındaki ilişkiler: Bir savunma sanayi şirketinin incelenmesi"* başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay 2018-SOS-023 protokol numarası ile 27.02.2018 - 30.07.2018 tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Ayhan SOL

Üye

Prof. Dr. Ş. Halil TURAN

Başkan V

Prof. Dr. Ayhan Gürbüz DEMİR

Üye

Doç. Dr. Yaşar KONDAKCI

Üye

Doç. Dr. Zana ÇITAK

Üye

Yrd. Doç. Dr. Pinar KAYGAN

Üye

Yrd. Doç. Dr. Emre SELÇUK

Üye

E. TURKISH SUMMARY / TRKE ZET

Kresel ekonomi ve hızlı gelişen teknoloji tm dnyadaki kuruluşlar iin gl deęişiklikler yaratmaktadır. Bu deęişiklikler nedeniyle şirketlerin rekabet avantajı geliştirmesi byk bir zorluktur (Dewhurst, Harris ve Heywood, 2012). rn ve srelerde srekli yenilik, deęişen teknolojiye ayak uydurmanın ve şirketler iin pazar payını korumanın nemli bir yoludur. Bu nedenle inovasyon gn getike nem kazanmakta ve sonu olarak ynetim literatnde nemli bir ilgi ve eęilim yaratmaktadır (OECD Bilim, Teknoloji ve İnovasyon Raporu, 2016).

Srekli yenilięin poplaritesinin bir bařka nedeni, azalan rn yařam dngleri ve gnmz pazar kořullarında artan rekabettir. Hızla deęişen teknoloji nedeniyle şirketler rn yařam dnglerini daha kısa tutar ve rnlerini yeni teknolojilere gre uyarlamaktadırlar (Artz, Norman, Hatad ve Cardinal, 2010). Sre yenilikleri maliyeti ve pazara ıkıř sresini azaltmaktadır. Yeniliki rnleri rakiplerinden daha yeni teknolojiyle daha nce piyasaya srmek zel şirketlere rekabet avantajı ve daha byk pazar payı saęlamaktadır. Ayrıca savunma sanayiinde stn rnlerin tasarlanması ve retilmesi lkelere stratejik ve caydırıcı avantajlar saęlamaktadır (FitzGerald, Sander ve Parziale, 2016). Bilim ve teknoloji yatırımlarıyla askeri avantajı korumanın bir rneęi olarak, en son teknoloji hava savunma sistemi sahibi lkeye caydırıcı avantajlar getirecek ve dięer tm eski teknoloji uakları ve hava savunma sistemlerini iře yaramaz hale getirecektir (USAF 2030 STO Strateji Raporu, 2019). Askeri avantajlar elde etmek iin rnleri daha erken ve daha ucuza geliştirmek iin rnlerde ve retim srelerinde srekli yenilięi srdrmek ok nemlidir. Ayrıca inovasyon yetenekleri bir şirketi mřteri gereksinimlerini karřılamada ok daha evik hale getirmektedir (Lu ve Ramamurthy, 2011). Trkiye gibi geliřmekte olan lkelerin mřteri gereksinimlerini ok kısa srede karřılamak iin kltrlerine, kaynaklarına, yenilikilięe zg kendi yollarını geliřtirmeli, rnlerini ve srelerini geliřmiř lkelerle rekabet edebilmek iin hızla deęişen kořullara uyarlamaları gerekmektedir.

Yukarıda belirtilen nedenlerden dolayı iş insanları ve yönetim alanında çalışan akademisyenler “Bir şirket nasıl daha yenilikçi olabilir?” sorusunun cevabını aramaktadır. İş yerindeki organizasyon sınırları ve yapısı, büyük şirketlerin çalışanlarının sorumluluklarını ve rollerini belirlemektedir. Bu nedenle çalışanlar temel olarak sadece kendi profesyonel işlerini, farklı departmanlar arasında çok sınırlı bilgi aktarımı ile yapmaktadır. Bu davranışlar bir ölçüde optimizasyon ve maliyet azaltımı sağlayabilmektedir. Bununla birlikte, küreselleşmiş dünyada koşullar ve kısıtlamalar değiştikçe zenginlik varolan bilginin optimizasyonu ile değil, varolmayan bilginin araştırılması ile yani yenilikle yaratılmaktadır. Bu da zenginliğin zaten bilineni mükemmel veya optimum hale getirerek elde etmekten çok bilinmeyen kusurlu bir şekilde de olsa araştırarak ulaşıldığı anlamına gelmektedir (Kelly, 1997).

Büyük bir şirkette yaratıcı bir fikri olan bir çalışanı ele alalım. Kurumsal girişimciliğin olmadığı durumlarda, çalışan büyük bir şirkette yenilik yapmaya çalışırken yazılı kuralları, prosedürleri ve yeni ürün geliştirme yöntemlerini kendi özel durumuna göre esnetmeye çalıştığında çeşitli engellerle karşılaşmaktadır. Bu katı kurallar yeni fikirlerin ve yeniliklerin ortaya çıkmasını engellemektedir (Schaeffer, 2015). Yaratıcı fikrini hayata geçirmeye ve girişimci olarak yenilik yapmaya çalışan fikir sahibi yeni ve küçük bir şirket kurabilmektedir, ancak artan rekabet ortamında küçük bir girişimci olarak hayatta kalmak çeşitli zorluklar barındırmaktadır. Bu durumda, bu yaratıcı fikir üzerinde çalışmak için geniş bir iş ağı, finansal güç, piyasa bilgisi ve tüketici istek ve sorunlarının bilinmesi gibi farklı önkoşullar mevcut bulunmaktadır (Ardichvili ve Cardozo, 2000). İyi yeni fikirler veya yenilikler bile sınırlı finansal ve teknolojik kaynaklar, kötü yönetim becerileri veya yetersiz pazarlama nedeniyle uygun bir ürüne dönüşmeyebilmektedir. Kaynaklar inovasyon için çok önemlidir ve insan kaynaklarını, fonları, zaman bulunabilirliğini ve materyalleri içermektedir (Batten, 2002). Elfenbein, Hamilton ve Zenger (2010) gibi araştırmacılar bu etkiyi “küçük firma etkisi” olarak tanımlamaktadır. Chesbrough (2002) Xerox’un teknoloji kuruluşlarını desteklemesini ve yönetmesini büyük şirketlerdeki girişimciler için başarılı bir kurumsal girişimcilik örneği olarak araştırmaktadır. Shane ve Venkataraman (2000) girişimciliğin büyük

örgütlerde, özellikle de bireylerin kendi projelerini gerçekleştirme teşvikleri olmadığı durumlarda, daha olası olduğunu belirtmektedir. Girişimciliğe geçişin büyük ve olgun şirketlerin çalışanları arasında KOBİ'lerden üç kat daha fazla olduğu tespit edilmiş bulunmaktadır (Sorensen, 2007).

Literatürde büyük bir şirkette girişimcilik için birçok farklı terim bulunmaktadır. Morris ve Kuratko (2002) bu tür girişimciliği “kurumsal girişimcilik” olarak tanımlamaktadır. Bu kavram Hornsby, Kuratko ve Zahra (2002) tarafından “şirket içi girişim” olarak tanımlanmaktadır. Covin ve Miller (2014) “stratejik girişimci duruş” terimini tercih ederken, Pinchot (1985) “iç girişimcilik” terimini önermektedir. Tang ve Koveos (2004) “şirket girişimciliği” terimini kullanırken Dess ve Lumpkin (2005) “girişimci yönelim” ve “kurumsal girişimcilik” terimlerini kullanmaktadır. Bu çalışmada “kurumsal girişimcilik” terimi, son yıllarda yapılan bilimsel atıf endeksli araştırma makalelerinin çoğu tarafından tercih edildiği için kullanılmaktadır.

Kurumsal girişimcilik, mevcut bir kuruluş içinde yeni bir kuruluş oluşturan veya stratejik gençleştirme veya yenilik üreten bir süreçtir. Bu tanım, şirket içindeki örgütsel yeniliklerin toplanmasını, rekabet avantajı kazanmak için stratejik yenileme faaliyetlerini ve kurumsal girişim faaliyetlerini içermektedir (Irland, Covin ve Kuratko, 2009).

Yenilik şirketin yeni ürünler, yeni üretim süreçleri ve yeni organizasyon sistemleri yaratma konusundaki kararlılığı ve istekliliğini ifade etmektedir (Zahra ve Covin, 1995). Damanpour (1991) inovasyonu yeni bir ürün, süreç, hizmet veya bir organizasyon yapısı veya idari sistem için yeni bir plan olarak açıklamaktadır. Stratejik yenileme, Guth ve Ginsberg (1990) tarafından yeni kaynak kombinasyonları nedeniyle yeni servet üretilmesi olarak tanımlanmaktadır. Değişen iş kapsamı ve operasyonları canlandırmak için rekabetçi yaklaşımlar da stratejik yeniliğe dahil edilmektedir. Kurumsal girişim Covin ve Slevin (1991) ve Lumpkin ve Dess (1996) gibi araştırmacılar tarafından yeni iş yaratımı olarak da tanımlanmaktadır.

Kurumsal girişimcilik, büyük şirketlerin inovasyonu arttırmak için yararlandığı bir araçtır, çünkü kurumsal girişimcilik olmadan bürokrasileri ve katı yönetim yapıları nedeniyle şirketler atalet içinde bulunmaktadır (Thornberry, 2001). Kurumsal girişimcilik şirket yeniliğini artıran bilgi ve yeni teknolojiler ile bağlantı sağlamaktadır (Boone, Lokshin, Guenter ve Belderbos, 2019). Kurumsal girişimcilik büyük bir şirketin gücünü ve becerilerini ve bir girişimcinin çevikliği, yeni fikirler uygulama kolaylığı, yenilikçiliği ve hızlı karar verme veya yargılama gibi avantajlarını kullanmanın hibrit bir yoludur. Kurumsal girişimcilik uygulamalarını benimseyen şirketler dinamik ve esnek, ayrıca yükselen yeni iş fırsatlarını yakalamaya hazır olmaktadır (Busenitz, Plummer, Klotz, Shahzad ve Rhoads, 2014; De Jong, 2013). Büyük şirketler çalışanlarının yenilikçi yeteneklerini kullanarak kurumsal girişimciliğin faydalarını fark etmektedirler ve bu modeli inovasyon projeleri için uygulamaktadırlar (Ahuja ve Lampert, 2001). Boeing'in "Phantom", Google'ın "X Laboratuvarı", Amazon'un "Lab 126 ve A9", Apple'ın "Jony Ive'ın Apple Tasarım Laboratuvarı", Raytheon'un "Bisiklet Mağazası", Du Pont'un "Deney İstasyonu", Ford'un "Özel Araç Ekibi ve Silikon Vadisi Laboratuvarı", Nike'ın "İnovasyon Mutfağı", Walmart Labs, AUDI'nin "Quattro GmbH", Nordstrom'un "İnovasyon Laboratuvarı", HP Laboratuvarları, Stables'ın "Hız Laboratuvarı", Xerox'un "PARC", IBM'in "Thomas J. Watson Araştırma Merkezi", Samsung'un "SAIT" ve Arçelik'in "Garaj"ı farklı sektörlerden büyük teknoloji tabanlı şirketlerde kurumsal girişimciliğin başarılı örnekleri olarak yer almaktadır.

Kurumsal girişimcilik olanaklarından yararlanmaya çalışan bir şirket için beş temel adım yer almaktadır (Hornsby, Naffziger ve Kuratko, 1993). İlk adım olarak, üst yönetim firma içindeki girişimcilik faaliyetlerini teşvik etmektedir ve bu faaliyetler için uygun bir iklim sağlamaktadır (Kuratko, Hornsby, Sabatine, 1999). İkinci adımda örgüt, çalışanlara yeni fikirlerin uygulanmasına yönelik karar verme ve özerklik özgürlüğü sağlamaktadır (Ireland, Covin ve Kuratko, 1999). Üçüncü bir adım olarak şirket, girişimcilik faaliyetlerinde yer alan çalışanlara ödüller ve teşvikler sağlamaktadır (Hornsby, Naffziger ve Kuratko, 1993). Dördüncü adımda şirket, yenilikleri takip etmek için gereken boş zamanı çalışanlarına verecek şekilde

iş yükünü düzenlemektedir (Kreiser, Kuratko, Covin, Irland, Hornsby, 2019). Son adım olarak, şirket, destekleyici bir organizasyon yapısı ve insanların kendi işlerinin dışındaki sorunlara bakmasını engelleyen sınırları daha geçirgen hale getirmektedir ve çalışanları organizasyona geniş bir perspektiften bakmaya teşvik etmektedir (Kuratko, Irland, Covin, Hornsby, 2005).

Bu beş yönlü mekanizmanın şirket içinde bir dönüşüm yoluyla yaratıcı fikirlere, çözümlere ve yeniliğe yol açan doğru yönetilme ihtiyacı bulunmaktadır. Özellikle yenilikçi davranışlar için liderlik çok büyük önem arz etmektedir (De Jong, 2007). Balsano, Goodrich, Lee, Miley, Morse ve Roberts (2008) liderliğin yenilikçi davranışa katkıda bulunan kurumsal bir girişim ortamı ve kültürü geliştirerek yeniliği artırabileceğini göstermektedir. Damanpour (1991) liderlik ve kurumsal girişimcilik arasında anlamlı bir ilişki olduğunu belirtmektedir. Şirketlerde önceden varolan yapılar ve organizasyonlarda değişime karşı direnç nedeniyle kurumsal girişimcilik çok zordur. Bu zor süreci yönetmek için liderlik tarzı çok önemlidir çünkü liderlik tarzı kültür, motivasyon ve strateji gibi örgütsel özellikleri etkileyen kritik bir etmen olarak geçmektedir (Cheung ve Wong, 2011).

Kurumsal girişimcilik faaliyetleri genellikle şirket içindeki “şampiyon” bir girişimci tarafından başlatılmaktadır ve yönetilmektedir (Brown, 2004). Bu nedenle başarılı bir kurumsal girişimcilik girişiminde, personeli statükonun ötesine geçmeye ve yenilik yapma yeteneklerini artırmaya teşvik etmek için dönüşümcü liderliğe ihtiyaç bulunmaktadır (Ling ve diğerleri, 2008). Geleneksel yönetimde insanları kontrol etmek veya hataları düzeltmek için birçok mekanizma bulunmaktadır. Ancak kurumsal girişimcilikte takımı daha çevik hale getirmek için daha az yönetim mekanizması bulunmaktadır (Burns, 2013). Bu noktada ekibin motivasyonu, kontrolü ve yönetimi üzerinde ekip liderinin ya da yöneticisinin rolü daha fazla olmaktadır (Shin ve Zhou, 2003). Liderlik, çalışanların motivasyonu, grup içi ve gruplar arasındaki iletişim ve bilgi akışı yönü belirleme ile ilgili fonksiyonlar bulundurmaktadır. Doğrudan yöneticinin liderlik tarzı ekibin yenilik kabiliyetini önemli ölçüde etkilemektedir, çünkü çalışanlar örgütün stratejisine ve operasyonel ortamına göre kararlar almaktadırlar (Bel, 2010). Bir şirket içinde girişimci bir

grubun yönetimi farklı liderlik yetenekleri gerektiren büyük bir sorun olarak karşımıza çıkmaktadır. Bu nedenle yönetim uygulamalarının, kurumsal girişimciliği kolaylaştırmak ve şirketin kurumsal hedeflerini desteklemek için lider tarafından uyarlanması gerekmektedir (De Church ve diğerleri, 2010). Kurumsal girişimcilik ortamı ile inovasyon performansı arasındaki ilişkinin dönüşümcü liderliğin etkisiyle artması beklenmektedir. Zahra (1996) dönüşümcü liderlik, kurumsal girişimcilik ve inovasyon gibi temel stratejik faaliyetleri desteklediğinden, kurumsal girişimciliğin dönüşümsel olarak yönetilen örgütlerde gerçekleşme olasılığının daha yüksek olduğunu ifade etmektedir (Ling, Şimşek, Lubatkin ve Veiga, 2008). Matzler, Schwarz, Deutinger ve Harms (2008) dönüşümcü liderliğin yenilikçilik ve kârlılık üzerinde olumlu ve anlamlı bir etkisi olduğunu bulurken, Eisenbeiss, Knippenberg ve Boerner (2008) dönüşümcü liderlerin Ar-Ge ekibinin yenilikçiliği üzerinde olumlu bir etkiye sahip olduğunu ifade etmektedir.

İnovasyon ve kurumsal girişimcilik üzerine yapılan araştırmalar şirketlerin inovasyon stratejilerini uygulamak için birimlerine önemli derecede özerklik sağlamaları gerektiğini göstermektedir (Burgelman, 2002). Özerklik doğru yönetildiğinde yeniliğe yol açmaktadır. Çalışmalar operasyonel yöneticilere verilen özerkliğin önemini ve kurumsal girişimcilikteki rollerini göstermektedir (Shimizu, 2012). Ancak aynı zamanda bu özerklik şirket için de zararlı veya işe yaramaz olabilmektedir (Burns, 2013). Her şeyden önce yaratıcı fikirler ve şirketin stratejisi aynı yönde olmalıdır çünkü şirket sadece stratejik odak alanındaki projeleri destekleyebilmektedir. Operasyonel veya alt düzey yöneticilere özerklik verilmesi, farklı yönetim seviyeleri arasında bilgi asimetrisine neden olabilmektedir (Kuratko ve diğerleri, 2004). Burada bahsedilen bilgi asimetrisi riski, dönüşümcü liderler tarafından önlenabilir, çünkü ilham verici motivasyonları ve ideal etki davranışları ile dönüşümcü liderler personelin kendi kişisel hedeflerini yönlendirerek tüm organizasyonun stratejik hedefleri ile aynı doğrultuya getirebilmektedirler (Wang ve Howell, 2010). Bu dakurumsal girişimciliğin temel çıktılarından biri olan inovasyon performansı ile kurumsal girişimcilik arasındaki ilişkinin dönüşümcü liderliğin etkisiyle değişebileceği anlamına gelmektedir.

Özerkliğin getirdiği bir diğer risk çalışanların özgürlük bağımlılığı olarak ifade edilmektedir. Özerk bir grupta bir proje için çalışmaya alışmış bir çalışan proje sonrasında özerklik kaybı nedeniyle ana örgütün kurallarına ve çalışma ortamına uyum sağlamada sorun yaşayabilmektedir (Morris ve Kuratko, 2002). Ayrıca bu tür özerk alışkanlıklar ve davranışlar fırsatçı davranışları beraberinde getirebilmektedir (Shimizu, 2012). Bu riskler kurumsal girişimcilikten en iyi şekilde yararlanmak için düzgün bir şekilde yönetilmelidir ve bu nedenle liderliğin kurumsal girişimcilik ve inovasyon üzerinde önemli bir etkisi bulunmaktadır. Burke, Sims, Lazzara ve Salas (2007) dönüşümcü liderlerin çalışanların güvenini arttırdığını ifade etmektedirler. Bu da çalışanları liderlerine karşı daha sorumlu hale getirebilmektedir ve takım içindeki fırsatçı davranışları engelleyebilmektedir.

Sektör gereklilikleri ve şartları da yenilikleri incelerken önemlidir. Örneğin, savunma sektöründeki bir girişimci füzeler veya silahlar üzerinde bireysel olarak çalışmamaktadır. Savunma/havacılık sektöründe mali ve yönetsel desteği olmayan bir girişimci fikrini gerçekleştirememektedir ve bir uçak veya savaş uçağı prototipi üretememektedir. Bu nedenle, özellikle savunma sektöründeki şirketler ve girişimciler, büyük şirketlerin yavaşlığından kurtulmak ve inovasyon için kurumsal girişimciliğe ihtiyaç duyabilmektedirler. Bu nedenlerle savunma/havacılık sektörü için kurumsal girişimciliği ve onu etkileyen örgütsel etmenlerin daha fazla araştırılması gerekmektedir.

Savunma endüstrisinde Lockheed Martin 2. Dünya Savaşı sırasında çok kısa bir sürede savaş uçakları tasarlamak ve üretmek için 1943'te kurumsal bir girişimcilik faaliyeti olarak "Skunk Works" ü başlatmış bulunmaktadır (Miller, 1993). Skunk Works terimi, İngiliz Dili Sözlüğü'nün 4. baskısında yer aldığı gibi yenilikçi ürünler üretmek için sıklıkla gizlilik içeren bir çalışma olarak tanımlanmaktadır. Genellikle Skunk Works gruplarının temel görevi radikal inovasyon geliştirmektir ve bu grupların takvim ve bütçeleri sınırlı tutulmaktadır çünkü çok kısa sürede prototip geliştirmeye çalışmaktadırlar (May, 2013).

Yukarıdaki nedenlerden dolayı özellikle savunma sektöründe kurumsal girişimcilik ortamı, yenilikçilik ve dönüşümcü liderlik arasındaki ilişkilerin araştırılması gerekmektedir. Bu çalışmanın amacı, büyük bir savunma/havacılık şirketinde kurumsal girişimcilik faktörleri ve inovasyon arasındaki ilişkiyi ve ayrıca dönüşümcü liderliğin bu ilişki üzerindeki etkisini araştırmaktır.

Bu tezde kurumsal girişimcilik ve liderlik çalışmaları için veri toplamada yaygın olarak kullanılan anket yöntemi kullanılmaktadır (örn. Engelen ve diğerleri, 2012; Somech, 2006; Chen ve diğerleri, 2014; Chang ve diğerleri, 2017). Bu çalışmada anketler “şef” unvanına sahip bölüm yöneticileri tarafından doldurulmuştur. Şirketin inovasyon kayıt sisteminde kayıtlı finansal geliri olan 150 departmanı bulunmaktadır ve bu departmanların 2015-2017 yılları için finansal kazanç veya gelir sağlayan en az bir inovasyonu bulunmaktadır. 150 departmanın birinci kademe yöneticilerinin tamamı (“şefler”) ankete katılmaktadır. Şeflerden ortak yöntem varyansını önlemek için anketleri iki farklı zaman diliminde doldurmaları istenmektedir (Podsakoff ve diğerleri, 2012). Tüm katılımcılar anketi araştırmacı ile yüz yüze doldurmuş bulunmaktadır. Katılımcılardan ilk randevuda anketin ilk kısmını doldurmaları istenmiştir ve iki hafta sonra ikinci kısmın doldurulması gerçekleştirilmiştir. Firma içindeki kurumsal girişimciliği etkileyen beş ana faktöre ilişkin algılarını ölçmek için Kurumsal Girişimcilik Değerlendirme Aracı-“CEAI” (Kuratko ve diğerleri, 1990; Hornsby ve diğerleri, 2002) kullanılmıştır. Birim düzeyinde dönüşümcü liderliği ölçmek için Avolio, Bass ve Jung (1999) tarafından geliştirilen 20 maddelik Çok Faktörlü Liderlik Anketi (MLQ Form 5X-Short) ölçeği kullanılmıştır. Bu ölçekte birim düzey yöneticisinden (“şef”) ifadelerin kendi liderliğini ne derece doğru tanımladığını belirtmesi istenmiştir (1 = “kesinlikle katılmıyorum” 5 = “kesinlikle katılıyorum”).

Yapılan veri temizleme işlemi sonrasında kritik “z” değeri 3.29 olarak alınmıştır ve bunun dışında kalan 15 katılımcının yanıtları araştırma dışında bırakılmıştır. Ayrıca yapılan faktör analizinde kurumsal girişimcilik değerlendirme aracının literatürdeki gibi beş boyutlu çıkmadığı görülmüştür. Farklı kültürlerde yapılan araştırmalarda benzer sonuçlar ile karşılaşmıştır. Yapılan bu çalışmada üç faktörlü bir yapı ortaya

çıkmiştir. Yeni boyutların güvenirlik değerleri (Cronbach alfa) yönetim desteği için 0.927, organizasyonel yapı için 0.538 ve kaynak mevcudiyeti için 0.503 olarak saptanmıştır. Ayrıca dönüşümcü liderlik boyutunun güvenirlik değeri 0.909 olarak bulunmuştur. Yapılan analizde varyans enflasyon faktörü en yüksek 6.305 olarak bulunmuştur;10'un altındaki değerlerde çoklu doğrusallık problemi olmadığı belirtilmektedir (Baron and Tang, 2011). Daha sonra yapılan regresyon analizinde model 0.478 olan p değeri ile anlamlı çıkmamıştır. Sonuç olarak kurumsal girişimcilik boyutları ile inovasyon arasında anlamlı bir ilişki saptanamamıştır. Daha sonra yönetim desteği, organizasyonel yapı ve kaynak mevcudiyeti ile inovasyon arasındaki ilişkinin aracı değişken olarak dönüşümcü liderlik ile değişimi incelenmiştir ve bu analizlerde de anlamlı ilişki bulunamamıştır.

Bu çalışmanın bulgularına göre kurumsal girişimcilik boyutlarının hiçbirisi inovasyon performansını etkilememektedir. Ayrıca dönüşümcü liderliğin bu ilişkiler üzerinde bir etkisi bulunmamaktadır. Bulgularımız literatürdeki kurumsal girişimcilik ve yenilik performansı arasındaki ilişkide dönüşümcü liderliğin rolü hakkında yapılan çalışmaları tamamlayıcı niteliktedir (Hornsby ve diğerleri, 2009; Engelen ve diğerleri, 2012; ve Chang ve diğ., 2017). Bu çalışma ile Türk savunma ve havacılık firmaları bağlamında kurumsal girişimcilik ve yenilik performansı sonuçlarının sağlıklı şekilde ölçülmesi için enstrüman veya araç ihtiyacı ortaya çıkmış bulunmaktadır. Kurumsal girişimcilik üzerine yapılan araştırmaların çoğu ABD'de yapılmıştır ve bu nedenle kurumsal girişimciliği bir Türk şirketine incelemek önem arz etmektedir. Ancak bu araştırma kurumsal girişimcilik değerlendirme aracının (CEAI) Adonisi'nin (2003) belirttiği gibi gözden geçirilmesi ve iyileştirilmesinin gerektiğini göstermektedir.

Çalışmanın bazı kısıtları mevcut bulunmaktadır. Araştırmanın tek bir şirkette yapılması sonuçların genellenmesi için yetersiz sayılabilmektedir. Bu araştırma gelecekte diğer havacılık ve savunma şirketlerinde de yapılabileceği değerlendirilmektedir. Diğer bir kısıt çalışmanın birçok görgül çalışmada var olan kesitsel bir tasarıma sahip olmasıdır. İnovasyon çalışmaları genellikle gecikmeli sonuçlar gösterdiğinden gelecekteki araştırmalar farklı dönemlerde elde edilecek

verilerin bir karşılaştırmasını sağlayabilecektir. Ayrıca katılımcılar tarafından kendi kendini raporlama şeklinde gerçekleşen veri toplama süreci sonuçlara yanılısma olarak etki etmiş olabileceği düşünülmektedir. Bu nedenle gelecekteki araştırmalarda, birden fazla katılımcı grubunun çalışmaya dahil edilmesi faydalı olacaktır.

Son olarak, X Şirketi'nin inovasyon kayıt sisteminin bazı sınırlamaları mevcut bulunmaktadır. Bu çalışmada bağımlı değişken Şirket X'in her departmanı için kişi başına düşen inovasyon kazancıdır. Bununla birlikte, inovasyon kayıt sistemi bazı inovasyon türleri için finansal kazançları hesaplayamamaktadır. Kalite iyileştirmelerinin ekonomik getirileri hesaplanırken teklifin uygulanmasından önce belirtilen iyileştirmenin olmaması kaynaklı hasarların ekonomik kaybının tutulduğu yazılı kalite güvence raporları (QAR) dikkate alınmaktadır. Böyle bir kalite güvence raporu mevcut değilse düşük kaliteyi ve hasar maliyetini ortadan kaldıran bir önerinin finansal kâr hesaplaması yapılamamaktadır. Bu durumlarda inovasyon/yenilik finansal kazancı sıfır olarak hesaplanmaktadır. Ayrıca iş sağlığı ve güvenliği, çevre, güvenlik, kalite vb. alanlardaki yeniliklerin finansal kazanımları bu yenilik kayıt sistemi ile hesaplanamamaktadır. Bu hesaplanamayan mali kazançlar bağımlı değişkenin eksik hesaplanması anlamına geldiğinden hipotezlerimizin hiçbirini destekleyecek önemli ilişkiler bulmamanın bir nedeni olabilir. Bu nedenle gelecekteki araştırmalarda her türlü inovasyonun mali kazanımlarını hesaplayabilen daha doğru bir inovasyon kayıt sistemi kullanmak anlamlı olabilmektedir.

Bu çalışma ile kurumsal girişimciliğin işleyişini ve yeniliğe olan etkisini yansıtmak mümkün hale gelmektedir. Kurumsal girişimcilik ekonomik büyümeye katkısına rağmen akademik çalışmalarda Türkiye'de yeterince araştırılmamış bir alan olarak yer almaktadır. Bu çalışma kurumsal girişimcilik faktörlerinin inovasyon üzerindeki etkilerini inceleyerek Türk savunma ve havacılık sektörüne uygun bir kurumsal girişimcilik değerlendirme aracına ihtiyaç duyduğunu göstermektedir. Ayrıca yenilikleri ve farklı kazanım türlerini değerlendirmek için her türlü inovasyonun ekonomik değerini hesaplayabilen bir yenilik kayıt sistemine duyulan ihtiyaç bu çalışma tarafından belirtilmektedir. Bu iki önemli ihtiyaç, bu çalışmanın en önemli

bulguları olarak karşımıza çıkmaktadır ve girişimciler, yöneticiler, akademisyenler ve ayrıca politika yapıcılar için çeşitli sonuçları mevcut bulunmaktadır.

Gelişmiş batı ekonomilerinde mikro ve makro düzeyde ülke ekonomisine önemli katma değer sağlayan kurumsal girişimcilik ile ilgili bilimsel çalışmaların sayısı önemli bir artış gösterse de bu kavramlar Türkiye gibi gelişmekte olan ülkelerde yeterince bilinmemekte ve bu nedenle tartışılmamaktadır. Fırsatlardan yararlanma kabiliyeti zayıf olan işletmelerin yöneticileri işletmenin girişimci ruhunu yeniden kazanmak, dış ortama uyum sağlamak ve rakipleri takip etmek yerine yeniliklerle öncü olmak, yeni pazarlara ulaşmak ve sürdürülebilir verimlilik sahibi olmak istemektedirler (Bulut, Fis, Aktan ve Yılmaz, 2008). Bunun sebebi şirketlerin büyüdükçe risk almaktan kaçınarak kurulum anında dinamizmini kaybetmesi olarak ifade edilmektedir (Kanter, 2006). Başarılı yöneticiler örgütsel esneklik kazanmak için stratejik bir perspektif aramaktadırlar ve çevredeki fırsatları belirleme, değerlendirme ve uygulamada yenilikler yapmaktadırlar (Barringer ve Bluedorn, 1999; Antoncic ve Hisrich, 2001). Kurumsal girişimciliğe ulaşmak isteyen yöneticilerin hedefleri yeni girişimler yapmak, yeni pazarlar yaratmak, yeni temel yetkinlikler edinmek ve yeniliğe dayalı rekabet avantajı elde etmektir (Dess ve Lumpkin, 2005; Kanter, 2006). Bu şekilde girişimci yöneticiler, çalışanlarına sağlayacakları girişimcilik ortamı ile iş doyumlarını ve motivasyonlarını artırarak kurumlarının finansal performansını güçlendirerek büyümeyi gerçekleştirmektedir (Zahra, Neubaum ve Huse, 2000; Hayton 2005). Bu açıdan bakıldığında kurumsal girişimcilik hem finansal hem de insan kaynakları performansı üzerindeki etkisi ile kuruluşun uzun vadeli rekabet avantajına ve sürekliliğine benzersiz bir katkı sağlamaktadır (Wiklund, 1999).

Yenilik sadece şirketin kapasitesine değil, aynı zamanda şirketlerin kurumsal girişim ortamına ve ülkenin teknolojik veya ekonomik koşullarına da bağlı bulunmaktadır. Ülkelerin ekonomik gücü o ülkede faaliyet gösteren şirketlerin rekabet gücüne bağlı bulunmaktadır. Bu nedenle ülkeler şirketleri desteklemek için politikalar uygulamaktadır ve rekabet güçlerini artırmalarına yardımcı olmaya çalışmaktadırlar. Ülkeler şirketlerin inovasyon faaliyetlerini desteklemek için kurumlar

kurumladırılar, yasaları hazırlamaktadırlar ve inovasyonu artırmak için teşvikler yaratmaktadırlar. Bugün yenilik tüm ülkelerde ekonomik büyümenin önemli bir parçası haline gelmiş bulunmaktadır (Kitanovic, 2007). Ülkelerin dinamizmi ve ekonomik başarısı, inovasyondaki başarılarına ve eğitimli ve sektöre özgü insan sayısına bağlı bulunmaktadır (Nelson, 2002). İnovasyonun önemi tüm ülke politikaları için geçerli olduğu gibi Türkiye için de geçerlidir ve bu nedenle kanunları, teşvikleri ve kurumları belirleyen inovasyon politikası çok büyük önem arz etmektedir.

Literatürde, yeni teknolojilerin kullanılması, inovasyon ve yeni iş yaratılması gibi kurumsal girişimcilik çıktılarının çevresel faktörlere bağlı olduğu belirtilmektedir (Holmes ve diğerleri., 2016). Hükümetler ve geliştirip uyguladıkları politikalar, şirketlerin kaynaklara erişimini etkileyen en etkili oyunculardan sayılmaktadır (Doh, Lawton ve Rajwani, 2012). Ayrıca bu politikalar kurumsal girişimciliği kaynak akışı ve inovasyon yatırımlarının getirisi ile etkilemektedir. Bu şekilde politikalar kurumsal girişimcilik stratejilerinin uygulanmasını, bilgiyi, yeniliği ve ekonomik kalkınmayı etkilemektedir.

Hükümet politikaları şirketleri girişimci davranmaya teşvik etmektedir (Lazzarini, 2015). Bu politikalar şirketlerin girişimci davranmaları için gerekli teşvikleri şekillendirebilmektedir (McMullen, Bagby ve Palich, 2008). Hükümetlerin yenilikçi ve girişimci amaçları, bir ülkenin inovasyon altyapısını desteklemek ve yapılandırmak için kaynaklar tahsis etmektedir ve teknoloji politikalarını uygulamaktadır (Etzkowitz ve Leydesdorff, 2000). Özellikle teknoloji politikaları şirketlerin, çalışanların ve üniversitelerin ülkedeki bilgi geliştirme ve inovasyona katılma yeteneklerini, ödülleri, teşviklerini oluşturmaktadır. Bu şekilde hükümet politikaları inovasyon ve stratejik değişim için gerekli yatırımları düzenlemektedir. Teknolojik değişimlere ve küresel rekabete paralel olarak, farklı kaynaklardan bilginin geliştirilmesi ve birleştirilmesi ihtiyacı çok önem arz etmektedir (Danis, Chiaburu ve Lyles, 2010). Yenilik yapamayan şirketlerin zaman içinde hayatta kalma olasılığı daha düşük bulunmaktadır. Bu nedenle hükümetlerin teknoloji politikaları,

inovasyon fırsatlarını yakalama teşviklerini ve araçlarını etkilediğinden hayati öneme sahip bulunmaktadır.

Bu çalışma kurumsal girişimcilik faktörleri ile inovasyon arasında anlamlı bir ilişki bulmamasına rağmen daha geniş bir kitleyi hedefleyen bir politika çerçevesi geliştirmek için kurumsal girişimci etmenleri ve inovasyonu ölçmek için bir ölçeğe büyük bir ihtiyaç olduğunu göstermektedir. Bu ihtiyaçlar aşağıdaki şekilde özetlenebilmektedir.

(i)Türk savunma ve havacılık endüstrisi için uygun bir kurumsal girişimcilik değerlendirme aracı geliştirilmesi

(ii) Savunma ve havacılık şirketleri için her türlü yeniliğin finansal kazançlarını hesaplamak için doğru bir inovasyon kayıt sistemi geliştirilmesi

Her tür inovasyonun mali kazanımlarını hesaplamak için uygun bir inovasyon kayıt sistemi ve kurumsal girişimcilik değerlendirme aracı oluşturulduktan sonra Türk havacılık ve savunma sanayisinde kurumsal girişimcilik ile inovasyon performansını arttırmanın yollarını araştırmak mümkün olacaktır.

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