ORGANIZATIONAL LEARNING CULTURE, THE CLIMATE FOR INNOVATION, AND ORGANIZATIONAL RESILIENCE

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DECLARATION OF ORIGINALITY

I, Alev Özer, certify that

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ABSTRACT

Organizational Learning Culture,

the Climate for Innovation, and Organizational Resilience

The major aim of this thesis is to theoretically and empirically relate the concept of organizational resilience to its suggested antecedents as organizational learning culture and climate for innovation and explain how they can help to build latent resilience for organizations. In line with this objective, this study attempts to statistically analyze the antecedents of organizational resilience and provide explanation for whether climate for innovation has a mediating effect on the relationship between organizational learning culture and resilience. Moreover, this study suggests and investigates the potential moderating effect of dynamic environments on the relation between organizational learning culture and organizational resilience**.**

Quantitative data, collected via survey administered to mid-level managers of small and medium sized enterprises and larger companies from Istanbul, is used to test the hypotheses developed in light of the related literature. Results provided corroborative empirical evidence for the mediating effect of climate for innovation on the relationship between organizational learning culture and organizational resilience, while not observing the suggested moderating effect of environmental dynamism on this mediated relationship. It is also revealed, that an increase in the transformational leadership characteristics of top management leads to high levels of both climate for innovation and organizational learning culture.

ÖZET

Öğrenme Kültürü, İnovasyon İklimi ve Kurumsal Dayanıklılık / Rezilyans

Bu çalışmanın amacı, kurumsal dayanıklılık/rezilyans kavramını teorik ve ampirik olarak ele alarak, öğrenme kültürü ve inovasyon ikliminin öncül olarak nasıl dayanıklılığa yok açtıklarını açıklamaktır. Bu amaç doğrultusunda, çalışma; inovasyon ikliminin, öğrenme kültürü ve dayanıklılık/rezilyans arasındaki ilişki üzerindeki önerilen aracı etkisini istatistiki olarak analiz ederek açıklamaktadır. Ayrıca, bu çalışma, çevresel dinamizmin öğrenme kültürü ve kurumsal dayanıklılık/rezilyans arasındaki ilişkide önerilen farklılaştırıcı etkisinin olup olmadığını analiz etmektedir.

İstanbul'da faaliyet gösteren KOBİ'lerin (küçük ve orta büyüklükteki işletmeler) ve daha büyük firmaların orta düzey yöneticilerine yöneltilen anket soruları sonucunda oluşan kantitatif veriler kullanılarak, literatür taraması sonucu geliştirilmiş olan hipotezler test edilmiştir. Sonuçtaki bulgular, inovasyon ikliminin öğrenme kültürü ve kurumsal dayanıklılık/rezilyans arasındaki ilişki üzerinde anlamlı bir aracı etkisi olduğunu göstermiştir. Fakat, öngörülmüş olan çevresel dinamizmin farklılaştırıcı etkisinin anlamlı çıkmadığı görülmüştür. Ayrıca, çalışma, üst yönetimdeki dönüşümcü liderlik özelliklerinin inovasyon iklimi ve öğrenme kültürü üzerinde arttırıcı etkisi olduğunu göstermiştir.

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CHAPTER 1

INTRODUCTION

Today's dynamic and volatile business environment presents both various opportunities and threats for the organizations. Change, being positive and/or negative, has become a common part of organizational life and survival in such environment has become more of a concern for organizations and researchers of organizational studies. Indeed, in many cases, survival only has proven not to be enough for organizations, that there might emerge an increasing need to produce even better outcomes when facing these changes. For this reason, borrowed from other areas of study, resilience has started to gain a growing attention in organizational studies and researchers have recently started to incorporate it increasingly within their works.

As being among the researchers focusing on organizational resilience the most, Burnard and Bhamra (2011, p. 5583) stated, that resilience is included both in individual and organizational responses to problems and disturbances. These responses require both the ability to withstand and the capability to adapt to the changing conditions (Starr, Newfrock and Delurey, 2003, p. 2; Crichton et al. 2009).

This thesis aims to suggest an explanation for how organizations can build a resilience potential through development of certain organizational qualities. The purpose of this research is to theoretically and empirically relate the concept of organizational resilience to its suggested antecedents as organizational learning culture and climate for innovation and explain how they can help to build latent resilience for organizations. In line with this objective, this study attempts to statistically analyze the antecedents of organizational resilience and provide explanation for how these antecedents lead to

resilience. The number of empirical studies within the literature of organizational resilience is relatively low. For example, according to Runyan (2006, p.14), research on resilience for SMEs (small and medium sized enterprises) is relatively underdeveloped. This empirical study will contribute to the resilience literature by providing an explanation for how suggested antecedents lead to organizational resilience. Moreover, this study suggests and investigates the potential moderating effect of dynamic environments on the relation between organizational learning culture and organizational resilience.

To the best of our knowledge, the concept of resilience has not been studied empirically so far by exploring its antecedents with mediation and moderation analyses. Organizational resilience is a relatively new topic within the field of organization studies. Besides, both resilience and learning culture are under-researched areas in Turkey.

In general, objectives of this study are: to explain how organizational learning culture leads to organizational resilience by applying climate for innovation as mediating variable and to investigate whether environmental dynamism affects the magnitude of relationship between organizational learning culture and resilience.

This study aims to reveal that suggested antecedents lead to organizational resilience. An additional variable called as environmental dynamism is added to the model. It is hypothesized that high levels of environmental dynamism can increase the magnitude of the effect of learning culture on climate for innovation or the effect of climate for innovation on organizational resilience.

The reason for choosing this research framework and hypotheses to study is, that there is little emphasis within the literature on providing an explanation for the

relationships between organizational resilience and its antecedents. Explaining the relationship between the suggested variables through a mediation analysis will be important in understanding that relationship better.

This thesis attempts to make several contributions to the field. It is expected to contribute to the debate regarding the antecedents of organizational resilience. The main aim is to explain the effect of organizational learning culture on organizational resilience through the mediation of climate for innovation. The hypotheses in this study are based on the idea that organizational learning culture is significant to understand organizational innovation that it helps the organization to estimate and adapt to the changes within its dynamic environment. “Previous literature on organizational learning culture has emphasized that its effect on performance is mediated by other organizational variables” (Hung, Yang, Lien, McLean, and Kuo, 2010, p. 288).

It is further investigated, whether the magnitude of this suggested relationship changes with a moderating variable as environmental dynamism. Then, quantitative data, collected via a survey administered to mid-level managers of SMEs and larger companies located in Istanbul, is used to test the hypotheses developed in light of the relevant literature. Finally, the results of the study will be highly important due to the context within which the study is conducted. Although there are few studies conducted in Turkey related with organizational resilience, the number of empirical ones focusing on the antecedents is quite scarce. Therefore, this study will give direction to scholars who are interested in studying the factors of organizational resilience in developing economies, like Turkey.

The main research questions of this study are presented on Table 1 below.

Table 1. Research Questions

	Research Questions	Area of Contribution
RQ1	Does higher levels of organizational learning culture lead to more resilient organization?	Organizational resilience
RQ2	Does climate for innovation mediate the relationship between organizational learning culture and organizational resilience?	Organizational resilience
RQ3	Does environmental dynamism moderate the relationship between organizational learning culture and organizational resilience?	Organizational resilience

This thesis consists of six chapters. In Chapter 2, the literature on organizational resilience will be presented, since it constitutes the domain of inquiry. Additionally, the relevant literature on organizational learning culture, climate for innovation, and environmental dynamism will be presented in that chapter. In Chapter 3, theoretical framework and hypotheses development will be discussed alongside the research models. In Chapter 4, the methodology, including data collection procedures, sample characteristics, and the scales employed for measuring the variables of the study will be presented. In Chapter 5, data analyses and hypotheses testing will be provided. Chapter 6 will present the discussion of the findings, highlighting the main contributions of this study, limitations, and concluding remarks.

CHAPTER 2

LITERATURE REVIEW

In this chapter, literature surveyed for each construct are provided. Based on this review, further support for the suggested relationships between variables will be presented in the next Chapter.

2.1 Organizational resilience

The main idea for this study is that organizational resilience has not been studied empirically much within the related organizational literature. Therefore, it is important to empirically study the concept of organizational resilience and being able to analyze the factors that lead to resilience, since it is a very important dimension for organizational success and their sustainability within the business world. There is a large literature supporting this argument, as will be provided below, and as a recent example, Ortiz-de-Mandojana and Bansal (2016, p. 1618) stated, that organizations gain an adaptive capacity due to resilience and this capacity improves organizational viability and contributes to sustainable improvements.

2.1.1 Significance of studying organizational resilience

Resilience in general is considered as very critical and useful for every field it is used within. For example, with regard to resilience of communities, according to Godschalk (2003, p.137), resilience is a significant objective for two reasons; that the vulnerability of social and technological systems cannot be predicted completely and that everything should be better in resilient environments facing disasters than in less flexible

environments experiencing stressful conditions. This is similar for organizations, as well. As stated by Kantur and Say (2012, p. 765), resilience is critical for organizations, as they get prepared for the risky conditions and develop their capabilities to respond effectively and rapidly (Sullivan-Taylor and Wilson, 2009, p. 254; Wilson, Branicki, Sullivan-Taylor, and Wilson, 2010, p. 253).

Kantur and Say (2012) further argued, that literature on strategic management has recently extended beyond the resource based view of the organization that is regarded in terms of 'security towards uncertainty' (Sullivan-Taylor and Wilson, 2009). Accordingly, increasing levels of uncertainty contribute to the significance of resilience considering the survival of organizations. For a sustainable success, organizations need to ensure that they can operate in both good conditions and bad conditions. Resilience is one of the factors for organizations to develop this capacity. Being resilient to overcome potential changes has become increasingly important for companies. It is not enough anymore for organizations to concentrate on change implementation. They need to be capable of preparing for the unforeseeable factors within their environments. According to Seville, Brunsdon, Dantas, Le Masurier, Wilkinson, and Vargo (2008, p.260), managing risky events provide both opportunities and threats to organizations that deal with unexpected conditions many times. Organizations today try to survive in complex environments. Financial crises, political instabilities and other uncertainties can cause the organization many problems. Organizations experiencing the same negative environmental conditions might develop different responses, in that some survive after crises, some fail, and some develop further while dealing with problems (Luo and Shi, 2011, p.2). It is critical for organizations to grasp which factors lead to organizational survival and improvements during crisis times. As stated by Burnard and Bhamra

(2011), organizational environment encompasses many events called as high-impact/low probability events (Sheffi, 2005), as unstable market conditions, economic downturn, dynamic customer demands and regulatory changes. Organizational inefficiencies and lack of capabilities lead to inability to adapt to these similar events. They further argued, that organizations need to try to adapt themselves in order to remain competitive and survive uncertainties in their environments, since organizations always experience risky periods in terms of economic and social dimensions leading to problematic situations. Furthermore, Kantur and Say (2012) similarly stated that the dynamic business environments due to competition, customer demands and complex operations make organizations vulnerable to risky situations. Thus, organizations need to be adaptable and flexible to be able to respond to dynamic conditions, contributing to the term organizational resilience. Resilience has been discussed by many scholars as a concept crucial for long-term survival of organizations in unpredictable and dynamic environments (Doe, 1994, p.22; Horne, 1997, p. 24; Horne and Orr, 1998, p. 30; Mallak, 1998a, 1999; Warner and Pyle, 1997, p.19).

Hamel and Valikanigas (2003, p. 54) argued that organizations should renew their strategies and models in order to experience no big problems and this is the basis of building an organizational resilience. According to Burnard and Bhamra (2011), for sustainable functioning and advantages, it is important to establish organizational capabilities to respond and adapt to environmental changes. When applying only a recovery-based response in times of adverse conditions, organizations may experience inconvenient cycles of changes. However, when facing such turbulent situations, a resilient response can provide the organization to adapt to the risky environment. Researchers argued that resilience provides an explanation to how organizations can

experience desirable results despite several negative conditions (Sutcliffe and Vogus, 2003, p. 96). In line with this, according to Meyer (1982), resilient organizations can absorb the negative effects disruptions within their environments. Vogus and Sutcliffe (2007) suggested that, resilient organizations can better make sense of signals by continuously revising their perspective of operations and conditions. In this way, resilient organizations recognize relevant signals more quickly because of having developed more capabilities for responding to the environment.

On the other hand, as stated by Richtner and Löfsten (2014, p. 137), there are views about resilience that it increases companies' success. For example, Sutcliffe and Vogus (2003, p. 95) explained that resilient organizations are the ones that can have a positive adjustment under challenging conditions. In line with this, Lengnick-Hall and Beck (2005, p. 740) pointed out, that resilient organizations thrive and become better in part, because they have faced and overcome serious challenging times. Therefore, resilience is a capacity that allows organizations to succeed in a dynamic environment (Coutu, 2002, p. 48; Friga et al., 2003). Similarly, studies by a research group called as Resilient Organizations (New Zealand) revealed that there is a clear relation between organizations' resilience and their business performances as profitability, ROI and cash flows (Mc Manus et al., 2007; Mc Manus, 2008). This refers to the importance of studying organizational resilience with regard to the outcomes. Richtner and Löfsten (2014) further argued that the importance of providing resilience in an organization cannot be underestimated. If there is low level of resilience, this leaves little room for employees to fail, recover, and try again.

According to Loch and Schaninger (2007), resilience with execution, alignment, renewal, and complementarity contribute to the organizational health, which is

significant due to the contribution to value creation and competitive advantage (Smet, Loch, and Schaninger (2007, p.4). Similarly, organizational resilience is perceived as a positive behavior that can provide significant outcomes such as improved productivity, reduced turnover or absenteeism (Luthans, 2002, p.696). Similarly, Lengnick-Hall and Beck (2009) argued, that organizational resilience contributes to organizational survival, restoration and transformation. In line with this, Sommer, Howell, and Hadley (2016, p. 178) stated that an organizational crisis can harm individuals and organizations that are not resilient, causing employee dissatisfaction, devastations in the office environments and financial damage (e.g., Pearson and Clair, 1998). Lengnick-Hall and Beck (2005) further argued that resilience is a capacity contributing to the organization's response to environmental change. Besides, Hamel and Välikangas (2003) claimed that resilience helps corporations to revise their business strategies when conditions change. "Failure of organizations to become resilient may lead to loss of their vision, mission, and mandate (Lewis and Loebbaka, 2008; Scott, 2007). Organizations have become more vulnerable to failure thus creating the need for resilience, which is the ability to be proactive and/or reactive in coping with environmental demands and threats (Tarrant, 2010; Cho, Mathiassen and Robey, 2007, p. 26; Stewart and O'Donnell, 2007, p.239; Hamel and Valikangas, 2003) in order to prevent decay and disuse (Scott, 2007)" (Mafabi, Munene, and Ntayi, 2012, p.61).

Having provided an introduction to the concept of resilience, the next step should be to focus more on further explanations for developing resilience. According to Riolli and Savicki (2003, p. 227), "the concept of the resilient organization has gained popularity as a concept that might aid organizations survive and thrive in difficult or volatile economic times. Questions have been raised concerning the characteristics of

such organizations, and how best to help organizations weather threats to their well-being and even to their existence". Therefore, it is important to investigate the organizational factors contributing to the development of organizational resilience as the necessary antecedents and the way they lead to resilience.

2.1.2 Background of the concept resilience

Since the concept of change is not unique to organizations and not used for the first time for organizations, resilience is not specific to organizations and it did not emerge as an organizational concept at first. The term 'resilience' was incorporated within the organization studies from other areas of use. As stated by Linnenluecke and Griffiths (2010, p. 482), "the origins of the English word resilience can be traced back to the Latin word *resilio*, literally translated meaning to jump back (Klein, Nicholls, and Thomalla, 2003). Thus, resilience is generally referring to the capability of a system to recover after undergoing significant disturbance". According to Burnard and Bhamra (2011), being a multidimensional construct, resilience has been regarded within a diverse literature due to being related to several different concepts such as physical properties and supply chain management (Ponomarov and Holcomb, 2009, p. 126). It has its roots in ecology and gained significant attention with the work of Hollings (1973, 2001) and Walker et al. (2002, 2004). In fact, resilience is closely affiliated with the ability of a system to return to its normal conditions after a major change (Gunderson 2000, p.426; Cumming et al. 2005).

Resilience with regard to organizations is a relatively new concept. Quantitative studies on resilience are not much widespread within the organization studies. The first studies examining resilience date back to the late 60s, early 70s of the twentieth century,

for instance, to Holling's (1973) and then Garmezy and Masten's (1986) early works (Padar and Pataki). Lampel, Bhalla, and Jha (2014, p.68) argued, that literature on organizational resilience resulted from the study of organizations having experienced undesirable events such as accidents and disasters, causing negative situations such as damage to property and loss of lives. Somers (2009, p. 13) reviewed the literature in which organizational resilience has been studied. Accordingly, it has been applied to various settings including hospitals (Mallak, 1998), firefighting teams (Weick, 1993, p. 631), business and industry (Coutu, 2002; Hamel and Valikangas, 2003; Horne and Orr, 1998), and high reliability organizations (LaPorte, 1988; Rochlin, 1993; Rochlin, Roberts, and LaPorte, 1987; Weick, Sutcliffe, and Obstfeld, 1999). Somers (2009, p.12) stated that researchers have begun to examine efforts of recovery from the September-11th terrorist attacks from the perspective of resilience (Beunza and Stark, 2004; Freeman, Hirschhorn, and Maltz, 2004, p. 69; Kendra and Wachtendorf, 2001; Tierney, 2003). In fact, providing a definition for resilience has been difficult (Kendra and Wachtendorf, 2001). It has been focused on and debated what constitutes resilience (Klein, Nichools, and Thomalla, 2002). There has emerged different disciplines and units of analysis to be used as a result (Longstaff, 2005; Sutcliffe and Vogus, 2003, p. 96). The different perspectives for studying organizational resilience will be reviewed in this study further below.

Horne III and Orr (1998) explained the emergence of the concept of organizational resilience as coming from studies of engineering and ecosystems, with a focus on the capacities to flex, adapt, and mold to environmental changes. Accordingly, it is a combination of system parts, the interlinkage, and how environmental change is

transmitted throughout the entire system, that lead to the ability to withstand the stresses caused by environmental forces.

Today, the concept of resilience is continuously gaining more attention within the organizational studies. As Kantur and Say (2012) stated as an example, “with an increased focus on resilience in organization studies, consulting practices have been emerging for harnessing resilience within the organizational context (e.g., International Consortium for Organizational Resilience, Global Resilience Network, The Resilience Group, and Center for Organizational Effectiveness)”.

2.1.3 Definitions for organizational resilience

Providing a concrete definition for resilience has proven to be difficult within the literature (Kendra and Wachtendorf, 2001). There are various ideas about resilience means, especially among different disciplines (Sutcliffe and Vogus, 2003).

Cho et al. (2007) stated, that the concept of resilience needs to be differed from the concept of adaptation for theoretical clarification. Organizational resilience should be separated from the related outcomes, otherwise is becomes confused adaptation and its explanatory dimension is destroyed. Reinmoeller and Baardwijk (2005) provided a similar approach, regarding resilience as a process capability, functional to remove barriers to change and to develop competitive advantage (Cho et al., 2007). Borekci, Rofcanin and Gürbüz (2015b, p. 6842) stated that, while having common characteristics, there are many differences between organizational resilience and other related organizational constructs, such as flexibility (Woods cited in Hollnagel et al, 2006, p. 92; Ivanov, Sokolov, and Dolgui 2013; Pal, Torstensson, and Mattila, 2014, p. 413), agility (Powley 2009) and adaptability (Kahn 2005; Kahn, Barton, and Fellows 2013).

Organizational flexibility represent the organizational ability to strategically manoeuver across different conditions (Ghemawat and del Sol 1998; McCann 2004; Woods 2006), while organizational resilience emerges at adverse and unexpected situations (Bhamra, Dani, and Burnard 2011, p. 5379). Besides, there is also differentiation between these concepts with regard to fitting and transforming points of view. Similarly, Richtner and Löfsten (2014, p. 139) stated that organizational resilience is different from flexibility, agility and adaptability, although being very similar. Resilience is triggered specifically by unexpected events. Furthermore, organizational resilience is also different from crisis management, according to Zhang and Liu (2012).

Researchers within the related literature suggested several definitions for organizational resilience. In organizational theory, resilience is generally defined as the ability of the organization to 'bounce back' from a specific situation that leads to vulnerability and requires the organization to respond differently (Lengnick-Hall and Beck, 2003). Similarly, Borekci, Rofcanin, and Sahin (2014a, p. 6) argued that "recognized as the capacity of response (Gallopin 2006), organizational resilience represents the bouncing back and adaptive qualities and capabilities that enable an organization to survive and sustain during turbulent periods". In addition, the concept is regarded as the ability to absorb changes with a minimum level of disruption (Home and Orr, 1998, p.30; Sutcliffe and Vogus, 2003, p. 95). Furthermore, Wildavsky (1988) considered resilience as the capacity to deal with unexpected situations. In this regard, organizational resilience can be defined as a response to a changes or negative conditions and can be regarded as a pattern rather than a prescribed series of activities (Lengnick-Hall and Beck, 2003). According to Seville et al. (2008), resilient organizations can achieve their objectives when facing with adverse situations. This

ability refers to not only reducing the effect of these situations, but also to improving the ability of the organization to handle with crises effectively. To be able to effectively deal with crises, organizations also need to recognize complexity of the system within which it functions and to look for new opportunities even during crisis conditions.

Horne and Orr (1998) defined resilience as a critical quality for organizations to respond effectively to changes that affect the expected pattern of events without any regressive act. "As part of Horne and Orr's whole-system perspective, while resilient individuals within the organization can make a difference, it is the collective actions that create a resilient response (Horne and Orr, 1998). Therefore, when we talk about resilient organizations, we are essentially talking about the directed actions of the organization as a whole as enacted by its members working in concert with each other" (Chewning, Lai and Doerfel, 2012, p. 243). Similarly, Doe (1994, p. 22) argues that resilient individuals perceiving changes as opportunity for further development build up resilient organizations. Hunter (2006, p. 44) defines resilient individuals as being capable of regarding crisis situations as opportunities for organizational growth. Woods (2006) defined resilience as a recognition and adaptation by an organization to overcome the unexpected complexities. Similarly, Starr et al. (2003) stated that resilience is the capacity or ability of organizations to overcome problems and adapt to the unstable and complex environments. In a similar vein, Hale and Heijer (2006) defined resilience as a flexibility and ability to cope with unplanned and unexpected conditions. According to Westrum (cited in Hollnagel, 2006, p. 93), resilience means to prevent something negative from happening, from becoming worse and to recover from something negative after it has occurred. Woods and Cook (cited in Hollnagel, 2006, p. 230) describe resilience as to what extent and to what kind of variation the organization

adapts itself, while Gunderson (2000) also points to this adaptation claiming as toleration of the entity to the disturbance without having to change its own processes and structures at that time. Similarly, Limnios, Mazzarol, Ghadouani, and Schilizzi (2014, p.20) defined resilience as the limit of disturbance the system tolerates. Resilience is defined by Meyer (2009) as the ability to tolerate and even gain from unanticipated changes and environmental conditions, which might otherwise cause negative outcomes. Organizational resilience can be considered as an ability to make positive adjustments during problematic situations, including small interruptions as well as worse crisis conditions (Sutcliffe and Vogus, 2003). Borekci, İşeri Say and Rofcanin (2015a, p. 68) stated that resilient organizations can continue their business operations despite facing problems in their environments and react effectively to these problematic conditions. Chewning et al. (2012) stated as a review, that Weick (1993, p. 629) regarded resilience as ‘coping skills’ with ‘improvisation’, and Kendra and Wachtendorf (2003, p. 39) viewed resilience as ‘attitudes about desirable actions’ and ‘developing new capabilities’. For organizations, resilience means the ability to revise old practices and develop new ones when necessary (Mark, Al-Ani, and Semaan, 2009). Glassop (2007) suggested a definition for organizational resilience based on the assumption that companies with structural reliance (redundancy), organizational capability (requisite variety) and processual continuity (resources) can be considered as resilient organizations (Borekci, Say, Kabasakal, and Rofcanin, 2014b, p. 811). In line with this, based on a similar resource-based view, Schulman (1993, p. 357) regarded organizational resilience as emerging as a result of high levels of slack resources. Kendra and Wachtendorf (2003) defined resilience as an ability to sustain a disruption without being much destroyed, similar to most ideas about resilience as adapting to and

bouncing back after a shocking situation. Valerdi et al. (2008) explained it as an attribute that turns the entity to be less prone to shocks, and more likely to recover from shocks. Similarly, Sundström and Hollnagel (cited in Hollnagel, 2006) stated that resilience is the ability of an organization to adjust effectively to impacts of unexpected events and to deal with and make meaning of disruptive events over a period of time. At this point, Coutu (2002) argues that meaning making is an important feature of resilient organization. Meaning making is about identifying implications within severe conditions and linked with organizational value systems. In a similar vein, according to Gaddum (2004) and Rohmeyer and Ben Zvi (2009), resilience is an ability to quickly adapt and respond to dynamic changes and continue its operations with less impact to its business. Grote (cited in Hollnagel, Nemeth and Dekker (eds., 2006) further defined resilience as a well-balanced control between flexibility and stability allowing the organization to adapt without losing control. Furthermore, Coutu (2002) states that resilient organizations manage to deal with reality without complaining and find out solutions for their survivals. Similarly, Hollnagel (2006) defined as the organization's ability to effectively adapt to detrimental conditions rather than resisting them, in line with Carpenter, Walker, Anderies and Abel (2001, p. 768)'s conception of self-organization and adaptive capacity. Based on these, Nathanael and Marmaras (2006) further defined resilience building as extending the ability of the complex socio-technical system – organization- to adapt or tolerate the effects of change.

Kantur and Iseri-Say (2012**)** regarded organizational resilience as an inside-out transformation with 'renewal and absorption' of any negative conditions by the organization. Accordingly, resilient organizations have four dimensions as; robustness, redundancy, resourcefulness and rapidity. An organization's resilience capacity is

created from interactions among specific cognitive, behavioral, and contextual factors (Lengnick-Hall and Beck, 2005).

Within the organizational studies, there are a various perspectives taken with regard to resilience. Some scholars define resilience within an organizational context (Burnard and Bhamra, 2011; Parsons, 2010, p. 18; Somers, 2009, p.13; Madni, and Jackson, 2009, p. 182; Crichton et al., 2009; Cheng, 2007; Allenby and Roitz, 2005; Robb, 2000, p. 27; Mallak, 1998); others define resilience from a sectorial/industry perspective (Biggs, 2011; McCullough, 2008); and others define resilience from a local community/social perspectives (Cox, 2012; Graugaard, 2012; Coaffee, 2008; Sapountzaki, 2007; Boin and McConnell, 2007; Reich, 2006; Pelling, 2003; Paton, Millar and Johnston, 2001, p. 159; Adger, 2000). In addition, the study of resilience is increasingly linked to future studies (Pasteur, 2011; Smith and Fischbacher, 2009; Alesi, 2008).

Madni and Jackson (2009) listed resilience characteristics as: "physical and functional redundancy, reorganization, human back-up, human-in-loop, predictability, complexity avoidance, context spanning, graceful degradation, drift correction, neutral state, inspectability, intent awareness, learning and adaptation." Linnenluecke and Griffiths (2010) stated, that within organizational and management studies, researchers regarded resilience in terms of a survival when facing negative and unexpected situations resulting from either from severe crises or several small problems (Sutcliffe and Vogus, 2003; Vogus and Sutcliffe, 2007).

2.1.4 Perspectives for studying organizational resilience

According to Ponomarov and Holcomb (2009), organizational resilience has increasingly become a multi-dimensional and multi-disciplinary concept. However, since it is relatively a new construct developed, according to Sutcliffe and Vogus (2003), it is still not much adequately theorized. Within the literature, the broader theories suggested to analyze adaptive capacity are as: learning theories, new systems theory, structuration theory, complexity theory and evolutionary theory. As observed on the definitions provided within the literature, resilience is closely related to the concept of organizational change that generally refers to a macro-level approach, related more with the organization as a whole and its subsystems than with the individual experiences (King and Anderson, 2002).

Several researchers within the literature on organizational resilience have treated the concept differently. Pal et al (2013) considered organizational resilience with regard to three dimensions as resourcefulness, dynamic competitiveness and learning and culture as facilitators and inhibitors. Horne and Orr (1998) stated that their research over a long period of time revealed that there are seven concepts within an organization leading to the development of resilience as: ‘community, competence, connections, commitment, communication, coordination and consideration’. There are different approaches suggested within the literature, however there is a relatively widely shared approach by most of the researchers, that resilience has two ‘basic types’ (Lengnick-Hall, Beck, and Lengnick-Hall, 2011, p.249); one is (recovery based) operational resilience, as the antidote for an unexpected crisis, refers to the necessary strength during such a crisis. The other view is the (renewal based) strategic resilience dynamically protecting the organization from any crisis to occur (Hamel and Valikangas, 2003;

Valikangas, 2010). Further literature review suggests that some scholars view organizational resilience as a capacity, while others view it as an ability or capability, and some others regard as a quality of organizations.

Among several perspectives to study organizational resilience, one is the two-dimensional capacity-process perspective. Accordingly, based on the definitions provided in their works, Wildavsky (1988), Hamel and Valikangas (2003), Coutu (2002), Linnenluecke and Griffiths (2010), Fiksel (2006) and Lengnick-Hall and Beck (2005) regard organizational resilience as a capacity. For example, Linnenluecke and Griffiths (2010) stated the main aspects of organizational resilience to be the capacity to recover as well as to rebound from negative situations both efficiently and effectively. Lengnick-Hall and Beck (2009) used the term 'resilience capacity' as the organizational ability to act effectively in response to uncertain, surprising, and sufficiently disruptive conditions that may threat the long-term survival. Accordingly, resilience capacity helps organizations to recover from disruptions and sustain normal operations, and its high levels can enable the organization for a robust transformation. Similarly, Paries (2006) regarded resilience as an organizational capacity to return to a stable state (previous or a new one), ensuring to continue its operations during or after a major crisis. Lengnick-Hall and Beck (2009) further studied the concept of organizational resilience from the perspective of a capacity. Accordingly, organizational resilience is a capacity preparing organizations to effectively manage unexpected and destroying changes by ensuring the necessary means for recovery and renewal, absorbing crises, enabling to access necessary resources, providing creative alternatives, and contributing to the transformational change (McCann, 2004). Zhang and Liu (2012) further stated, that this capacity perspective focuses on three central features of organizational resilience, as: the

ability of absorbing disturbances and still maintain its functioning; the ability of self-organizing; and the capacity for learning and adaptation in times of change. Mallak (1998), Coutu (2002), Lengnick-Hall et al. (2011), Gallos (2008, p. 355), Sutcliffe and Vogus (2003), Horne (1997), Riolli and Savicki (2003), Rudolph and Repenning (2002, p. 2), Reinmoeller and van Baardwijk (2005, p. 61), Burnard and Bhamra (2011), Coutu (2002), Guidimann (2002, p. 3) Freeman et al. (2004), Jamrog et al. (2006), Robb (2000, p. 27), Balu (2001, p. 149), Gittell, Cameron, Lim, and Rivas (2006, p. 305), Gunderson (2000), Cumming et al. (2005) and Hamel and Valikangas (2003) considered organizational resilience from a point of view regarding the development of an ability or capability to keep up with the changes. Accordingly, organizational resilience is an ability to rebound from unexpected and negative conditions. According to Borekci et al. (2014b), this second view is of organizational resilience is improving and more explanatory, as the organization leverages its capabilities, not only to preserve its current benchmarks, but also to exploit the opportunities in order to sustain its performance. Similarly, Kantur and Iseri-Say (2012) argued, that organizational resilience can be considered as an ability to effectively absorb the changes for its continual presence and also turn them into opportunities.

Positive organizational scholarship literature regards resilience as a process rather than a static quality possessed by that organizations (Sutcliffe and Vogus, 2003). Accordingly, based on this view, resilience should be considered not as a dimension that organizations have, but as a capability for turning negative conditions into opportunities. Therefore, it includes a positive attitude of ‘bouncing back’ and a rapid recovery through an organizational strength without being affected too much by destroying and unexpected events.

In addition, according to Vogus and Sutcliffe (2007), resilience is based on processes and practices leading to competence, efficacy, and growth with capabilities to manage crises and develop strength (Vogus and Sutcliffe, 2003). It is these capabilities that contribute to respond to the challenges of crises and develop informational inputs and readjusted resources. Rebounding from a crisis also strengthens an organization's capabilities for further resilience. The repeating interaction between resilience and its constitutive capabilities prevail that organizations can develop their capabilities so that they recognize more, become flexible, and save themselves from repetitions and status quos.

On the other hand, Horne and Orr (1998) regarded resilience as a quality, while Brodsky et al. (2011, p. 219) viewed it as a process. Sutcliffe and Vogus (2003 in Burnard and Bhamra, 2011) argued, that organizational resilience is based on the organizational processes and resources to develop related organizational competence. In this way, organizational resilience refers to the ability to effectively analyze environmental factors, capability to retain its efficacy, and flexibility to reallocate its resources when facing a negative event. Besides, Beermann (2011, p. 837), Sullivan-Taylor and Wilson (2009, p. 254), Korhonen and Seager (2008, p. 411) and Dervitsiotis (2003, p. 258) considered resilience from an adaptability-based perspective, while Somers (2009) used the term 'resilience potential'. A review by Richtner and Löfsten (2014, p. 138) revealed several perspectives for organizational resilience, as well. Accordingly, Cho et al. (2007) regarded resilience as a capability of process for several levels of analysis. Furthermore, Gittell et al. (2006) stated, that the capacity for organizational resilience is based on the organizational resources such as financial ones. Besides, Richtnér and Södergren (2008) and also Sutcliffe and Vogus (2003) suggested

four types of organizational resources to provide the resilience capacity as: structural, relational, cognitive, and emotional resources. Similarly, Lengnick-Hall and Beck (2005) and Lengnick-Hall et al. (2011) stated that the capacity for resilience is achieved through three organizational dimensions as cognitive, behavioral, and contextual. There is also another classification of two perspectives from prior research with regard to studying resilience: as static vs. dynamic. As stated by Richtner and Löftsen (2014): the static school of thought (e.g. Adler and Kwon, 2002; Dutton, 2003) views resilience as the ability to recover expected performance levels quickly after an unexpected or stressful situation, whereas the dynamic school of thought focuses beyond simple restoration after crises, underlining the ability to continuously grow with change and create new opportunities (e.g. Coutu, 2002; Inkpen and Tsang, 2005; Bhamra et al., 2012).

Denhardt and Denhardt (cited in Reich, Zautra, and Hall, 2010) argued that organizational resilience is more than a one-time response to a specific disaster, it includes a broader array of concepts as organizational adaptability and capacity. The challenges faced by the organization can be regarded as opportunities for change and building adaptive capacity. Lengnick-Hall and Beck (2005) further stated, that the capacity for resilience is developed through contextual, behavioral and cognitive. This capacity, which is learned by the measures an organization's ability to make meaning unexpected situations; to develop ways for facing these events; and to mobilize people, resources, and processes to turn these dimensions into reality (Kobasa, Maddi, Puccetti and Zola, 1985). Furthermore, this capacity can be learned. Madni and Jackson (2009) listed four facets of resilience development as to avoid (anticipation), to withstand (absorption), to adapt (reconfiguration) and to recover (restoration). Similarly, Gibson

and Tarrant (2010, p. 6) described four resilience strategies as resistance, reliability, redundancy and flexibility adding to organizational resilience.

Sutcliffe and Vogus (2003) studied organizational resilience as being a response by the organization to its environment. Burnard and Bhamra (2011) explained Sutcliffe and Vogus's conceptual framework for organizational resilience in their study. Accordingly, having conducted a literature review, Sutcliffe and Vogus (2003) identified, that it is the dynamics leading to organizational resources and competencies in a flexible and submissive way that develop organizational resilience. This organizational ability within an organization's cognitive and structural resources enable to refrain from wrong adaptions and to effectively deal with unexpected problems. Being one of the leading researchers on organizational resilience, Mc Manus et al. (2008) reviewed the approaches and stated, that resilience is traditionally regarded as qualities enabling the individuals or organizations to deal with, adapt to and recover from destroying conditions (Buckle et al., 2000; Horne, 1997; Mallak, 1998; Pelling and Uitto, 2001; Riolli and Savicki, 2003, p. 227)". Based on this approach, this study will focus on the qualities and practices necessary to develop resilience.

2.1.5 Measurement (operationalization) for organizational resilience

Dalziell and McManus (2004) argued, that measurement of resilience is a significant requirement for organizations based upon development methodologies to oversee and evaluate the organization within its environment. As stated by Mc Manus (2008) further, a number of authors have suggested a general systems approach to view organizations in order to assess and measure organizational resilience (Dalziell and McManus, 2004; Horne, 1997; Marais et al, 2004; Riolli and Saviki, 2003, p. 228; Starr et al, 2003, p.3).

Mallak (1998) listed six dimensions to measure organizational resilience as 'goal-directed solution seeking', 'risk avoidance', 'critical situational understanding', 'ability of team members to fill multiple roles', 'degree of reliance on information sources', and 'access to resources'. Accordingly, these dimensions provided method to measure the complex concept of resilience (Somers, 2009, p.12).

Linnenluecke and Griffiths (2010) stated, there are three indicators to mention about organizational resilience as: the amount of change the system can tolerate by keeping the same structure and function, the extent to which the organization is capable of self-organization (vs. lack of organization or vs. organization by external forces), and the extent to which the organization can build learning and adaptation capacities (Carpenter et al., 2001; Nelson et al., 2007). Denhardt and Denhardt (2010) identified the following characteristics of resilient organizations. Accordingly; organizations have 'redundancy': excess capacity which allows the organization to survive even if one component fails"; they are 'robust': promote the mental and psychological health of their employees; they are 'flexible': willing to try new approaches and depart from typical modes of operating; they are 'reliable': they have sound infrastructures to manage and share information and resources; they foster a culture of respect and trust. McManus, Seville, Vargo and Brunsdon (2008, p. 84) used three components of organizational resilience; situation awareness, management of keystone vulnerability and adaptive capacity.

With regard to the requirements for organizational resilience, Kantur and Say (2012) stated, that rather than complaining or avoiding the problem, solving it with a constructive approach and positive regard towards experiences is significant (Mallak, 1998b). This means, that besides an amount of pessimism is necessary to be able to see

the reality (Coutu, 2002), hope and optimism (Flach, 1988) are also critical to develop constructive approaches. Vogus and Sutcliffe (2007) suggested that resilient organizations arrange more of their resources in order to respond to the coming and threatening disruptions. By doing this, they act against the threat rigidity perspective (Staw et al., 1981) supporting the restriction on deployment of resources. In this way, having a refined view of their operations, organizations make timely investments in actions and tools, so that they get less vulnerable and overcome risky conditions without getting much harmed. With regard to this approach of resources, Chewning et al. (2012) stated that resilient organizations can differ from less resilient ones with the way of leveraging its financial, structural, relational, and/or technological resources. Lengnick-Hall and Beck (2005), Gittell et al. (2006), Cho et al. (2007), Richtner and Södergren (2008, p. 259) and Lengnick-Hall et al. (2011) studied resources that organization can use to develop a resilience capacity. Accordingly, there are several sources for organizations to build resilience. They acknowledged resilience as a multidimensional construct with different elements (Richtner and Löfsten, 2014, p. 138). Richtner and Södergen (2008, p. 258) discussed four types of resilience capacity sources as structural, cognitive, relational and emotional, similar to Sutcliffe and Vogus (2003) and Sundgren, Dimenäs, Gustafsson, and Selart (2005, p. 362).

Although there have been empirical studies to measure resilience at organizational level, most of the related literature consists of theoretical works. In fact, there are not many examples of studies focusing on the antecedents of organizational resilience and applied to empirical study to test. However, in order to develop resilience, organizations need to promote certain qualities and it is important to investigate further on these antecedents. It is more important to focus on ‘how’ than ‘what’ for

organizations in order to take the necessary steps to remain flexible and strong, and even stronger, during the positive and negative changes of the dynamic business environments.

2.1.6 Antecedents of organizational resilience

Antecedents of organizational resilience are listed by Pal et al. (2013) as; financial resources, relational networks, material assets, strategic flexibility, operational flexibility, continuous improvements and learning and cultural aspects. When investigating the antecedents of organizational resilience, further literature review reveals that resilience is highly related with several organizational concepts as culture, environment, change and leadership.

Webb and Schlemmer (2006, p. 183) stated, that Hamel and Valikanigas (2003) combined the core competencies concept and the dynamic capabilities framework and called resilience in this way. Accordingly, resilience refers to the ability to continuously invent new strategies and models and capacity of reconstruction when business conditions change. Therefore, their main idea was that organizations need to focus on their resources and also reconstruct them due to the dynamic environment, markets, competition and changing customer preferences.

Marsick and Watkins (2003, p. 137) stated that due to changes in the status quo such as environmental disasters, new regulations, market crises, new demands, learning is triggered within organizations. Organizations can respond effectively when scanning their environments actively. At this point, culture of the organizations plays a role for directing the organization’s focus. Specifically learning culture was determined as the main antecedent, since learning is regarded an important part in the development process

of resilience. Mainly, organizations need to learn from their past experiences, whether positive or negative, in order to be prepared for next experiences, whether worse or better.

In addition, McManus (2008) argued, that innovation is significant for building adaptive capacity that is related with organization resilience.

Below, literature review on all other variables in the suggested model and the hypothesized relationships between them are provided.

2.2 Organizational learning culture

For organizations, it is more important that the organization as a whole adopts a learning approach, rather than only individual learnings that contribute to organizational outcomes (Cerne, Jaklič, Škerlavaj, Aydinlik and Polat, 2012, p. 196). Although individuals within the organization contribute to the organizational learning capabilities, organizational learning is not simply the sum of the individual learning (Fiol and Lyles, 1985, p. 804), but it is the interaction and integration of these learnings (Tran, 2008). In line with this approach, the concept of 'organizational learning' has gained significance within organization studies. Bates and Khasawneh (2005, p. 99) argued that in discussing organizational learning, Watkins and Marsick (1993), Marquardt (1996) and several other organizational scholars referred to a culture supporting the acquisition and distribution of information, sharing of learning, and providing organization-wide recognition for learning. Such a culture was regarded as being critical for the success of learning organizations. Marquardt (2002) stated that in organizational learning culture, learning is considered as significant for organizational success and as an integrated dimension of all organizational factors (Dirani, 2009, p. 191).

By definition, according to Garvin (1993, p. 80), organizational learning culture refers to being capable of creating, acquiring, and transferring knowledge and changing own behavior to reflect the newly acquired insights. Similarly, Bates and Khasaweh (2005) stated, that organizational learning cultures support the acquisition of information and the expansion of learning, and that support continuous learning and contribute to organizational development. Organizations developing a strong learning culture successfully create, acquire and transfer knowledge, while transforming themselves to integrate the acquired knowledge (Skerlavaj, Song, and Lee, 2010, p. 6392).

Reviewing the related studies, Chiva and Alegre (2009, p. 324) suggested that learning for organizations has been generally divided into two approaches: the organizational learning and the learning organization. Accordingly, while organizational learning is mainly about the learning process of an organization, learning organization refers to the factors that facilitate the learning process or the help to become a learning organization (Argyris and Schon, 1996; Chiva, 2004; Tsang, 1997). "Organizational learning is generally defined as a process (Sun, 2003) and a learning organization is defined via the existence of organizational conditions that favor learning per se (Lahteenmaki et al. 2001)" (Chiva and Alegre, 2009, p. 325). Similarly, according to Yeo (2005, p.370), organizational learning signalizes the process of learning while the learning organization points out to a type of organization. Besides; Di Bella, Nevis and Gould (1996) argued that the learning organization is a form of organizations, while organizational learning is the process of learning itself within organizations.

In order to understand the organizational learning culture, it is important to clarify the distinction between learning organization and organizational learning.

2.2.1 Organizational learning

Whether consciously or not, all organizations learn as a fundamental principle for their continuous survival. However, some organizations specifically choose to advance their learning activities by developing necessary capabilities, while others do not make any focused effort and not acquire related habits (Kim in Starkey, Tempest, and McKinley (2004). According to Argyris and Schon (1996), an organization learns when individuals within the organization experience a problem and examine it for the organization. Similarly, Huber (1991) suggested that an organization learns when its unit/s acquire/s knowledge that is considered as potentially beneficial for the organization. Several other authors defined organizational learning as the capacity, or process, of improving practices through advanced knowledge and insight (Argote and Ophir, 2002; DiBella, Nevis, and Gould, 1996, p. 365; Fiol and Lyles, 1985; Salk and Schneider, 2009).

Jerez-Gomez, Céspedes-Lorente and Valle-Cabrera (2005, p.718) argued, that "organizational learning is seen as a dynamic process based on knowledge, which implies moving among the different levels of action, going from the individual to the group level, and then to the organizational level and back again (Huber, 1991; Crossan et al., 1999)". A definition for organizational learning is suggested by Berthoin Antal and Dierkes (cited in Berthoin, 2004), as incorporating processes of acquiring, interpreting, using, and maintaining knowledge within organizations in order to expand their cognitions and behaviors, so that the organization is well equipped to perceive, respond and even shape the changes in its environment. Similarly, Glynn, Milliken and Lant (1992) defined it as a process of understanding and managing organizational experiences. Tran (2008, p. 288) stated that organizational learning is defined in various works as a process of applying new knowledge and insight for better enhanced

performance (Fiol and Lyles, 1985; Huber, 1991; Simon, 1991) Accordingly, the process begins with the acquisition of information either from internal or from external sources through benchmarking or collaborative strategies. This information adds to the organizational knowledge base and is integrated within the information systems, routines and procedures that build the organizational memory so that the knowledge sustains. Thus, organizational learning involves processes of information dissemination and interpretation by its members.

Fiol and Lyles (1985) defined organizational learning as the change in organizational knowledge (Lyles, 1992, 1998). In organizational learning, there is acquisition, creation, dissemination, and application of knowledge with the ability to acquire diverse information and to share insights so that knowledge can be used (Fiol, 1994) and the ability to develop insights, and to make meaning of past and future operations. Kim (2004) referred to the model proposed by Daft and Weick that explains the learning process of an organization as scanning, interpretation, and learning. Accordingly, scanning involves looking for data within the environment and interpretation means the process developing concepts related with prior understanding of the environment (Starkey et al., 2004). Learning, on the other hand, is having knowledge about the interaction between the organization and its environment and also the actions taken based on that knowledge. Similarly, Lipshitz, Popper and Oz (1996, p. 295) suggested, that organizations learn with related mechanisms, institutionalized structural and procedural configurations helping organizations to collect, analyze, store and use information relevant to the organizational effectiveness (Popper and Lipshitz, 1995).

2.2.2 Learning organization

An organization that facilitates its members' learning while increasingly transforming can be regarded as a learning organization (Koffman and Senge, 1993, p. 9). Emami, Moradi, Idrus and Almutairi (2012, p. 11) defined the learning organization as referring to the principles, characteristics, and systems that make the organization learn collectively. Alipour and Karimi (2011) considered learning organizations are as living organisms. Accordingly, these organizations need a shared sense of identity and a fundamental common purpose (M. J. Marquardt, 2002). Islam, ur Rehman Khan, Norulkamar Ungku Bt. Ahmad and Ahmed (2013, p. 325) referred to Senge (1990)'s definition of a learning organization as one where individuals continuously expand their capacities for goal achievements, where new ways of thinking are encouraged and individuals are constantly learning together. Dirani (2009) stated that the learning organization continually expands its capacity to create own future (Ortenblad, 2002, p. 218) and it refers to strategies that are established to improve organizational learning. Pedler, Burgoyne, and Boydell (1991) further stated that a learning organization should consciously devote to the facilitation of individual learning in order to sustain its transformation and its context. As a result of the learning behavior by the employees, a learning organization emerges (Senge, 1990; Honey and Mumford, 1992; Marquardt and Reynolds, 1994).

According to Song and Chermack (2008, p. 426), a learning organization is systematically organized to scan for information in its environment, to create information by itself, to encourage individuals to transform information into knowledge and to disseminate that knowledge within the organization so that new insight is achieved (Jensen, 2005) Accordingly, it is the learning factors that encourage individuals

learning and knowledge transformation to promote continuous organizational learning processes within the organization. Slater and Narver (1994, p.22) defined a learning organization as continuously acquiring, processing, and disseminating knowledge about market, technologies, and business based on experience, experimentation, and information received from outside sources. In modern organizations, Zagoršek, Dimovski, and Škerlavaj (2009, p. 146) stated, information acquisition mostly happens through employee training rather than collecting information from inside and outside of the organization. Moreover, Gephart, Marsick, Van Buren and Spiro (1996, p. 37) defined a learning organization as being able to learn and to adjust to the changes as a response. Accordingly, that organization can develop necessary functions required by changes within environment or by poor performance. Watkins and Marsick (1993) explained the learning organization as transforming continuously and enabling total employee involvement in collaboratively conducted and collectively accountable change. Learning organization has an environment in which organizational learning is established so that knowledge processes have a meaning at collective level (Confessore and Kops, 1998, p. 367).

According to Drew and Smith (1995, p. 25), a learning organization should be viewed as a concept, whose employees learn intentionally shared processes for providing, retaining and leveraging sustainable learning to improve organizational performance significantly by monitoring and improving it. Joo, Song, Lim, and Yoon (2012, p.81) further stated, based on several studies (Argyris and Schön, 1978, 1996; Confessore and Kops, 1998, p. 367; Garvin, 2000; Jensen, 2005), that a learning organization has an environment in which organizational learning is so structured that teamwork, collaboration and innovative practices are highly encouraged.

Dirani (2009) stated, that the learning organization is defined by Ortenblad (2002) as one continually increasing its capacity to create (Ortenblad, 2002). Accordingly, it develops strategies which serve to enhance organizational learning.

Watkins and Marsick (1993) defined the learning organization as one that learns continuously and transforms itself and is characterized by employee involvement in a process of collectively conducted, accountable change about shared values. Similarly, Ortenblad (2002) suggested four perspectives with regard to the learning organizations as: the old organizational learning perspective focusing on the storage of knowledge in the organizational mind, a learning at work perspective with the idea of an organization where individuals learn at the workplace, a learning climate perspective seeing the learning organization as one that facilitates the learning of its employees, and a learning structure perceptive, regarding the learning organization as a flexible entity. Accordingly, seven dimensions of organizational learning suggested by Watkins and Marsick's (1993) cover all of these four perspectives.

2.2.3 Cultural perspective for learning

Hult, Hurley, and Knight (2004, p. 431) argued, that Huber (1991) defined a concept of 'learning orientation' as the development of new knowledge that potentially influence behavior through its values and beliefs within the organizational culture. Moreover, learning leads to new behaviors (Argyris and Schon, 1978; Fiol, 1985). Sinkula (1994, p. 36) referred to this manifestation of learning as enhanced knowledge, recognizing that the ability to apply knowledge entails a greater level of learning (Hult et al., 2004). Alipour and Karimi (2011) considered the learning organization as a system (Bui and Baruch, 2010) serving to create an organizational culture that is capable of adapting to

change and continually learning in order to improve by creating desired prospects (Senge, 1990; Watkins and Marsick, 1993, 1996). Similarly, Sugarman (2001) stated that; from the outside, a learning organization can be recognized by its agility in changing how it relates to the external world and how it conducts its external operations. From the inside, the learning organization can be recognized by the culture in which learning from challenges and mistakes is central. Indeed, Worrell (1995, p. 351) described the learning organization as a culture that emphasizes individual development, correction of old ways of thinking and makes purpose of the organization understood and supported by all its members. Accordingly, the application of such an approach helps the members to recognize how the organization really works and to work together openly to achieve a shared objective. As stated in Lipshitz et al. (1996), Senge (1990) and Cook and Yanow (1993) conceptualized organizational learning as a cultural rather than a cognitive concept. Furthermore, according to Kululanga et al. (2001, in Liao, Chang, Hu, and Yueh, 2012, p. 55), organizational learning helps to build organizational learning culture and the learning culture enhances the organizational learning continuously.

Deriving from these perspectives, it becomes necessary to make clear, how organizational culture is defined within the context of learning. According to Bates and Khasawneh (2005), organizational culture refers to the common expression of organizational behavior (Kopelman et al., 1990) and it highlights the shared values, beliefs and assumptions by the organizational members. As argued by Lucas and Ogilvie, 2006), culture influences and directs how an organization functions and is significant for all organizational activities (Salk and Schneider, 2009).

According to Bates and Khasawneh (2005), the learning organization literature also highlights the role of organizational culture, that it refers to a consensus developed within the organization about the importance and use of learning for creative ways to pursue organizational objectives. Gupta et al. (2000; in Lopez, Manuel Montes Peón and José Vázquez Ordás (2004, p. 96) stated that organizational learning requires high level of commitment by the organization as a whole, pointing to a culture based on the desire to improve and learn and shared by all of the organizational members. Further Song and Chermack (2008, p. 425) stated that the learning organization refers to a foundational culture for taking advantages through improvements on organizational performance. With regard to this relationship between organizational learning and culture, Senge (1990, in Lopez et al., 2004) had a sense of culture when arguing that the objective is to provide institutions which are able to anticipate changes and change when required, by encouraging communication between all organizational members, removing hierarchical barriers, committing themselves to innovate actions and assuming the new values. Liao et al. (2012) further stated, that organizational culture can be regarded as the most significant input to efficient knowledge management and organizational learning, because organizational culture identifies values, beliefs, and work systems which may encourage or impede both learning and knowledge sharing (Leonard, 1995; Alavi and Leidner, 2001; Gold, Malhotra and Segars, 2001).

Nafukho, Graham and Muyia (2009, p. 37) argued that organizational culture affects how individuals work together, adapt to changes, and grow as a learning organization (Lucas, 2006; Cohen and Levinthal, 1990; Szulanski, 1996). As stated by works of Ahmed, Loh, and Zairi (1999, p. 427) and Lucas and Ogilvie (2006, p. 10), organizational culture determines how the organization learns given, as it not only

shapes the interaction between individuals and affects the transfer of knowledge, but also how new ideas are handled within the organization (Salk and Schneider, 2009). Similarly, Salk and Schneider (2009) referred further to the arguments by Lipshitz et al., (2002), Popper and Lipshitz (1998) and Ellis et al. (1999), that specific values as transparency, accountability, validity, and issue orientation positively affect organizational learning. Accordingly, Popper and Lipshitz (1998) further stated that these four values contribute to a culture promoting and improving sustainable organizational learning or an organizational learning culture.

2.2.4 Learning culture

Several studies in the organizations literature (e.g. Campbell and Cairns, 1994, p.12; Marquardt, 1996; Hill, 1996, p. 19; Pedler, Burgoyne, and Boydell, 1997; Ahmed, Loh and Zairi (1999); Maccoby, 2003, p. 59; Marsick and Watkins, 2003; Conner and Clawson, 2004) suggested, that organizational culture is a necessary condition or a facilitating dimension for ensuring organizational learning. For this reason, it is significant to emphasize the concept of organizational learning culture, which is the suggested antecedent variable in this study.

Song and Kolb (2009, p. 531) reviewed several studies (e.g. De Fillippi and Ornstein 2005; Easterby-Smith and Lyles 2005; Gilley and Maycunich 2000; Marquardt 1996, 2002) and argued that the continuous organizational learning process is key to having an organizational learning culture. As stated by Rebelo and Gomes (2011, p. 178), the cultural orientation towards learning is called as learning culture and it is the type of culture that a learning organization should have. Organizational learning culture mainly supports the acquisition of information and sharing of learning, and reinforces

continuous learning for organizational improvement. This culture is reflected by organization-wide values and beliefs about the significance of learning and its implementation (Bates and Khasawneh, 2005). Learning culture is defined by Harvey, Palmer and Speier (1998, p. 344) as one supporting experimentation, promoting constructive objections, acknowledging failure and promoting an open dialogue. They further stated, that in all organizational cultures in which learning occurs, the process of organizational learning proceeds at three levels as individual, group, and organization (Crossan et al., 1994). Accordingly, mostly, learning starts at the individual level, then develops to the group level, and finally extends to the organization as a whole. Skerlavaj, Stemberger, Skrinjar, and Dimovski (2007, p. 348) defined organizational learning culture as a set of norms and values about an organization (Schein, 1992), supporting systematic approaches for higher-level organizational learning through stages of information acquisition, interpretation and other related behavioral and cognitive changes (Huber, 1991; Garvin, 1993; Dimovski, 1994). As similarly stated in Kalyar and Rafi (2013, p. 1137), organizations with a well-built learning culture are successful at creating, acquiring, and communicating knowledge (Huber, 1991). Accordingly, these organizations successfully modify their behavior after the new knowledge and insight gained.

Watkins and Marsick (1993) provided seven dimensions for organizational learning culture, such as creating continuous learning opportunities, encouraging teamwork and empowering people towards a collective vision. Bishop et al. (2006) suggested a framework of organizational learning culture and identified four features of a ‘learning-supportive culture’; as easy access to knowledge resources, collaborative working, and encourage and reward the acquisition and sharing of knowledge.

Furthermore, Gephart et al. (1997) defined three dimensions of organizational learning culture; as facilitating knowledge sharing and transferring, sharing a common goal, and encouraging independent thinking and trying new ideas. Rebelo and Gomes (2011) explained organizational learning culture as making learning one of the organization's main concerns, considering all stakeholders, encouraging responsible risk, getting prepared to recognize mistakes and learn from them, promoting communication and cooperation, and dissemination of knowledge.

In addition to these various definitions and explanations, example organizations that have transformed into learning cultures are listed by Harvey et al. (1998) as Home Depot, 3M, Southwest Airlines, Levi Strauss, Motorola, and Honda.

2.2.5 Measures for assessing organizational learning culture

There are mainly two approaches to study organizational culture; these are the typological approach and the trait approach. Accordingly, researchers adopting the trait approach believe that culture can be measured as a multidimensional set of values and practices integrated by an organization (Hofstede, Neuyen, Ohayv and Sanders, 1990, p. 290).

In this study, the scale developed by Watkins and Marsick (1997) was applied, which was very often used within the literature. Watkins and Marsick (1997)'s framework for the learning organization identified seven dimensions for learning organizations as: creating continuous learning opportunities; promoting inquiry and dialogue; encouraging collaboration and team learning; establishing systems to capture and sharing learning; empowering people to have a collective vision; connecting the organization to the environment; and using leaders who model and support learning

(Joo, 2010, p. 71). Definitions for Watkins and Marsick's scale items are provided by Marsick and Watkins (2003), as:

- Create continuous learning opportunities: Learning is designed into work so that people can learn on the job; opportunities are provided for ongoing education and growth.
- Promote inquiry and dialogue: People gain productive reasoning skills to express their views and the capacity to listen and inquire into the views of others; the culture is changed to support questioning, feedback, and experimentation.
- Encourage collaboration and team learning: Work is designed to use groups to access different modes of thinking; groups are expected to learn together and work together; collaboration is valued by the culture and rewarded.
- Create systems to capture and share learning: Both high- and low-technology systems to share learning are created and integrated with work; access is provided; systems are maintained.
- Empower people toward a collective vision: People are involved in setting, owning, and implementing a joint vision; responsibility is distributed close to decision making so that people are motivated to learn toward what they are held accountable to do.
- Connect the organization to its environment: People are helped to see the effect of their work on the entire enterprise; people scan the environment and use information to adjust work practices; the organization is linked to its communities.
- Provide strategic leadership for learning: Leaders model, champion, and support learning; leadership. (p. 135).

2.2.6 Relevance and significance of organizational learning culture

The idea behind choosing learning culture as an antecedent to explain organizational resilience can be explained as Dodgson's (1993, p. 379) idea that the concept of the learning organization is gaining significance among large organizations as they attempt to develop structures and systems which can be more adaptable and responsive to change. Moreover, there are many studies focusing on relationships between learning culture and its suggested potential outcomes; as Bates and Khasawneh (2005), Egan,

Yang and Bartlett (2004, p.282), Yang (2003, p. 153), Lopez et al. (2004), Reardon (2010, p. 202), Skerlavaj et al. (2007), and Thompson and Kahnweiler (2002, p. 273). Why organizational learning culture is an important dimension to study organizational resilience is, that learning is one of the determinants of competitiveness is highly accepted within the literature (Garratt 1987). Lopez et al. (2004) stated, that most people agree, that the organizational ability to learn faster than competitors is a significant source of competitive advantage in current dynamic business environment (Stata and Almond, 1989, p. 32; Senge, 1990; Ulrich, Von Glinow, and Jick, 1993, p. 54; McGill and Slocum, 1993; Slocum et al., 1994; Nevis et al. 1995).

According to Hung et al. (2010), the increasing attention paid to organizational learning denotes the knowledge-based view of the organization that underlines the sustainable competitive advantage deriving from the knowledge. Hannah and Lester, 2009 in Alipour and Karimi, 2011 further stated, that organizations even cannot survive and develop themselves with their old knowledge and need to learn in order to be able to struggle with the dynamic and challenging situations. Barney (1986) discussed the potential for organizational culture to serve as a source of sustained competitive advantage. He concluded that organizations without the required cultures cannot engage in activities to modify their culture and result in sustainable improved performance, because their modified culture will be neither rare nor 'imperfectly imitable' (Lopez et al. 2004). Hung et al. (2010) referred to Zollo and Winter (2002, p. 340)'s conceptual framework that regards an organization with a continually learning culture as a key foundation for building dynamic capability. According to Zollo and Winter (2002, p. 339), a dynamic capability is a learned pattern of collective activity through which the

organization systematically creates and develops its processes for the sake of improved effectiveness.

Furthermore, Jones (2000) put emphasis on the significance of organizational learning for organizational performance (Skerlavaj et al., 2010, p. 6391). Similarly, Lopez et al. (2004) stated that organizational learning has a positive impact on organizational performance. Cerne et al. (2012) also suggested that several works (Pérez López, Montes Peón, and Ordás, 2004; Škerlavaj and Dimovski, 2006) revealed the positive influences of organizational learning on better business performance. Similarly, Joo et al. (2012) stated that several studies (Egan, 2008; Ellinger, Watkins, and Bostrom, 1999, p. 109; Marquardt, 2004; Song, 2008, P. 266; Yang, Watkins, and Marsick (2004, p. 33) revealed the positive influence of organizational learning culture on organizational performance improvement and knowledge creation. Song and Kolb (2009) argued, that the organizational learning culture can be regarded as the main cultural aspect that encourages continuous organizational learning and the collective responses improving organizational performance (Carroll, Rudolph, and Hatakenaka 2005; Gilley and Maycunich 2000). Specifically, several studies (e.g. Watkins, Yang, and Marsick, in Torraco, 1998, p. 544) suggested that there is a relation between the learning organization and financial performances of the organizations A study by Ellinger, Ellinger, Yang and Howton (2003, p. 164) even revealed, that the dimensions of the learning organization by Marsick and Watkins explained 10 per cent of the changes in financial performance of organizations.

On the other hand, Marsick and Watkins (2003) stated, that organizational learning is significant for employees due to frequently relocating to new jobs and hoarding knowledge for themselves (Nafukho, et al., 2009).

2.2.7 Antecedents of organizational learning culture

Alipour and Karimi (2011) stated that, according to Watkins and Marsick (1993), changes in organizations, the dynamic nature of work, changes in the workforce and changes in how people learn are factors forcing organizations to develop into learning organizations. The organizational learning process is significantly dependent on a culture that encourages organizational members to share insights and ideas (Castiglion, 2006 in Mirkamali, Thani and Alami (2011, p.142). As argued by Harvey et al. (1998), successful transformation to a learning organization requires important shifts from the existing culture that affects communication flows, organizational roles, and information sharing (McGill and Slocum, 1994). All organizations learn at various levels, however, learning conforms to the culture effective in an organization, and that culture either triggers or prevents the learning activity (Nevis et al., 1995).

2.3 Organizational climate for innovation

As stated in Sarros, Cooper and Santora (2008, p. 148), "research has called for organizations to be more flexible, adaptive, entrepreneurial, and innovative to effectively meet the changing demands of today's environment (Orchard, 1998; Parker and Bradley, 2000; Valle, 1999)". Organizational climate for innovation is used as the suggested mediating variable in this study. The reason for choosing 'climate' for innovation is that any concepts for climate represents the perceptions of the respondents, mid-level managers in our case, on the specified concept. Thus, using 'climate' is important and helpful to measure respondents' perceptions with regard to innovation.

2.3.1 Organizational climate

Litwin and Stringer (1968) defined organizational climate as a set of measurable properties of the work environment, perceived by the people working in this environment and regarded to influence their behavior. Organizational climate is the manifestation of the culture, while different beliefs and symbols give rise to different individual interpretations about the organization (Denison, 1996, p. 623). It is the expression of how shared values in an organization are reflected on the behavior of the employees (Landy and Conte, 2004). Bates and Khasawneh (2005) stated that climate can be described as a meaningful explanation of the work environment (James and Jones, 1976; Jones and James, 1979) or, an individual psychological situation affected by organizational conditions as culture, structure, and managerial behavior (Burke and Litwin, 1992).

On the other hand, Ekvall (1996) regarded organizational climate as a feature of the organization, a combination of attitudes, feelings and behaviors that explain organizational life and exists independently of the perceptions and understandings of the members of the organizations. It is considered as an objective organizational reality (Ismail, 2005, p. 642). Several scholars discussed this approach suggested by Ekvall. King and Anderon (2002) stated, that Ekvall (1996) makes a useful classification in explaining climate. Some writers regard it as very similar to with culture by including values, beliefs and norms within the climate, while some others separate the two by providing a narrower definition of climate. Moreover, for some writers, climate is in the perceptions of the organizational members, deriving from their interactions (e.g. Schneider, 1975); while some others, including Ekvall himself, view it as an objective attribute of the organization. (King and Anderson, 2002). Isaksen and Akkermans (2011,

p. 167) further argued, that Ekvall (1991) defined climate as the observed pattern of behavior and feelings that characterize organizational life, while organizational culture reflects the more fundamental dimensions of the organization including values, beliefs, assumptions, symbols and rituals. Based on this differentiation, culture provides the foundation for patterns of behavior that can be easily observed and described. And it is these patterns that help to establish the organizational climate. Accordingly, climate is what members of the organization experience, while culture reflects more organizational values.

Similarly, Panuwatwanich, Stewart, and Mohamed (2008) stated, that within an organization, a social psychological process emerges in the form of climate, which is regarded as a determinant of motivation and behavior (Kozlowski and Doherty, 1989). In order to study an organizational climate, social psychological factors that constitute the climate for innovation should be concentrated on. In addition, Denison (1996) evaluated research on organizational climate and culture over ten years and at the end defined organizational culture as the deep organizational structure rooted in the values, beliefs, and assumptions shared by its members. Denison (1996) regarded organizational culture as a longer-term and deep construct, while, organizational climate is regarded as being more changeable, and including environmental dimensions as perceived by organizational members (Isaksen and Akkermans, 2011). On the other hand, Ostroff, Kinicki, and Tamkins, (2003) noted, that only a few studies with ‘climate-for’ approaches have been conducted empirically.

2.3.2 Organizational innovation

While there are several climates with regard to organizational studies, climate for innovation was decided as the main focus of this study, due to the relevance of innovation with the suggested concepts as learning and resilience. In fact, innovation has been considered as a very critical phenomenon within the organizational studies for a long time, since its importance for organizational success has been recognized. In the volatile and dynamic business environment of the 1990s, the need to innovate has become even more significant. Canadian expert on the new economy, Nuala Beck (1992) stated that 'to innovate is to survive', while Tom Peters (1990, 1991) warned companies about to 'get innovative or get dead' (Leavy in Starkey et al., 2004).

As stated by King and Anderson (2002), business leaders have continuously encouraged the industries respond to competitive forces by becoming necessarily more innovative. Skerlavaj et al. (2010) argued that the current risky and volatile environment requires that organization develop innovations in order to keep or increase their competitiveness. The capacity to innovate is one of the most important factors that highly affect business outcomes (Hurley and Hult, 1998, p. 43). Innovativeness provides organizational flexibility to choose among different options to meet changing customer demands sustainably for organizational survival (Banbury and Mitchell, 1995). Similarly, Cavalcante, Kesting, and Ulhøi (2011 in Kalyar and Rafi, 2013) stated that innovative products provide organizational opportunities in terms of growth and expansion into new fields and also help organizations to maintain a competitive advantage.

Innovation with regard to organizations is defined by West and Farr (1990) as the introduction of new ideas, processes, products or procedures, imagined to benefit the

organization. According to Woodman, Sawyer, and Griffin (1993, p. 299) organizational innovation is the production of useful and value-adding new services/products by an organization. The literature on organizational innovation highly concentrates on the role of culture as encouraging due to the role organizational culture has in organizational learning and change (Bluedorn and Lundgren, 1993, p. 7). Damanpour (1991, p. 561) defined product innovation as the introduction of new products and services meeting user or market need and the OECD (2004) provided a description as bringing the new product or service successfully to the market. In addition, Writers as Kimberly (1981) have argued that innovation needs to be defined as the changes that have substantial effects on the organization applied. (King and Anderson, 2002).

There emerged a shift in the 1980s and 1990s in the search for antecedents of successful innovation, away from features of structures and individuals towards less tangible features of organizations such as climate and culture specifically. In fact, there is no doubt that an explanation of organizational climate and culture can help further to make sense of innovation and change (King and Anderson, 2002). In line with this, it has been stated, that the organizational climate is a determining factor in explaining the innovation capacity of an organization (Kanter, 1983; Amabile, Conti, Coon, Lazenby and Herron, 1996, p. 1158; Patterson et al., 2005, p.383).

Various empirical studies revealed that an organization's climate for innovation is a significant determinant of innovation. Organizational innovation highly depends on a climate that supports innovation (Isaksen and Akkermans, 2011). Organizations with an innovative work climate are regarded to have better innovation results. An employee's perception of climate impacts the degree to which creative solutions are supported and implemented in an organization (Kheng, June, and Mahmood, 2013, p.

47). In their study, Bain, Mann and Pirola-Merlo (2001, p. 58) worked with scientists and technologists in Austrian companies having major R&D works and discovered a positive relationship between climate for innovation and indicators of innovation. Furthermore, research revealed that innovative organizations seem to demonstrate good organizational climate. An innovative climate of an organization refers to one that emphasizes rewards, allows autonomous work, focuses on training and provides feedback to employees (Hartmann, 2006a, p. 568). According to the definition by Hoff et al., (2009), innovation climate means the dimensions of the organizational climate which encourage innovative practices or inhibits obstacles to innovations. Furthermore, King, Chermont, West, Dawson, and Hebl (2007, p.634) argued, that an organizational climate for innovation can be regarded as the degree to which organizational norms and values emphasize innovation (West and Anderson, 1996, p. 682; West and Wallace, 1991, p. 304). In addition, organizational climate for innovation has been considered as an important concept in diagnosis for organizational development or improvement efforts (Ekvall, 1987; 1996; Isaksen and Ekvall, 2007; 2010) (Isaksen and Akkermans, 2011).

Common recommendations for climates supporting innovation include openness to change, risk taking, tolerance of debate and disagreement, and playfulness provided by the organizations (e.g. West, 1990; Nyström, 1990; Ekvall, 1996) (King and Anderson, 2002). Mumford and Gustafson (1988, p. 31) stated that even when employees are capable to innovate, their willingness for this depends largely on the related climate. According to Wang, Rode, Shi, Luo, and Chen (2013), members of high innovation climate organizations believe in their workplace values and provide more instrumental rewards for creativity members of less innovative climate ones. In other

words, when members perceive such supportive practices, they believe that their organization encourages innovation and feel motivated to innovate (Ahmed, 1998, p. 34; Hartmann, 2006b, p. 161). A cultural perception has become a prerequisite to innovative behavior (Panuwatwanich et al., 2008, p. 412).

Baer and Frese (2003) advocated a required climate for innovation, describing it as a climate for initiative and psychological safety. Accordingly, organizations create climates where employees feel safe to propose new ideas and openly discuss issues so as to improve organizational innovations. In this way, employees can identify and deal with organizational problems depending on that climate for initiative. Montes et al. (2004) further argued, that top managements need to appreciate employees who develop innovative ideas for the organizational improvement. In fact, as suggested by García-Morales, Lloréns-Montes and Verdú-Jover (2008, p. 302), individual innovation by employees is largely affected by the perceived support within their organization (Mafabi, Munene and Ahiauzu, 2015, p. 569). Furthermore, similarly in their study on climate for innovation, Sarros et al. (2008, p. 148) stated, that the support and encouragement an organization provides to its employees about taking initiative and innovative approaches can influence the actual innovation in that organization (Martins and Terblanche, 2003; Mumford and Gustafson, 1988). They further believed, that climate for innovation is a useful agent when it is difficult to get direct measures of innovation from several organizations and industries.

2.4 Environmental dynamism

Environment is a key factor for discussing organizational resilience, as resilience is also a response by the organization to the environmental changes. There are critical

differences in environmental features affecting organizations. Environmental dynamism, which is the rate and the instability of environmental change, is one of these most relevant characteristics (Child, 1972, p. 165; Dess and Beard, 1984, p. 55).

Environmental dynamism is the outcome of several factors, such as a rise in the number of organizations within an industry or an increase in the rate of technological change and its diffusion within the industry (Simerly and Li, 2000, p. 33). Also according to the dynamic capabilities framework, an organization needs to constantly reconfigure, gain and dispose its resources and capabilities to meet demands of the dynamically changing environment (Webb and Schlemmer, 2006, p. 182). Environmental dynamism has been specifically regarded as one of the strongest determinants of environmental uncertainty (Duncan, 1972, p. 316; Bourgeois, 1980; Joshi and Campbell, 2003). Frequently changing organizational environments are considered as being dynamic by several scholars (Aldrich 1979; Achrol and Stern 1988). It usually includes customer, competitor, and technology sectors of the environment (Jaworski and Kohli 1993) and therefore is mainly defined in terms of unpredictable changes in products, technology and market demands (Miller and Freisen 1983, p. 4; Zhou and Benton 2007).

In this study, environmental dynamism is added as the suggested moderating variable. The reason for including this variable is explained in detail in the following chapter within the hypotheses development.

CHAPTER 3

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

In this chapter, theoretical framework for the hypotheses is provided by referring to the related literature support for all suggested relationships. It is aimed to provide a theoretical explanation for the relationship between 1) organizational learning culture and organizational resilience, emphasizing the mediating effect of climate for innovation and 2) the role of transformational leadership on the antecedents as organizational learning culture and climate for innovation is determined. Following the explanations, the hypotheses based on literature and theory will be presented and the research models will be provided in this chapter.

3.1 Theoretical framework

In this thesis, the theory of dynamic capabilities is rested upon, besides the Resource-based view (RBV) of the firm. Resource-based view (Penrose, 1959) of the firm emphasizes the importance of the resources for firms as assets contributing to organizational success. As Barney (1991) argued, organizational resources include all assets, capabilities, processes, information, knowledge, etc. controlled by that organization, enabling the organization to perceive and implement strategies that improve the organizational efficiency and effectiveness.

The RBV is appreciated as one of the most influential frameworks for understanding strategic management and related areas (Barney et al. 2001). Its principal development was between years 1984 and the mid-1990s. Among the most significant studies on RBV are the contributions of Barney (1986, 1991), Rumelt (1984, 1987),

Dierickx and Cool (1989), Conner (1991), Peteraf (1993), Conner and Prahalad (1996), Kogut and Zander (1992), and Teece et al. (1997) to consider. According to RBV, companies do not compete on new products, but rather on the capacity to develop new products (Prahalad and Hamel, 1990). As stated by Wang and Ahmed (2007, p. 33), RBV is complementary to main theoretical frameworks in strategic management, which either give equivalent attention to internal strengths and weaknesses or to external opportunities and threats (Andrews 1971; Ansoff 1965; Learned et al. 1969), or exclusively emphasize external competitive forces (Porter 1980).

Entering the 1990s, dynamic capabilities, emphasizing evolutionary nature of resources and capabilities, emerged to improve the RBV (Eisenhardt and Martin 2000; Helfat 1997; Teece et al. 1992, 1997; Zahra and George 2002). RBV has been extended by Teece et al. (1997) as a dynamic capability to build and reconfigure internal and external competencies to acknowledge the changing environments (Hung et al., 2010). Similarly, scholars of the dynamic-capability view extend RBV to examine the influences of dynamic environments (Helfat and Peteraf, 2003). According to several scholars (Deeds, Decarolis and Coombs, 2000; Eisenhardt and Martin, 2000; Makadok, 2001; Teece et al., 1997; Wu, 2010; Zahra, Sapienza and Davidsson, 2006; Zollo and Winter, 2002; Zott, 2003), in dynamic and fast-changing environments, dynamic capability view explains firm competitiveness more effectively than RBV (Lin et al., 2014). As noted by Golgeci and Ponomarov (2013, p. 605), dynamic capabilities theory is an advancement of RBV (Katkalo et al., 2010) with a specific focus on innovation that is significant in turbulent and uncertain environments (Teece, 2007).

The underlying assumption of dynamic capabilities theory is, that organizations need to have capabilities, such as to make rapid changes and offer products and services consistently and quickly (e.g. O'Regan and Ghobadian, 2004) (Mafabi et al., 2012). Eisenhardt and Martin (2000) regarded dynamic capabilities as the antecedent organizational routines by which managers integrate strategic resources in order to generate value-adding strategies (Grant, 1996; Zott, 2003). They extended the definition of dynamic capabilities to include the processes using resources, such as processes to integrate and reconfigure resources in order to meet environmental changes. Scholars have since integrated the two literature areas (Wang and Ahmed, 2007, p. 32). For example, Makadok (2001) argued that these two approaches to business strategy will be possibly joined together to explain further issues.

With regard to our current study, the reason for referring to resource-based view and dynamic capabilities view as the theoretical ground to base on is that both theories include learning and innovation capabilities as part of the organizational resources contributing to the competitive advantage and organizational success. According to Wilden, Gudergan, Nielsen, and Lings (2013, pp. 79-80), dynamic capabilities are agents of change enabling organizations to evaluate what changes to the resource and capabilities is necessary to remain competitive in changing environments. Similarly, Gnizy, Baker and Grinstein (2014, p. 481) regarded the absence of dynamic capabilities as threats that prevent organizational ability to maintain their performance in changing environments. Lawson and Samson (2001, p. 380) argued, that dynamic capabilities emphasize management capabilities and resources, including product and process development, R&D, human resources and organizational learning. Ambrosini and

Bowman (2009) further stated, that scholars need to be encouraged further to integrate the dynamic capabilities perspective into other complementary fields, such as innovation, knowledge management, organizational change and development and organizational learning. The success of organizations is built mainly upon organizational learning and thus, learning is the key for organizational competitive advantages to sustain (Ho, 2008, p. 1236).

In this study, both climate for innovation and organizational learning culture can be regarded as sources of dynamic capability that contribute to the organizational success in terms of resilience. Both innovation and learning culture are supported within the literature of the theory as part of dynamic capabilities. As stated in Golgeci and Ponomarov (2013), dynamic capabilities serve as primary means of responding to the challenges created by the dynamic environment and are identified by flexible innovation, along with the management capability to effectively coordinate competences to gain competitive advantage (Teece and Pisano, 1994). As a key mechanism for organizational growth and renewal, innovation is implicitly central to the theory of dynamic capabilities and dynamic capabilities is well suited to the study of organizational innovation with regard to external changes (Lawson and Samson, 2001; Wang and Ahmed, 2007). According to Hult et al. (2004), one major component of the organizational success is the extent of the innovative capability (Hult et al., 2004). In fact, referring to the organizational capacity to make innovation (Hult et al., 2004; Hurley and Hult, 1998), innovativeness can be considered as a dynamic capability driving actual innovation (Azadegan and Dooley, 2010; Christensen et al., 1998). As stated by Golgeci and Ponomarov (2013), innovativeness refers to the willingness to face changes and new

challenges and is a dynamic capability that can leveraged to succeed in dynamic environments.

Specifically, learning and learning culture have been addressed as part of organizational dynamic capabilities. With regard to learning, Barney (1991) suggested in his study, that as a dynamic capability, organizational learning constitutes a basis organizations need to implement strategies to take advantage of environmental opportunities and also to avoid threats (Santos-Vijande, López-Sánchez, and Trespalacios, 2012, p.1081). As stated in (Chien and Tsai, 2012, p.435), Zott (2003) argued that learning improves dynamic capabilities by increasing organizational experience and knowledge. In their study, Zollo and Singh (2004, p. 1236) demonstrated that organizational learning strongly and positively influences organizational performance, which can be explained through dynamic capability theory. In a similar vein, Ciborra and Andreu (2001, p.75) argued that organizational core capabilities are intertwined with organizational learning. Several other works (e.g. Bapuji and Crossan, 2004; Kao and Lee, 1996; Kandemir and Hult (2005, p. 431) suggested that organizational learning may be the only organizational capability for creating sustainable superior customer value, as learning provides as a dynamic capability a continuous adaptation to changing environmental requirements (Santos-Vijande et al., 2012).

On the other hand, organizational culture can be considered also as a source of dynamic capability. As stated in Fiol (1991, p.193), a pragmatist view of culture (Smircich, 1983) assumes that culture is a key to organizational productivity and profitability, and focus on culture as a tool for achieving a desired organizational

outcomes. Miron, Erez, and Naheh (2004) noted, that organizational culture is commonly regarded as a source of sustainable competitive advantage for organizations (Sarros et al., 2008). Therefore, besides learning, culture itself is an asset for organizations.

While learning and culture are considered as a dynamic capability for organizational sustainable success, specifically learning culture can also be studied under this theory. With regard to organizational learning culture as a dynamic capability, in their study, Hung, Yang, Lien, McLean, and Kuo (2010) tested how high-technology companies can build dynamic capabilities by creating organizational learning culture (Nieves and Haller, 2014, p. 225). Similarly, Zollo and Winter (2002) regarded learning culture as a key foundation for building dynamic capability. Based on the RBV, Wilkens, Menzel, and Pawlowsky (2004, p.12) noted in their empirical study, that organizational learning culture is both a resource and a dynamic capability for a firm. Hung et al. (2010) similarly stated, that organizational learning culture applies its influence through enhancing dynamic capability via innovation. Accordingly, there are many studies (e.g. Egan et al., 2004; Ellinger et al. 2003; Yang et al., 2004) suggesting that organizational learning culture can improves organizational learning and in this way improves organizational performance.

Regarding organizational learning culture and climate for innovation as capabilities for organizational resilience is also supported with dynamic capabilities theory. To remain dynamic with regard to outside factors and improve inside processes is part of the understanding of resilience, as explained in the related review. In line with this, Mafabi et al. (2012) stated that organizations adjusting and renewing their

processes and structures build their capacities and capabilities through learning (Garcia-Morales et al., 2008) to adapt (Großler et al., 2006) to the changing environment. This is what builds the organizational resilience. Accordingly, a resilient organization receives knowledge from the environment to realize necessary innovations for becoming resilient (Garcia-Morales et al., 2008). In fact, some scholars (e.g. Li-Hua, 2007; Deselnicu et al., 2007) further argued that resilient organizations need to have the capability to design new processes that are necessary for efficiency and effectiveness (Mafabi et al., 2012). According to Ambrosini and Bowman (2009), it is these dynamic capabilities that allow organizations to effect the environmental changes by renewing their resources. This is parallel to the dynamic capabilities theory, as suggested by Teece et al. (1997), that organizations need to develop and renew their capabilities to remain competitive. Rindova and Kotha (2001) argued, that dynamic capabilities are reflected through adaptive capabilities as flexibility and alignment of resources, and continuously changing strategic needs (Wang and Ahmed, 2007, p. 33). And these adaptations and alignments are regarded in some empirical studies (e.g. Alvarez and Merino 2003; Camuffo and Volpato 1996; Forrant and Flynn 1999) as being critical to organizational survival. As Teece et al. (1997) suggested, organizations having high levels of adaptive capability also possess dynamic capabilities (Wang and Ahmed, 2007, p.33).

That some studies on dynamic capabilities theory (e.g. Capron and Mitchell, 2009; Nielsen, 2006) have not referred to the organizational resilience (Mafabi et al., 2015) leaves more room for this study to explain the antecedents of resilience within the framework of dynamic capabilities theory as a contribution.

On what basis and why these specific relationships are suggested can be explained from the literature surveyed on the suggested variables of the model. When trying to explain an organizational concept, it is critical to consider culture and climate, as organizational climate and culture have a major explanatory power due to being deeply rooted in their history and in the personal experiences of organizational members (King and Anderson, 2002).

Keeping this approach of climate and culture, when investigating the antecedents of organizational resilience in this study, several arguments are recognized to be referring to the concepts of organizational learning and an innovation approach. For example, Seville et al. (2006) stated that organizational resilience can be related to several softer, less tangible organizational concepts as culture, leadership and vision. Therefore, resilience is considered as being improved with specialized knowledge of individuals and also collectively in an organization to respond effectively to unexpected and challenging conditions (Pal et al., 2014). Bell (2002) regarded leadership and culture as among the five principles of organizational resilience. Moreover, according to Pulley (1997, p. 2), resilient organizations need develop systematic ways to manage and store their knowledge, which is the currency of the new environment, and the ability to leverage its intellectual capital will be the main organizational competitive advantage. This emphasizes integrating the organization's key competencies and culture with new technologies so that their learning is sustained.

Since organizational resilience is regarded as a developed capacity to cope with crisis times, both negative crises and positive changes, learning can be an important factor for developing resilience. And learning should be integrated as a culture, since

resilience is a continuing capacity and making it a ‘culture’ might add sustainability to the learning itself. Having a strong culture is an important factor for organizational resilience. Borekci et al. (2014a) related organizational culture and resilience in their study, as well. Existing literature on organizational resilience suggests that learning and crisis management are highly related (Roux-Dufort, 2000; Simon and Pouchant 2000; Stern, 1997). In line with this, organizations that try to become resilient need to accumulate knowledge resources that are useful for improving organizational adaptation and competitiveness (Mafabi et al., 2012). As stated by Burnard and Bhamra (2011), processes and dynamics that create and maintain resources contribute to organizational resilience (Vogus and Sutcliffe 2007). Positive organizational terms enable a resilient response to challenges (Gunderson 2000, Walker et al. 2002).

Innovation climate developed in an organization is an indicator for an established learning as an organizational culture and also a factor for developing organizational resilience. As an example, Akgün and Keskin (2014, p. 6920) suggested and studied the relationship between organizational resilience capacity and product innovativeness and performance. Similarly, according to Leavy in Starkey et al. (2004), the concept of learning is influencing current perspectives on strategy mainly through its relations with innovation. A better understanding regarding the organizational learning culture and innovation would provide researchers with additional information concerning factors that contribute to learning, innovation, and significant outcomes related to performance (Egan et al., 2004; Sitlington and Marshall, 2011) (Kalyar and Rafi, 2013).

In fact, many researches have revealed a causal relationship between organizational learning orientation and performance and also new product development indeed, however these inter-relationships have not been modeled. An effect of learning

orientation on organizational performance through product innovation is suggested, as learning orientation is expected to facilitate learning that leads to technologically driven changes in product types (Baker and Sinkula, 1999, p. 297). Furthermore, Sarros et al. (2008) very clearly explained the driving point of this study by including the related variables in their argument. Accordingly, many researches pointed to the organizational need to become flexible, adaptive, entrepreneurial, and innovative to effectively meet the changing demands of the new environment (Orchard, 1998; Parker and Bradley, 2000; Valle, 1999), beside the leadership to direct such changes (Bass, cited in Ciulla (ed., 1998), p. 172; Brown, 1992; Kotter and Heskett, 1992; Prajogo and Ahmed, 2006; Schein, 1992). However, despite this attention, there has been little empirical study of these theoretical relationships between these main concepts contributing to such change strategies, as organizational culture and organizational innovation.

To sum, theoretical motivation of this study is derived from previous research on dynamic capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000; Zollo and Winter, 2002) and the resource-based view, to argue that organizational learning culture and climate for innovation build a dynamic capability for organizations to contribute to the resilience capacity in order to be prepared for the unexpected changes without being destroyed.

3.2 Hypotheses development

3.2.1 Relationship between organizational learning culture and organizational resilience

The main relationship concentrated on in this study is the effect of organizational learning culture on organizational resilience. Why organizational learning culture is

suggested as an antecedent of resilience is, that culture is commonly accepted as a factor shaping organizational characteristics and practices.

Organizational culture has been studied largely within the resilience research. Several studies have incorporated types of organizational culture in explaining resilience (Sawalha, 2015, p. 348). In their study, Madni and Jackson (2009) stated, that resilience means cultural adaptability to wide variety of external disruptions. Similarly, Parsons (2010) explained organizational resilience as a capability and suggested that resilience and culture are highly related. This issue was also emphasized by Hiles (2011) and Daskon (2010, p. 1083), noting that resilience derives from a combination of culture and attitude, process and framework. Furthermore, Paton et al. (2000) described resilience as an on-going process of self-righting which relates to an individual's or an organization's culture that has the potential to correct itself after traumatic experiences. In fact, developing an organizational culture through effective sharing and aligning of values makes the organization and its employees aware, committed and active to respond at necessary conditions (Pal, 2013). King and Anderson (2002) stated, that organizational culture is regarded as symbols, rituals and myths pervading the organization and thus, managing change requires the manipulation of these symbolic elements of culture, and their communication to the employees. Related to this cultural aspect of resilience, Mitroff (1988) presented in a study, that organizational culture is one of the determinants for the organizational responses to crises (Wang, 2008). In addition, resilient organizations assume that they can easily deal with disruptions, and also try hard to develop their related capabilities for this. This means, that resilient organizations have the belief that they are imperfect but can improve over time by learning from experiences (Vogus and Sutcliffe, 2007). Similarly, Bell (2002) referred to

organizational culture among five principles of organizational resilience by regarded organizational resilience in terms of a specific culture. Accordingly, the resilient organizational culture provides a strong sense of purpose that ties the organization together and makes all goals aligned. Such a resilient culture is enables a high level of trust between employees and management. Furthermore, Judge and Douglas (2009, p.637) concerned among eight distinct dimensions of organizational capacity for change concerning issues of human capabilities, informal organizational culture and formal organizational systems. According to Wang (2008, p. 427), it is very significant that an organization in crisis ensures procedures, structures, and cultures that will improve organizational memory. Here, organizational memory is largely related to organizational learning culture.

According to Seville et al. (2008), organizational resilience is often more related with less tangible and softer concepts as culture, leadership, vision and specifically ways to achieve a common goal such as good communication, relationships within the organization, trust, a shared vision and priorities across the organization, especially at crisis times. Thus, resilience building also refers to reviewing the organizational culture and recognizing the strengths and weaknesses brought by the culture at times of crisis. Organizational change researchers also easily accepted the view, that organizational culture needs to be managed as a means of managing change and that specific types of culture are desirable for this (King and Anderson, 2002).

There is also a widely accepted understanding in the learning organization literature that learning at the organizational level is a very necessary determinant for the success of organizational change (Ulrich et al. 1993, p. 54; Garvin 1993; Lundberg 1995, p. 14; Hendry 1996, p. 624). Cyert and March regarded the organization as an

adaptive system that learns from experience. An organization changes and adapts its behavior in response to the environment on the basis of specific rules (Kim in Starkey et al., 2004). Hung, Lien, Yang, Wu and Kuo (cited in Egan, 2011, p. 217) argued, that organizational learning can facilitate new methods and procedures for organizational change as a strategy (Morgan, Katsikeas, and Appiah-Adu, 1998). Similarly, according to Di Bella et al. (1996), organizational learning enhances the organizational capacity to improve performance based on experience. Developing these learning processes enables organizations to adapt to change by acquiring the knowledge and skills needed to resolve problems and increase productivity (Stewart and O'Donnell, 2007, p.240). Appelbaum and Gallagher (2000, p. 42) referred to some common organizational patterns promoting two issues as collective learning and change of organizational structure in response to change in environment.

Liao et al. (2012) further stated, that organizational learning has an important role in ensuring that the knowledge base is continuously improving and updated in order to efficiently respond to changes within its competitive environment (Lemon and Sahota 2004). Stead and Smallman (1999, p. 2) stated that what organizations should focus when analyzing their behaviors before and during crises is what Senge (1996) named as `generative learning'. This means, that organizations improve their capability by looking for new ways to consider their environment. According to Rijal (2010), learning organizations are adaptive, flexible and improve organizational performance by encouraging individual learning (Islam et al., 2013).

Leavy (in Starkey et al., 2004) stated, that the dynamism of learning, with its emphasis on change, is particularly relevant in today's business environment, where strategies need to be developed in conditions of transition and change and where the

static concepts of strategy as positioning and fit are becoming less appealing (Stalk et al., 1992; Hamel and Prahalad, 1993).

Harvey et al. (1998) stated that the learning organization has been presented as a structure to acknowledge the change facing today's businesses. A learning culture provides managers with the analyses necessary to improve their organizations to satisfy the stakeholders. Dirani (2009) viewed the learning organization in terms of a culture, in which learning from experiences and problems is critical. Lau and Ngo (2004, p. 689) asserted, that it has been suggested in the organizational culture literature, that a developmental culture underlines flexibility and change and focuses on creativity, and adaptation and growth (Quinn, 1988; Quinn and Spreitzer, 1991). Accordingly, these organizations value the change and their employees become more satisfied (Lau, Tse, and Zhou, 2002). As stated by Wang (2008), organizational learning culture is critical, since it encourages risk taking (McGill and Slocum, 1993) and incorporates the principles of the learning organization (Senge, 1990), action learning (Marquardt, 1999), transformative learning (Mezirow, 1991), and critical reflection (Argyris and Schon, 1996), which help organizations to recognize and prevent disruptions (Lagadec, 1997) and learn from unexpected negative experiences (Stern, 1997).

Organizational learning culture enables an organization to anticipate and adapt to the dynamics of its changing environment (Bates and Khasawneh, 2005). Sundgren et al. (2005, in Richtner and Löfsten, 2014) similarly stated, that presence of positive regard provides the foundations for a learning culture. Besides, this positive regard was considered by Richtner and Löfsten (2014) as a source of organizational resilience. This would imply a possible relation between organizational culture and resilience.

Walker et al. (2006) put emphasis in collaborative organizational learning as being critical in dealing with vulnerabilities and for managing resilience by developing an adaptive behavior to see the environmental dynamics and to generate knowledge. Such organizational mindfulness (Weick et al. 1999, Weick and Sutcliffe, 2007) is significant for being crisis-prepared and proactive in recognizing early warnings and for knowledge management to develop cognitive strategies for resilience building (Boisot and Child 1999). Similarly, it was argued (Freeman 2004, Freeman et al. 2004) that resilience is portrayed by cognitive capabilities, mindfulness, sense-making and self-responsibilities as components for building learning capabilities and an impression of purpose for visionary organizations (Collins and Porras 1994) (Pal, 2013). As further stated by Nilakant, Walker, Van Heugten, Baird, and De Vries (2014, p.79), organizational adaptation is dependent on continuous learning in dynamic environments. Organizations need to establish a culture of openness, teamwork and shared vision to promote this learning (Sinkula, 1994, p. 36; Sinkula, Baker, and Noordewier, 1997, p. 306). Besides, Denhardt and Denhardt (in Reich et al., 2010) stated, that recent theoretical developments on human relations, specifically current ideas about organizational culture, organizational learning and emotional intelligence contributed to the creation of management principles that can support and provide organizational resilience. Furthermore, redundancy, which is one of the factors of organizational resilience, is viewed by some scholars as part of an organizational culture, which rewards experimentation and innovation (Bourgeois, 1981) (Staber and Sydow, 2002, p. 409).

H1: Organizational learning culture significantly predicts organizational resilience

3.2.2 Relationship between organizational learning culture and organizational climate for innovation

Sarros et al. (2008) argued, that organizational culture is an important element of climate. Similarly, Moran and Volkwein (1992) suggested that climate affects the shared knowledge incorporated within an organization's culture. Therefore, organizational climate can be seen as the expression of fundamental cultural routines that arise in response to possibilities within the organizational environment. This view confirms the 'climate-for' innovation approach (Ostroff et al., 2003) as a necessary part of organizational culture studies, in line with Glisson and James' (2002) assumption, that culture and climate need to be studied together at the same time. King and Anderson (2002) stated, that there have been relatively less studies exploring the effect of culture and climate on organizational innovativeness compared to the focus provided to leadership and structural variables.

There are also some studies referring to the importance of organizational culture to increase creativity and encourage innovative behavior (Amabile et al., 1996; Hivner, Hopkins and Hopkins, 2003, p. 82; Steele and Murray, 2004, p.316; Hartmann, 2006b). According to Zagorsek et al. (2009)'s argument, several researches have revealed, that organizational learning influences competitive advantage (Jashapara, 2003), financial and nonfinancial performance (Bontis et al. 2002; Škerlavaj, 2004; Dimovski, 2005; Jimenez-Jimenez, 2006), collaborative benefits in strategic alliances (Simonin, 1997), the unit cost of production (Darr et al., 1995), and innovation (Llorens et al., 2005). In addition various other studies (Egan, Yang, and Bartlett, 2004; Ellinger, Ellinger, Yang, and Howto, 2003) revealed that cultures promoting organizational learning facilitate organizational learning, and as a result, improve organizational performance. Lynn

(1999) further argued that organizational culture influences organizational learning capabilities and directs it to change and innovate (Liao et al., 2012). Edlund (2001) stated, based on the resource-based view, that the knowledge resources of an organization should be used to establish and apply new and strategically valuable organizational processes and/or competences (Mafabi et al., 2012).

Climate for innovation is suggested as the mediating variable in this study, since it is assumed as being highly affected by the learning culture and also highly related to organizational resilience. According to Patel and Patel (2008, p. 238), exploration of the relationship between culture and innovation is not new. For example, recent research by Tellis et al. (2006) has linked organizational culture to innovation. In addition, other works by Reece (2007) and Baumgartner (2007) have highlighted the importance of the organizational culture in identifying the success or failure of innovation in variable areas. Bates and Khasawneh (2005) similarly argued, that culture and climate are clearly related concepts, and they are believed to be most useful in explaining an organizational construct when used together (Schneider and Rentsch, cited in Hage, 1988). The values and beliefs of an organizational learning culture are based on factors as creativity and innovation, and managerial practices facilitating change and innovation. These values and beliefs function to establish climates related with the acquisition of new knowledge and skills and are reflected in beliefs about the value of change and improvement through learning, and such climates are called as learning transfer climate (Holton et al., 1997) (Bates and Khasawneh, 2005). Furthermore, Lau and Ngo (2004) stated that organizations having developmental culture can experience improvements on new product development as innovation is a significant factor for establishing a developmental culture (Lau and Ngo, 2004).

Furthermore, Ahmed (1998) noted, that organizational culture is an important determinant for innovation, with facilitating effects on innovation in terms of successful implementation and maintenance. Hult et al. (2004) similarly argued that organizational learning orientation occurs primarily at the culture level and is possibly be mediated by factors directly affecting business performance. Accordingly, organizational learning and innovativeness are separate constructs that are interrelated. Cerne et al. (2012) further referred to the studies emphasizing the importance of organizational culture in managing innovativeness (Jassawalla and Sashittal, 2002; Khazanchi, Lewis, and Boyer, 2007), however argued that exception the research of Skerlavaj et al. (2010), there has been not much investigation relating organizational learning and organizational culture, and analyzing the effect of organizational learning culture on innovativeness.

There is a significant literature (Argyris and Schön, 1978; Stata and Almond, 1989, p. 32; Sinkula, Baker, and Noordewier, 1997; Calantone, Cavusgil and Zhao, 2002, p, 517; Akgün, Byrne, Lynn and Keskin, 2007, p. 797) suggesting that organizational learning would add to the innovation capacity of an organization and it is very important to develop efficient learning of capabilities and competencies for innovation. Aragón-Correa, García-Morales and Cordón-Pozo (2007, p. 350) also argued, that several studies in the organizational learning literature (e.g., Calantone et al., 2002; Tushman and Nadler, 1986) suggested a positive relationship between organizational learning and innovation. Similar to the scholars on learning organization, Watkins and Marsick (1993) referred to learning as being the prerequisite of organizational innovation by arguing that innovation is the promise of sustainable learning (Fatima Sta Maria and Watkins, 2003, p. 492). Knowledge-based assets and organizational learning capabilities are considered by Jantunen (2005, p. 338) as being

significant for organizational innovation activities. As noted by Cerne et al. (2012), several scholars asserted in their studies (Akgün, Keskin, Byrne, and Aren, 2007; Alegre and Chiva, 2008; Calantone et al., 2002; Chipika and Willson, 2006; Darroch, 2005; García-Morales, Lloréns-Montes, and Verdú-Jover, 2007; Helfat and Raubitscheck, 2000; Hung, Lien, Yang, Wu, and Kuo, 2011), that organizational learning would improve the organizational capacity of innovation and that organizations can only innovate if they establish an efficient learning of their competencies, and capabilities. In line with this, Shipton and colleagues (2005) explored, that organizations having mechanisms to facilitate learning were more innovative than organizations having fewer mechanisms (Salk and Schneider, 2009). Tran (2008, p. 288) also stated, that innovation and organizational learning are closely interrelated. In a similar vein, Hurley and Hult (1998) argued, that organizational learning leads to innovation. In their study, Hung et al. (2011) referred to the studies (Nonaka and Takeuchi, 1995; Teece, Pisano, and Shuen, 1997), claiming that new knowledge acquisition is the main resource for innovation.

As Tran (2008) noted, literature on organizational learning and innovation has investigated how learning affects innovation (Ng, 2004; Teo et al., 2006) or creates environments promotive for learning so that innovation can prosper (Fenwick, 2003; Ismail, 2005). Some other scholars (e.g. Polley and van de Ven, 1996; Weerawardena et al., 2006) have studied how the need for innovation drives the advancement of learning capabilities. Aragon-Correa et al. (2007) argued, that organizational learning facilitates creativity (e.g., Sanchez and Mahoney, 1996), stimulates new knowledge and ideas (e.g., Damanpour, 1991; Dishman and Pearson, 2003). According to Tran (2008, p. 298), innovation is the creative embodiment of organizational learning, as learning helps the

organization to use its existing knowledge and resources in productive ways. Slater and Narver (1995) suggest that learning orientation is directly related to new product success. Calantone, et al. (2002) have demonstrated a linkage among learning orientation, innovation, and performance in the firm (Aragon-Correa et al., 2007). Leavy (in Starkey et al., 2004) further argued that learning within the strategy field is related with innovation at several levels. Accordingly, organizational learning affects innovative capability, as organizations want to improve their ability to introduce technologies to their market at the right time. Further, Dodgson (1993) stated that learning is regarded as a purposive factor to improve competitiveness and innovativeness in uncertain environmental conditions, as higher levels of environmental uncertainties lead to greater need for learning.

Salk and Schneider (2009) referred to the argument suggested by several studies (Argyris and Schon, 1978; Argote et al., 2003; Bapuji and Crossan, 2004; Daft, 1995; Ellis and Shpielberg, 2003; Lahteenmaki et al., 2001; Shipton et al., 2005), that positive outcomes as improved performance, efficiency, adaptability to change, and innovation are obtained as a result of organizational learning. According to Hung et al. (2011), organizations facilitate new product development by emphasizing learning and encouraging employees to collect and share market data. At this point, if an organizational learning culture results in innovation and performance improvement, then, beside the production and sharing of knowledge, organizations need to make efforts at transferring the knowledge to help the organization function more effectively,. And this underlines a significant factor to link organizational learning culture and innovation as the need for a supportive climate for learning application (Bates and Khasawneh, 2005).

Leavy (in Starkey et al., 2004) stated that today many companies like Intel Corporation and General Electric develop their strategies by regarding it as a process of learning and innovation. Similarly, Mc Gregor et al. (2006) provided the example of IBM, as it was able to transform itself from manufacturer into a premier business service consulting company by discovering that the current market was maturing while the new one was growing. To do this, the company needed to learn to restructure and refocus its capabilities on the new challenge (Tran, 2008). Such conversion of technical ideas into new business can be based on the understanding of the interactions between the different organizational knowledge and organizational technologies and learning process (Guadamillas, et al., 2008).

Besides, learning culture can be regarded as part of a broader construct, developmental culture, which is also highly related to innovation climate. It has been suggested in the organizational culture literature, that a developmental culture highlights flexibility and change by focusing on growth, creativity, and adaptation (Quinn, 1988; Quinn and Spreitzer, 1991). Organizations with a developmental culture positively influence new product development, as innovation is a main factor for developmental culture (Lau and Ngo, 2004). Slater and Narver (1995) suggested, that learning orientation is directly related to new product success. Calantone et al. (2002) also have presented a linkage among learning orientation, innovation, and organizational performance (Hult et al., 2004).

Organizational learning culture can be regarded as an important facilitator of organizational innovation. Slater and Narver (1995) suggested that learning orientation is directly related to new product success, which is part of the innovation. The study by Kandemir and Hult (2005) evaluated learning culture and associated it with

organizational innovation. It was found by several other scholars that learning culture poses a positive impact on innovativeness and innovation capacity (Banu Goktan and Miles, 2011, p. 537; Rowley, Baregheh, and Sambrook, 2011, p. 75; Skerlavaj et al., 2010).

H2a: Organizational learning culture significantly predicts climate for innovation.

3.2.3 Relationship between organizational climate for innovation and organizational resilience

Hurley and Hult (1998) argued, that innovation capacity is an important factor for the success of organizational performance. Innovation is largely held within the literature of organizational resilience. Chewning et al. (2012) further stated that applying multiple technologies together can facilitate to enable recovery following a crisis.

Hamel and Valikangas (2003) stated that organizational resilience requires innovation with respect to organizational values, processes and behaviors that favor perpetuation over innovation. Similarly, Rousseau and Wade-Benzoni (1994 in Lau and Ngo, 2004) found, that a strategy which stresses innovation would include a strong culture that rewards results, focuses on short-term performance, provides training, and emphasizes the relational issues and teamwork. Thus, a certain type of culture is needed to effect changes in organizations, so that entrepreneurial and innovative behaviors could be supported.

Skerlavaj et al. (2010) stated, that business and technological changes are challenging and intimidating organizational sustainability (Drucker, 1999). Organizations are constantly under competitive pressures and forced to update themselves with new innovations. That innovation is the key to ensure the future growth

and survival of organizations is universally accepted (Tran, 2008). As stated by Kalyar and Rafi (2013), being innovative is critical for organizational long-term success and survival (Deshpande, Farley, and Webster, 1993). Organizations with greater innovation capacity can easily develop the capabilities necessary to improve organizational performance and a sustainable competitive advantage (Calantone et al., 2002; Jansen, Curseu, Vermeulen, Geurts, and Gibcus, 2011, p. 735). Similarly, Skerlavaj et al. (2010) stated, that innovations are critical for the organizational long-term survival and growth and have a significant role in the organizations' future to follow the speed of markets changes (Santos-Vijande and Alvarez-Gonzalez, 2007). Furthermore, organizations actively collecting new ideas, practically supporting their implementation and providing feedback on their consequences will become more efficient, productive and adaptive to the changing needs of the business environment (King et al., 2007).

Li-Hua (2007) and Deselnicu et al. (2007) stated that resilient organizations need to develop the capability to design new processes that are regarded necessary for efficiency and effectiveness. In their theoretical work, Hamel and Valikangas (2003) noted, that innovation is a prerequisite for developing organizational capacity to deal with environmental changes. This is in line with the study by O'Donnell (2006), stating that organizational resilience is developed via innovation. In fact, some organizations are not able to build dynamic capabilities to adjust their processes and structures (Chaharbaghi et al., 2005; Nelson, 2003) and this affects the organizational capacity to adapt (Mafabi et al., 2012).

On the other hand, with regard to the climate dimension of the concept of innovation, as suggested in this current thesis, Isaksen and Akkermans (2011) stated, that climate is affected by various factors and can be regarded as an intervening variable

which influences organizational processes that, in turn, affect the overall organizational productivity (Kuenzi and Schminke, 2009). By its very nature, climate is a significant concept to explain organizational performance and change (Koene, Vogelaar and Soeters, 2002; Schneider, Brief, and Guzzo, 1996) (Isaksen and Akkermans, 2011). Mafabi et al. (2015) further stated, that there is a need for a proper environment for organizational revivals to be successfully implemented for organizational adaptation and competitiveness.

H2b: Climate for innovation significantly predicts organizational resilience.

Besides, redundancy, which is one of the factors of organizational resilience, is viewed by some scholars as part of an organizational culture, which rewards experimentation and innovation (Bourgeois, 1981 in Staber and Sydow, 2002). Hamel and Valikangas (2003) stated that organizational resilience requires innovation with respect to organizational values, processes and behaviors that favor perpetuation over innovation. Moreover, findings of a study by Borins (2001, p. 499) revealed, that organizational support in the public sector, such as awards and recognition, can provide an impetus to innovation and probably also subsequent resilience. Based on the suggested effect of learning culture on climate for innovation and of climate for innovation and resilience, therefore, this study hypothesizes, that the relationship between organizational learning culture and resilience is mediated by climate for innovation.

H3: Climate for innovation mediates the relationship between organizational learning culture and organizational resilience.

3.2.4 The moderating effect of environmental dynamism on the relationship between organizational learning culture and organizational resilience

From an organizational approach, adaptation problems can be regarded as caused by environmental dynamism, especially challenging in case of unexpected changes. Under these conditions, organizations need to adapt quickly in order not only survive but also to respond effectively and efficiently to the environmental challenges. And this can be achieved via strategic actions taken towards the development of dynamic capabilities, as the dynamic capability theory suggests and articulated in this study before.

Dodgson (1993) argued, that organizational learning is triggered both by environmental changes and organizational inside factors. Egan et al. (2004) stated that the organizational culture and environment can affect the types and extent of learning-related events. Several studies revealed that higher levels of environmental uncertainty increase environmental dynamism (e.g., Duncan, 1972; Tung, 1979, p. 675; Milliken, 1990, p. 48). Dess and Beard (1984) characterized dynamic environments as the ones with high rates of change and unpredictability. Jansen, Van Den Bosch and Volberda (2006, p. 1665) described environmental dynamism as changes in technologies, customer preferences and demand and supply of products. Environments perceived as highly uncertain will be possibly regarded also as quite risky, since contexts in which several wrong decisions are taken can result in significant problems and potentially risk organizational survival (Waldman, Ramirez, House, and Puranam, 2001, p.136). According to King and Anderson (2002), when analyzing the factors facilitating or preventing innovation, not only the features of the organization, but also the employees, structure, climate and culture need to be focused. Accordingly, it is also important to consider the environment within which the organization functions, and the way it

interacts with that environment. As Harvey et al. (1998) noted, today's dynamic organizational environment requires a well described orientation to bring about learning. Organizational learning is important especially for organizations in rapidly changing environments (Prokesch, 1997, p. 149). Cyert and March (1963) stated, that organizational learning has been regarded as a process by which organizations collectively learn through interactions with their environments (Kandemir and Hult, 2005). The relation between environmental dynamism and organizational learning, as a response to the external environment, has been studied by many scholars within the literature (e.g. Fiol and Lyles, 1985; Denton, 1998; Dodgson, 1993; Pedler et al., 1997). Similarly, in their study, Rebelo and Gomes (2011, p. 178) included environment, specifically dynamic environment, as being a factor affecting organizational learning culture. Several scholars (e.g. Conner, 1998a, 1998b, p. 32; Cowan-Sahadath, 2010, p. 396) also argued that changing environments require ongoing changes by the organizations rather than occasional events.

Based on these arguments and the suggested potential relation between organizational learning and innovation, it can be highly expected, that dynamic environments may require organizations to become innovative. D'Aveni (1994) and Thompson (1967) stated that top managers of organizations which operate in dynamic environments, need to develop innovative and creative strategies to handle challenging conditions (Simerly and Li, 2000, p. 32). Several studies revealed that external environment has an important role on organizational innovation (e.g. Khan and Manopichetwattana, 1989, p. 598; Levinthal and March, 1993, p. 98; Garg, Walters and Priem, 2003, p. 727). Tran (2008) further argued, that organizations in stable

environments tend to maintain status quo and develop less ability to learn in order to improve their efficiency.

Kotter and Heskett (1992) identified learning culture – or a culture that fosters innovation – as the optimal culture for organizations pursuing long-term innovation and performance in dynamic environments. As Bates and Khasaweh (2005) noted, organizational learning culture is critical to consideration of innovation, as it helps the organization to adapt to the dynamics of the changing environment.

In this study, environment is included to investigate whether its dynamism has an effect in the suggested model. With regard to environment, there might be industrial differences or a homogeneous pattern within a specific industry may not be observed. In either case, environment may play a role with regard to the strength of the main relationship. Mirkamali et al. (2011) argued, that significant changes in the business environment are observed in the 21st century. Organizations need to transform themselves to meet the dynamic needs in the turbulent environment and more demanding customers by developing the ability to anticipate changes and providing new products, processes and services. As stated by Herbane (2010, p. 982), based on the institutional theory perspective, organizational resilience can be considered as a new mega-institution (Scott, 2001) varying according to the industry type and the location of activities (Herbane, 2010).

Organizational adaptability and flexibility in process and structure are considered as necessary to function effectively in the highly volatile business environment (Kenny, 2006, p. 355). At this point, according to Lopez, Peon, and Ordas (2005, p.231), organizational learning need to establish a relationship between the organization and its environment which facilitates proactive behavior. Similar to many other definitions,

Starr et al. (2003) stated that organizational resilience implies the ability to deal with systematic changes as well as the capability to adapt to risky environments (Aleksić, Stefanović, Arsovski, and Tadić (2013, p. 1239). Resilience is also defined as a sociotechnical concept referring to how people deal with uncertainties (Lee, Vargo, and Seville, 2013, p. 32). Similarly, Webb and Schlemmer (2006, p. 184) provided definitions for resilience as continuous reconstruction of resources (Hamel and Valikanigas, 2003). According to the dynamic capabilities framework (Teece et al. 1997), organizations need to build and reconfigure resources in order to meet the changing environment.

In this regard, it was statistically analyzed, whether environmental dynamism moderates the relationship between organizational learning culture and resilience, mediated by climate for innovation. This analysis is conducted as an additional research question of this study.

H4: Environmental dynamism moderates the relationship between organizational learning culture and organizational resilience, mediated by climate for innovation.

This study aims to suggest an explanation for ‘how’ organizations can build a resilience potential through development of certain organizational qualities. The purpose of this research is to theoretically and empirically relate the concept of organizational resilience to its suggested antecedents and explain how organizational qualities as organizational learning and climate for innovation can help to build latent resilience for organizations. In this respect, this study will regard the resilience concept from a competency-based approach.

Accordingly, to conclude, this study mainly suggests and hypothesizes that:

H1: Organizational learning culture significantly predicts organizational resilience.

H2a: Organizational learning culture significantly predicts climate for innovation.

H2b: Climate for innovation significantly predicts organizational resilience.

H3: Climate for innovation mediates the relationship between organizational learning culture and organizational resilience.

H4: Environmental dynamism moderates the relationship between organizational learning culture and organizational resilience, mediated by climate for innovation.

3.3 Research models

Following the evidence in the literature review, a conceptual framework was developed to show and explain graphically the main factors, constructs and variables in relation to a resilience developed by an organization**.**

The research models hypothesized in this thesis are presented in Figures 1 and 2 below.

Figure 1. Research model

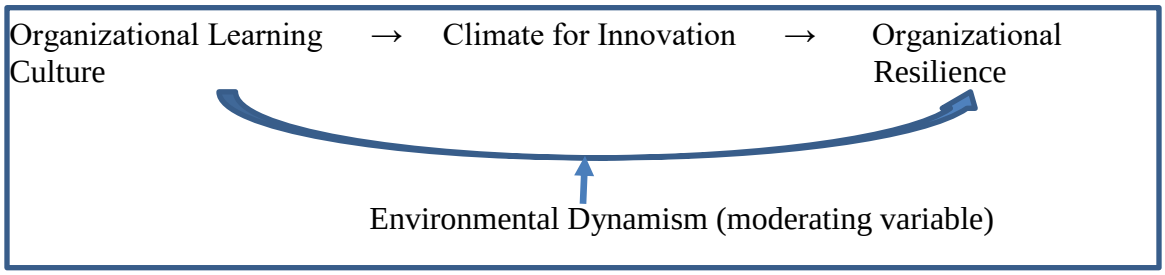

Figure 2. Moderation model

Accordingly, it is hypothesized in this study that organizational learning culture leads to climate for innovation, which further leads to organizational resilience. Moreover, the existence and level of environmental dynamism will change the strength of the suggested relationship between organizational learning culture and climate for innovation.

3.4 A research question: Does transformational leadership build an antecedent for both climate for innovation and organizational learning culture?

An investigation of the effect of transformational leadership on organizational learning culture and climate for innovation would be an additional contribution to the resilience literature. As an additional analysis, it was attempted to provide support for the importance of the transformational leadership in explaining the two independent variables of this study as organizational learning culture and climate for innovation. As stated in Zollo and Winter (2002), the question of where dynamic capabilities come from is left open in the definition of being the ability to integrate, and reconfigure internal and external competencies to respond to changing environments. Therefore, the antecedents of these dynamic capabilities need to be investigated further. Leadership is suggested as one facet of explanation in this study.

As suggested in several studies (e.g. King, 1990; Osborne, 1998; Schein and McClomb, 1998; Schein, 1985), leadership is one of the key determinants for innovation and learning. Leaders create and manage the organizational structure and culture supporting innovation, (Peters and Waterman, 1982; Van de Ven, 1986) and develop organizational capacity to innovate by directing resources toward innovative activities (Hasenfeld, 1983) (Jaskyte, 2004, p. 155). Pal (2013) noted that leadership and

management were regarded by Seville (2008) as significant for developing adaptive capacity and to make effective decisions during crises. Several studies within the literature suggested that behavior by leaders affect various organizational performance outcomes (e.g. Howell and Boies, 2004, p. 127; West, Borrill, Dawson, Brodbeck, Shapiro, and Howard, 2003, p. 394). Sommer et al. (2016) stated, that an organizational crisis is defined as an event involving high levels of uncertainty, important issues, and time urgency (Pearson and Clair, 1998). Recently, researchers have called for more studies on how leaders can effectively handle crises and encourage others to do the same (James, Wooten, and Dushek, 2011). Organizational learning requires the catalyst of a crisis as organizations and their top managers live according to their own cognitive structures' (Nystrom and Starbuck, 1984). For example, at AT&T, the traditional engineering approach had to be replaced with a more market-oriented view, while the transformation at Ford required the weakening of the finance-dominated view to make a critical renewal possible (Kennedy, 1989; Schlesinger et al., 1990) (Leavy in Starkey et al., 2004). Furthermore, specific to SMEs, Pal (2013) stated, that the effect economic crises can be decreased through an inspiring and resilient leadership, supported by a top management for effective organizational transformations (Mitroff et al. 1992, Penrose 2000, Seville et al. 2006, McManus et al. 2008). Sarros et al. (2008) similarly argued, that leadership was identified by Ostroff, Kinicki, and Tamkins (2003) as an emergent process that acts on both organizational culture and climate. Denison (1990) further stated that management behavior build up the principles of organizational culture. Jaskyte (2004) referred to several studies (Conger and Kanungo, 1987; Schein, 1990; Trice and Beyer, 1993) suggesting that leaders can help develop and maintain a desired

organizational culture and that they can encourage organizational innovativeness by creating shared values.

On the other hand, that a discussion on resilience should include the leadership types in the organization is derived from the related literature review. According to Sommer, 2016), organizational leaders will provide the resources and direction that the employees need for responding effectively to a shocking event. It is further expected, that transformational leadership behavior will affect workers' resilience through positive emotions (Bass, cited in Ciulla (ed., 1998), p. 173; Sutcliffe and Vogus, 2003; Kaplan, Cortina, Ruark, LaPort and Nicolaides, 2014, p.568).

As specifically stated in Sarros et al. (2008), transformational leadership has been revealed to promote innovation, which in turn contributes the long-term survival of the organization (Ancona and Caldwell, 1987, cited in Lewin, Lipsky and Sokel, eds., p. 198). Jansen, Vera and Crossan (2009, p. 9) also noted, that it is relatively recent, that Bass's (1985, 1998) framework of transformational and transactional leadership are extended to address organizational-level constructs as culture, learning, and innovation (e.g., Elenkov and Manev, 2005, p. 382; Pawar and Eastman, 1997; Vera and Crossan, 2004, p. 225).

3.4.1 Transformational leadership

Jansen et al. (2009, p. 9) argued that, studies on strategic leadership investigated executives having overall responsibility for an organization (Hambrick and Mason, 1984), based on the principle that they account for what happens within the organization (Hambrick, 1989). Transformational leadership is mainly concerned with development of followers' performance and activation and it has been categorized along four

dimensions as: idealized influence (leaders become role models for the followers); inspirational motivation (leaders make to inspire followers to achieve both personal and organizational goals); intellectual stimulation (stimulation of followers' efforts in order to make them more innovative and creative); individualized consideration (treating followers as individuals and not just members of a group). According to Zagorsek et al. (2009), transformational leaders encourage open and timely communication, dialogue and collaboration between team members. They enable the expression of different views and ideas and act as catalysts to speed up knowledge acquisition and sharing. As stated in Jaskyte (2004), transformational leaders are open-minded, dynamic, and concerned about planning (Harris, 1985) and they use intellectual stimulation to trigger creativity and improve employees' capacity to innovate.

The reason for including transformational leadership within this study as a variable is that strategic management theory has highly focused on top-level managers and their effects on strategy formulation and organizational performance (Waldman et al., 2001). Transformational leadership is found to positively affect the individual and organizational performance (Aygün and Gumusluoglu, 2013, p. 107). Salk and Schneider (2009) argued that specifically complex environments require such leaders as effective communicators to share information consistently and articulate a strong vision to other employees (Farrell, 2000; Slater and Narver, 1995). Leaders who show these behaviors are regarded to as transformational leaders. They motivate their subordinates to transform their own interests for a collective purpose and vision (Feinberg, Ostroff, and Burke, 2005). Bass (1985) noted that transformational leaders often change the organizational culture with a revision of the shared assumptions, values and norms.

Related to the inclusion of the construct 'transformational leadership' in this study, Diamond (1996 in Webb and Schlemmer, 2006) argued, that organizational resilience is characterized by non-authoritarian leader-follower relations. In such an organizational culture, leaders share information and decision making with employees, and those employees get also willing to give and receive feedback and take the responsibility for their works. The following sections provide further explanation for why transformational leadership is considered to include in this study by clarifying its relevance to other main variables with regard to suggested relationships.

3.4.2 Relationship between transformational leadership and organizational learning culture

This study adds the concept of transformational leadership as a variable to provide an explanation to the independent variables suggested in the model. Accordingly, the existence of transformational leadership behavior by the top management can increase the learning culture and climate for innovation possessed by the organization. Rebelo and Gomes (2011) argued, there is still lack of studies specifically investigating learning culture.

The effect of leaders on the creation of culture has been largely studied and supported by many researchers. Lok and Crawford (1999) argued, that specific leadership behaviors are linked to distinct cultural features (Block, 2003, p. 320). Schneider, Goldstein, and Smith (1995) stated that it is organizational managers who 'make' the environment (Sarros et al., 2008). According to the functionalist school, leaders are the ones to build and shape organizational culture and cultural change (e.g. Schein, 1985, 1992; Trice and Beyer, 1993; Denison and Mishra, 1995). As stated in

Block (2003), leaders' behaviors affect the perceptions of organizational culture among other employees (Chodkowski, 1999). Several studies suggested that organizational culture and leadership are highly interrelated within change process (e.g. Schein, 1984, p. 5; Afsaneh, 1993, p. 299; Kotter, 1998, Bass and Avolio, 1993; Schein, 1992; Denison, 1990; Peters and Waterman, 1982; Schein, 1985; Trice and Beyer, 1993; Waldman and Yammarino, 1999, p. 268). In their study, Tsui et al. (2006) stated that leaders contribute to the organizational culture through their behaviors (Sarros et al., 2008). According to Schein (1985), leaders have a major impact on the organizational culture, as their beliefs and values form the core of the organization's culture and they can transmit that culture through deliberate teaching, coaching, role modeling, reward allocation, promotion and also through the use of organizational symbols, logos and other cultural expressions. Similarly, Ogbonna and Harris (2000, p. 771) argued that numerous areas in organizational culture literature (e.g. Schein, 1992; Siehl, 1985) imply the role of leaders in creating specific types of culture.

Brown (1992) further revealed, that good leaders should develop necessary skills enabling them to change dimensions of their culture in order to improve the organizational performance.

Specifically transformational leadership has been widely accepted as a significant factor affecting and shaping organizational performance and culture (e.g. Howell and Avolio, 1993, p. 892; Yammarino, Spangler, and Bass (1993, p. 85). Transformational leaders often attempt to change the organizational culture toward their visions (Bass, 1985). Block (2003) revealed that employees who regarded their supervisors as transformational leaders were more likely to perceive their organizations' culture as adaptive and integrating.

As noted by Salk and Schneider (2009), the related literature suggested that among the factors facilitating organizational learning, the two most important ones are leadership (Farrell, 2000; Hayes and Allinson, 1998; Hurley and Hult, 1998; McGill, Slocum, and Lei, 1993; Vera and Crossan, 2004) and organizational culture (Ellis, Caridi, Lipshitz and Popper, 1999; Lipshitz, Popper, and Friedman, 2002; Popper and Lipshitz, 1998). In their study on organizational development in the 1980s, Sashkin and Burke asserted the return of an emphasis on developing leaders who can develop organizations. Accordingly, learning organizations symbolize a potentially significant evolution of organizational culture and such organizations require specific leadership capabilities to be developed. They further argued, that organization development and a new sort of management development focusing on the roles, skills, and tools for leadership in learning organizations are interrelated (Senge in Starkey et al., 2004). Several other studies revealed, that learning organizations are usually market oriented and have systematic structures, flexible processes, and facilitating transformational leaderships (e.g. Lundberg, 1991, p. 92; Ellinger et al., 1999; Watkins and Marsick, 1996). In their study, Vera and Crossan (2004) mainly asserted, that different leadership qualities lead to different dimensions of organizational learning. Accordingly, transformational leadership would trigger feed-forward and feedback learning (Jansen et al, 2009, p.9). Besides, while there are views about the source of organizational learning as being outside-driven, some other theorists explain organizational learning with the behavior of a group of individuals, for example a top management team (Kim in Starkey et al., 2004).

Jones (2000) described organizational learning as a process, in which managers aim to develop capabilities of organizational members to better comprehend and manage

the organization and its environment (Skerlavaj et al., 2010). In fact, leadership has an important role in organizational learning (Farrell, 2000; Hurley and Hult, 1998; McGill et al., 1993; Vera and Crossan, 2004, p. 224) since it affects the type and level of learning (Hayes and Allinson, 1998; Sackman, 1991; Vera and Crossan, 2004, p.225). Leaders decide and direct the nature of the organizational work and similarly the extent of learning. By itself, support by the management for organizational learning is vital to develop (Goh, 2003) (Salk and Schneider, 2009). Maani and Benton (1999), Slater and Narver (1995), and Snell (2001) described capability concerning transformational leadership as one of the most important factors for developing learning organizations (Zagorsek et al., 2009). As stated by Mirkamali et al. (2011), leaders have a strong influence on the acquisition and distribution of information. In addition, they support collective processes of organizational learning, reciprocal trust between organization members and leaders (Scott and Bruce, 1994), and favorable attitudes toward proactivity, risk and creativity. Similarly, many studies revealed that leaders with transformational competencies can promote personal and organizational changes (e.g. Hater and Bass, 1988, p. 695; House and Shamir cited in Chemers and Ayman (ed., 1993); Jung and Avolio, 2000, p. 951).

In a learning organization, leaders' roles require different new skills as; the ability to establish shared vision, to challenge prevailing models, and to encourage systematic ways of thinking. Therefore, leaders of learning organizations are responsible for enabling opportunities for employees to expand their capabilities and they are responsible for learning (Senge in Starkey et al., 2004).

Transformational leaders support collective processes of organizational learning, reciprocal trust between organization members and leaders (Scott and Bruce, 1994). As

stated by Zagorsek et al. (2009), they facilitate communication and foster dialogue and collaboration between organizational members, support the expression of different ideas and also facilitate the cognitive and behavioral changes in organizational members due to organizational learning. Furthermore, transformational leadership style is assumed to be more favorable for learning (Pawlowsky, 2001; Slater and Narver, 1995; Vera and Crossan, 2004, p. 226) as it stimulates questioning (Senge, 1990), appeals to an interest (Slater and Narver, 1995) and willingness (Bass, 1985) in learning (Salk and Schneider, 2009).

Jansen et al. (2009, p. 9) stated, that dynamism in organizational environment increases uncertainty and leads to organizational stress and risk (Waldman et al., 2001). Organizational members facing these conditions are more open to leader's behavior (Conger, 1999; Vera and Crossan, 2004), in particular to transformational ones (House, Spangler, and Woycke, 1991; Pawar and Eastman, 1997; Waldman et al., 2001). Ellinger et al. (1999) argued, that leaders need to establish a work environment that facilitates learning by sharing information with employees to improve their participation in the learning process (Stewart and O'Donnell, 2007, p. 239).

As stated by Rebelo and Gomes (2011, p. 177), there is a large literature emphasizing the part of top leadership in the creation and management of organizational culture. The role of top management with regard to learning is therefore an important dimension in advancing a cultural orientation towards learning. Chiva and Allegre (2009) defined organizational learning culture as the organizational and managerial characteristics encouraging the organizational learning process or allowing to learn and develop a learning organization.

In fact, as stated in Block (2003), leadership creates an environment in which organizational change is likely to occur (Hennessey, 1998). Jerez-Gomez et al. (2005) referred to several studies suggesting the role of management in organizational learning culture. Accordingly, management needs to identify the importance of learning and also of developing a culture that facilitates the acquisition and creation of knowledge (Stata and Almond, 1989; McGill et al., 1992; Garvin, 1993; Nonaka and Takeuchi, 1995); should express a strategic view of learning (Ulrich et al., 1993, p. 53; Slocum et al., 1994; Nevis et al., 1995; Hult and Ferrell, 1997); needs to provide that employees regard learning as part of organizational success (Senge, 1990; Slater and Narver, 1995; Spender, 1996; Williams, 2001) and to take the responsibility of the process of change for making the organization able to deal with new challenges (Lei et al., 1999). Similarly, Fichman and Kemerer (1997) and Williams (2001) stated, that for organizational learning, management needs to provide, that the employees recognize the significance of learning, and get actively involved in it by regarding learning as part of the diffusion of technological innovations (Lin, 2008, p. 64). As stated in Ambrosini and Bowman (2009), Rosenbloom (2000) demonstrated that leadership with the ability to take risk and to create an organizational learning culture are factors for dynamic capabilities. Furthermore, Salvato (2003), also concluded that leadership has an important role in the evolution organizational dynamic capabilities.

3.4.3 Relationship between transformational leadership and climate for innovation

Schein (2004) argued that the effects of leadership are generally realized indirectly through the effect they have on the work environment. A substantial literature in organizational psychology has focused on how climate, culture and innovation relate to

concepts as organizational commitment and leadership (King and Anderson, 2002). Leadership behaviors of immediate supervisors are regarded as being critical for employees' interpretations about organizational environment (Kozlowski and Doherty, 1989; Schneider, 1983) and perceptions of organizational climate (Wang et al., 2013). In line with this, Denison (1996) argued that organizational climate is more subject to direct control by leaders (Isaksen and Akkermans, 2011). As stated in Jaskyte (2004), according to several studies, the leader's values for change and innovation affect the organizational level of innovativeness. Accordingly, leaders encourage other employees by supporting risk taking and innovation values and this shapes the organization's level of innovativeness (Chatman and Cha, 2003; Cummings and Huse, 1989; Hasenfeld, 1983; King and Anderson, 1995). As stated in Mafabi et al. (2015), managers need to develop a culture that builds a climate proper for the development of new ideas to be recognized and advanced for business improvement (Garcia-Morales et al., 2008). Damanpour and Schneider (2006) argued, that top managers influence organizational outcomes by creating the organizational culture, influencing organizational climate, and building the capacity innovation. Therefore, the climate for innovation can be regarded as a direct outcome of top managers' characteristics. (Sarros et al., 2008).

Specifically, due to these influences of leaders' behaviors on employee interpretation about the organizational environment (Bandura, 1986; Schein, 2004), employees having transformational leaders can develop more about innovation climate (Wang et al., 2013). Yukl (2002) argued that specific leadership behaviors can trigger innovation. James et al. (2008, p. 8) also argued, that leaders build the climate necessary for organizations to become innovative (Sarros et al., 2008). Strategic and transformational leaders are required for sustainable organizational change and evolution

in today's dynamic business environments (Mirkamali et al., 2011). Ancona and Caldwell (1987) suggested that transformational leadership promotes innovation, which in turn contributes to the organizational survival in the long-term. It has been shown with several studies that leadership behavior largely affects the climate for innovation within organizations (e.g. Amabile, et al., 1996; Mumford and Gustafson, 1988; Scott and Bruce, 1994; Mumford, Scott, Gaddis, and Strange, 2002, p. 709; Jung, 2001). Kahai, Sosik, and Avolio (2003, p. 502) have suggested in their study a direct relationship between transformational leadership and employee creativity. Similarly, creative behavior displayed by transformational leaders provide exemplary motives for innovation (Howell and Higgins, 1990, p. 319). Transformational leadership behaviors closely correspond to the sources of innovation and creativity at the workplace, some of which are vision, support for innovation, autonomy, encouragement, recognition, and challenge (Elkins and Keller, 2003) (Gumusoglu and Ilsev, 2009, p. 463). Studies by Waldman and Bass (1991, p. 170), Keller (1992, p. 490) and Waldman and Atwater (1994, p. 235) revealed that transformational leadership and organizational innovation are interrelated. Sosik, Avolio, and Kahai (1997, p. 89) argued that transformational leaders help to challenge exiting learning and develop new productive thinking processes. As noted by Vera and Crossan (2004), transformational leaders trigger innovation through learning as they can easily communicate and mobilize potential for innovation. Jung, Chow, and Wu (2003, p. 529) argued, that transformational leadership improves innovation by increasing employees' motivation to higher levels of performance (Shamir, House, and Arthur, 1993) and by encouraging them to think creatively (Sosik, Avolio, and Kahai, 1997). Bundy (2002) and Henry (2001) further stated that leader's intellectual stimulation triggers new ideas integral to the process of

innovation (Sarros et al., 2008). Leaders' vision is manifested through culture and it contributes to the organizational climate necessary to become innovative (James et al., 2008, p. 9).

Jung et al. (2003) argued that there is a positive relationship between transformational leadership and innovative climate of organizations. By allowing the expression of different views and ideas, by challenging old assumptions and beliefs, and by stimulating new perspectives transformational leaders enhance the process of information interpretation (Zagorsek et al. 2009). According to Jansen et al. (2009), transformational leadership behaviors are more powerful in dynamic environments and can encourage lower level managers to develop creative ideas for significant improvements. In addition, as dynamic environments also trigger a shared perception that something needs to be done to handle with external problems (Waldman and Yammarino, 1999, p. 269), transformational leadership behaviors in dynamic environments will encourage radical change and functional innovation. In Sarros et al. (2008), it was stated, that managers can contribute to shape a strong organizational culture and a positive climate for organizational innovation through transformational leadership, and in this way they influence innovative behavior (Elenkov and Manev, 2005; Bundy, 2002; Henry, 2001).

Therefore, this study suggests transformational leadership as an antecedent for organizational learning culture and climate for innovation.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 General issues

Quantitative data is collected via survey administration to mid-level managers of SMEs and larger companies located in Istanbul. In this chapter, the methodological issues will be discussed. In this thesis, a quantitative study is conducted based on survey data. This chapter presents details relating to the study in terms of the design of the research instrument. Next, the criteria for the chosen sample and the data collection procedures will be discussed. Afterwards, the demographic characteristics of the responding companies will be presented. Lastly, the measurement of variables, their operationalization and the reliability and validity of the scales applied will be elaborated.

4.2 Reliability and validity of the measurement theory

Cook and Campbell (1979) defined validity as "the best available approximation to the truth or falsity of a given inference, proposition or conclusion". In their scale validation study, Yang et al (2004) stated that there is a need for further studies for the scale with larger sample sizes and different types of organizations. This study can also be considered as a further study of 'Dimensions of the Learning Organizational Questionnaire' scale.

As noted by Richtner and Löfsten (2014); the measures reflected on the questionnaire items are only approximate indicators of managers' perceptions and one common method to deal with this bias is to administer questionnaires to multiple respondents in each company and then calculate an average. For this reason, it was

attempted to receive at least 2-3 responses from each company and averages are calculated for each organization, taking the responses of managers from the related company into consideration in order to obtain an aggregate data representing the single organization.

4.3 Necessary methodological steps

As mentioned previously, in this study, IBM SPSS 23 was used as the research tool and Confirmatory Factor Analysis (CFA) and then following Regression Analysis were conducted based on the data resulted from the results of questionnaires received.
The statistical analyses were conducted in following steps. First, a confirmatory factor analysis (principal components analysis) was applied, to test whether the measures selected for each construct exhibited sufficient convergent and discriminating validity. Then, Structural Equation Modeling was conducted via AMOS to test the hypothesized mediation model.

The first step is principal component analysis with an oblique rotation (premix), and tests whether or not the variables selected to measure each construct exhibit sufficient convergent and discriminant validity. According to Hair et al. (1995), the generally agreed upon lower limit for the Cronbach's alpha is 0.70, although this may decrease to 0.60 in exploratory research. Next; the Kaiser–Meyer–Olin (KMO), a measure of sampling adequacy was checked. This measure varies between 0 and 1; values closer to 1 are preferred. The suggested minimum is a value of .60, but .50 can also be accepted. Bartlett's test of sphericity needs to be calculated to test the null hypothesis that the correlation matrix is an identity matrix. Taken together, these tests

provide a minimum standard that must be passed before a factor analysis can be conducted.

4.4 Sample of the study

The questionnaire items provided below were directed to at least three mid-level managers for each company in the sample of this study. In order to avoid subjective responses, average of the responses from all of the managers from a specific company were calculated and taken into consideration for the statistical analyses. This is a common way for quantitative researches within the organizational studies, to have a broader understanding of the issue considered. Mid-level managers with at least two years of experience were asked to complete the surveys in this study. The sample in the study on organizational trust by Huff and Kelley (2003) was restricted to mid-level managers and staff members. Accordingly, they assumed that the nature of the work of these managers is very familiar across countries. Furthermore, mid-level managers are possibly most appropriate to evaluate the organizational construct, as they deal with upper-level managers and lower-level employees, and also often work with other external partners. Somers (2009) in his study on the measurement of organizational resilience also used responses by mid-level managers for surveys. Senior management was selected to complete the surveys to ensure that the person completing the questionnaire had an organization-wide perspective as well as several years of experience in dealing with challenges. This means, that senior management was asked to assess the resilience levels of his own organization. At this point, Waldman et al. (2001, p. 135) further stated that, although all members of the organization can be affected by the leadership of CEOs (Shamir, 1995), senior managers are more likely to be

specifically good source considering the leadership due to their direct connection with CEOs (Shamir, 1995). Similarly, Skerlavaj et al. (2010) argued, that in their study, they mainly aimed at a group of managers to provide a strategic and also integrative perspective about the organization. Ingirige, Proverbs and Jones (2008, p. 584) further argued, that SMEs are the ones which experience the most disadvantages during crises and are less prepared. SMEs have different environments and are more sensitive to financial legislative, technological, and demand changes compared to larger organizations (Bhamra and Dani 2011, 5373). On the other hand, according to Carlsson (1989, p. 181), they may have some advantages due to being more flexible and closer to customers.

With regard to the industries included, Borekci et al. (2014b) in their study on supplier resilience argued, that a wide range of industries was attempted to be included in order to be representative of an overall economic outlook. Accordingly, this view was especially important for emerging economies, and such a wide variety of industries will also help to make better generalizations. For this reason, this study investigated organizations from a wide variety of sectors, specifically focusing on finance (banking, insurance, etc.), high-technology (computer industry, software industry, gsm operators, electronics, etc.) and textile production and food production (not retail).

The companies in the sample are determined based on convenience sampling method employed. Convenience sampling is a sampling method in which members of the target population are selected for the purpose of the study if they meet certain criteria, such as geographical proximity, availability at a certain time, accessibility, or the willingness to volunteer (Dörnyei, 2007). Accordingly, based on this process, the total sample size is 101 companies and 250 mid-level managers as respondents. Data

collection process was carried out by a professional market research company and the data was collected from Istanbul. Since Istanbul is the major and biggest city in Turkey and most headquarters are located here, it is considered to be able to reflect the characteristics of Turkish companies as a whole.

The 'second' top 500 enterprises list by Istanbul Chamber of Industry (ICI) includes also smaller companies, compared to the 'first' top 500, as stated by the ICI-Chairman, and also includes various industries including the ones in this research's focus. Furthermore, based on our industry and size criteria, the professional research company also has a list of companies including small and medium sized enterprises, with which they already have a contact due to several previous research studies, as stated before.

According to the official SME definition in *Resmi Gazete*; companies employing less than 10 employees and either yearly net sales revenue or balance sheet is not exceeding one million Turkish Liras are defined as micro firms; companies employing less than 50 employees and either yearly net sales revenue or balance sheet is not exceeding eight million Turkish Liras are defined as small firms, and companies employing less than 250 employees and either yearly net sales revenue or balance sheet is not exceeding 40 million Turkish Liras are defined as medium firms (Reference: http://www.resmigazete.gov.tr/eskiler/2012/11/20121104-11.htm). For this reason, the criteria was defined as companies having 10 employees and more, as micro companies are excluded. In this regard, the sample of this study consists of small and medium firms and also larger firms in size. In this regard, companies having more than 250 employees and either yearly net sales revenue or balance sheet exceeding 40 million Turkish Liras are considered and included as larger firms. For this reason, the criteria was defined as

companies having 10 employees and more, as micro companies are excluded. The official definition for SME's above is provided to be able to exclude the micro companies. All in all, the sample of this study consists of companies fitting these definitions above as small and medium firms and also larger firms in size.

Furthermore, industries in the sample are also considered to have potential dynamism levels (change speed, etc. as also derived from the related survey items); and industries within the Turkish business environment as finance (banking, insurance, etc.) and high-technology companies (computer industry, software industry, gsm operators, electronics, etc.) and textile production firms and food production firms (not retail) are specifically included in the sample.

All of these criteria and added changes/revisions are well explained to the professional research company contacting the companies to be included in the sample, as part of the process of this study. We ask the research company to contact companies according to the recent SME definition on *Resmi Gazete* and also specifically focus on the specified industries. Accordingly, the research company identifies the firms meeting these research criteria.

4.4.1 Sample characteristics

250 mid- level managers form a total number of 101 companies filled out the survey form in face-to-face interviews. With regard to company demographics, the mean firm age is 14 years the mean number of employees is 27. 40 % of the companies have been operating for less than 10 years, while 35 % for 11-15 years and 25% for more than 15 years. 52 % of the companies have 10-20 employees and 48 % have more than 20 employees. Among the participating companies, 29 % are from technology industry, 24

% are from finance area and % 21 are from tourism sector; and the remaining are from food manufacturing (14%), textile (11%), and other (1%). In other words, 74% of the companies are from services and 26 % are from manufacturing industries. On the other hand, 43 % of the companies have experienced any change in last 2 years, whereas 57 % have not. With regard to the changes experienced, the most frequent change categories are economic crises (18 companies) and downsizings (18 companies), whereas the least frequent ones are top management change (2 companies), moving (3 companies) and restructuring (3 companies).

Table 2 and Table 3 showing the sample characteristics with regard to demographics information and frequencies of changes experienced are provided below:

Table 2. Sample Characteristics

		Number	Per cent
Company Age *n*=13,64	<10 years	40	40
	11-15 years	35	35
	>15 years	26	25
Areas	Finance	24	24
	Food Manufacturing	14	14
	Furniture Manufacturing	1	1
	Technology	30	29
	Textile	11	11
	Tourism	21	21
Industry	Production	26	26
	Services	75	74
Employee Number *n*=25,6	10-20	53	52,5
	>20	48	47,5
Change in last 2 years	Yes	43	42,6
	No	58	57,4

Table 3. Frequencies of Changes Experienced

	Number	Per cent
Economic Crises	18	42
Growth	8	19
Downsizing	18	42
Changes on IT	5	12
Moving	3	7
Top management change	2	5
Restructuring	3	7
M&A	4	9

4.5 Data collection

Generally, collecting company-level information through the questionnaire method has limitations within the Turkish business context. Mostly, responding people are not much willing to disclose information about their companies because of confidentiality concerns. Moreover, since company-level data usually requires information from the upper management levels, such respondents do not generally have enough time to spend completing questionnaires.

In this study, responses by the mid-level managers are aggregated in order to obtain a data at organization level, as all variables suggested in the hypothesized model are at organization level. With regard to the usage of individual data to use at the organization-level, Rebelo and Gomes (2011) argued that they aggregated their data, since they had collected it to measure learning-oriented culture at the individual level and organizational culture was a concept at the organizational level. In this study, Rwg-score method and ICC-2 (Interrater Correlation) was applied to aggregate the data that is collected at the individual level. Rwg-score method by James et al. (1984) is used generally to estimate the within-group agreement and to determine empirically whether individual scores on variables can be aggregated within each group. ICC-2 calculation in SPSS revealed acceptable level of interrater correlation coefficient to aggregate the data. Exploratory and confirmatory factor analyses are conducted with individual-level data, while statistical analyses are run by using the aggregate data to provide an organization-level analysis.

4.6 Questionnaire items

Items for the questionnaire have been developed based on the scales from related previous studies that are validated.

As stated previously in this study, organizational resilience is a relatively new concept within the organizational studies. There are fewer scales already developed to measure the concept. In this study, the 12-items scale developed by Kantur and Iseri-Say (2015) with 5-Likert scale is used as; 1=strongly disagree and 5=strongly agree. The reason for measuring resilience with this scale in this study is that these items have already been empirically tested specifically within the Turkish business context, which also constitutes the context of this study.

In this current study, organizational resilience is measured with responses collected from mid-level managers of the companies in the sample, since the concept of resilience is considered from a competence and capacity approach developed by the organizations and their members themselves. In order to have a resilience capacity, organizations do not necessarily need to have a change experience in the past; but it is important to have developed the necessary or so-called pre-requisite qualifications for them to display resilient responses in case of any change. In this study, these qualifications are intended to observe and measure on the organizations. The subject of organizational resilience is the organization at the meso-level, as the organization consists of individuals, and the collection of organizations forms community or society (Luo and Shi, 2011, p. 2). Somers (2009, p. 12), for example, defined organizational resilience as the proactive measures for future-looking organizations. As Lee et al. (2013) stated, there are many ways organizations respond to uncertainty as centralizing internal controls (Pfeffer, 1978), learning (Carroll, 1998; Weick et al. 2005), being

creative (Kendra and Wachtendorf, 2003), and adaptation (Vogus and Sutcliffe, 2008). Similarly, Akgün and Keskin (2014) studied organizational resilience as a 'capacity' and related it to product innovativeness.

In his study on dimensions of organizational resilience with regard to insurance companies, Sawalha (2015) measured resilience with a questionnaire consisting of five sections as general questions, major risks facing insurance industry, resilience definitions, elements and practices of resilience and resilience objectives. Pal et al. (2014) investigated the antecedents of resilience with an empirical study based on questionnaire and directed the questions on flexibility, redundancy, robustness and networking in the form of 'how do you relate…' taking the economic crises into consideration. Similarly, Mallak (1998) identified six factors which effectively measure organizational resilience: goal-directed solution seeking; risk avoidance; critical situational understanding; ability of team members to fill multiple roles; degree of reliance on information sources; and access to resources. Those items measured the complex construct of resilience (Somers, 2009). As stated by Lengnick-Hall and Beck (2009), organizational resilience represents a response in terms of a continuum ranging from survival to recovery to better situation and the higher the level of resilience capacity the more feasible it would be to expect that an organization will have a robust transformation at the end of this continuum. In all these studies and more, it was observed, that organizational resilience is considered as a capacity and potential capability of organizations developed through time in order to face possible changes strong and successfully. One example item for the scale of organizational resilience is:

"In unexpected or critical situations, my organization develops alternatives in order to benefit from negative circumstances". All of the questionnaire items are provided at Appendix A.

For the measurement of organizational learning culture, the 7-items scale developed by Marsick and Watkins (2003) and commonly used in the organization studies literature is applied. Ortenblad (2002) reviewed the perspectives of learning organization within the literature and acknowledged, that Watkins and Marsick's framework (1993) is the only theoretical approach covering most areas of the concept (Egan et al., 2004). The DLOQ developed by Marsick and Watkins (1993) has already proved to be a reliable and valid assessment tool for studying the learning culture of organizations (e.g. Hernandez and Watkins, 2003, p. 189; Lien, Yang, and Li, 2002, 856; Yang et al., 2004).

With regard to this scale, Yang (2003) stated, that when the main aim of a broad study is to understand the relationship between a learning culture and some other organizational variables, researchers might want to include fewer scale items for learning culture. Accordingly, therefore, one representative item for each of the seven dimensions was determined to create a concise version of the DLOQ and these seven items formed a measurement of learning culture with an acceptable reliability score (alpha = .84). (Marsick and Watkins, 2003). Based on this, the short version of DLOQ assessment tool with 7 items and 6-Likert scale as 1=almost never and 6=almost always is used in this study and revealed sufficient results for validity and reliability. As each item of this 7-items scale represents one factor of the longest original version and reliabilities were tested before, that was used in this study to measure organizational learning culture. One example item for the scale of organizational learning culture is: "In

my organization, people are rewarded for learning". All of the questionnaire items are provided at Appendix A.

Innovation is a quite vague construct to measure as several different dynamics are included in it. Beyond measuring the level of innovation, it is important to see the development of necessary conditions for innovation to grow in an organization, for an understanding of its effects on the capacity for organizational resilience. For this reason, the construct of innovation was decided to include in the model as the climate type, which will allow to receive views of mid-level managers in the sample about their organizations' innovation capabilities. In this study, climate for innovation is measured with the 22-items scale developed by Scott and Bruce (1994) with 5-Likert scale as; 1=not at all and 5=to an exceptional degree. One example item for the scale of climate for innovation is: "Around here, people are allowed to try to solve the same problems in different ways". All of the questionnaire items are provided at the Appendix A section.

'Environmental dynamism' is suggested as an additional variable, in order to see whether all environments or only hypothetically dynamic environments provide ground for the main relationship in the hypothesis. The reason for choosing this specific scale is that it was published in a well-reputation journal and was quoted since that time in many scholar works. In this study, environmental dynamism is measured with the 5-items scale developed by Miller and Friesen (1982) with 7-Likert scale as 1=totally disagree and 7=totally agree. One example item for the scale of environmental dynamism is: "Our firm must change its marketing practices extremely frequently (e.g. semi-annually)". All of the questionnaire items are provided at Appendix A.

Since transformational leadership is quite old and well known concept within the organizational behavior studies, there are well established and validated scales

commonly used. The reason why this specific scale was chosen for the transformational leadership variable in this study is that the items were measuring top management, and this study is also concerned about top management, as the main concern is to explain organizational resilience with the existence of organizational learning culture. In addition, that all questionnaires are completed by mid-level managers requires transformational leadership to be evaluated by them with regard to the top management Several studies (Barlow, Jordan, and Hendrix, 2003; Katz and Kahn, 1978) suggested that the top echelons of leaders are significantly influence organizational culture and change (Sarros et al., 2008). In this study, transformational leadership is measured with the 5-items scale developed by Garcia-Morales et al. (2008) with 7-Likert scale as 1=totally disagree and 7=totally agree. One example item for the scale of transformational leadership is: "The firm's management succeeds in motivating the rest of the company". All of the questionnaire items are provided at the Appendix A section. Furthermore, the Turkish versions of the questions as directed to the respondents are provided at Appendix B.

CHAPTER 5

DATA ANALYSIS AND HYPOTHESIS TESTING

5.1 Data analysis

In this study, IBM SPSS Statistics 23 and IBM SPSS Amos 23 are used as statistical tools. Survey data are transferred to the SPSS Programs and the necessary statistical analyses are completed. Both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are conducted to understand the shared variance of measured variables that is considered to belong to a certain factor. First of all, EFAs are conducted via IBM SPSS Statistics 23 for the scales to be used in this study. Structures of the factors obtained as a result of the EFA are validated with the following CFAs via IBM SPSS Amos 23 and reliability analyses are conducted and structural equation modeling (SEM) was applied to test the moderation effects. For the mediation analysis, the procedure suggested by Baron and Kenny (1986) was conducted by applying three consecutive regression analyses to meet the criteria of mediation. In SEM, usually a two-step model is used (Kline, 2005). Accordingly, in the first step, measurement model is developed and its validity is assessed, and the second step includes the development of a structural model and testing its overall fit.

Below, findings of statistical analyses as EFA, CFA, regression and SEM are provided. Each analysis is explained step by step and in detail.

5.2 Findings of the hypothesis testing

5.2.1 Exploratory factor analyses

5.2.1.1 Scale for organizational resilience

In this part, the 12-items scale for organizational resilience developed by Kantur and Iseri-Say (2015) was applied to the data of our study in order to see whether it is appropriate for our sample to continue with further analyses. Table 4 below provides information on KMO Value and Bartlett Test for organizational resilience.

Table 4. KMO Value and Bartlett Test Results for Organizational Resilience

Kaiser Meyer Olkin (KMO)		0.88
Bartlett Test	Chi^2	1082.43
	df	45
	p; Significance	0.00***

***: $p<0.001$

Table 4 shows the Kaiser Meyer Olkin (KMO) value as 0.88. This means, results of factor analyses to be applied to the recent survey data will be useful and meaningful. Bartlett test results prove that there are significant and high levels of relationships between the items and the data is suitable for factor analyses ($p<0.001$).

Table 5 below provides information on total variance explained for organizational resilience. Table 5 shows that the transformational leadership scale explains 60.04 % of the total variance and this is an acceptable level.

Table 5. Total Variance Explained for Organizational Resilience

Factor	Initial Eigenvalues			Total Factor Loadings		
	Total	Variance Explained %	Cumulative %	Total	Variance Explained %	Cumulative %
Factor 1	4.94	49.36	49.36	3.14	31.40	31.40
Factor 2	1.07	10.67	60.04	2.86	28.63	**60.04**

As a result of the exploratory factor analysis conducted, number of items is decreased from 12 to 10 by necessarily deleting 2 items. The validity analysis of 10 items revealed two sub-factors, all of them having .50 and more loadings. Information on structures of factors and factor loadings for each of the two sub-factors are provided in Table 6 below.

Table 6. Factor Loadings for the Items of Organizational Resilience

Items	Factor 1	Factor 2
4. rapidly takes action.	0.84	
3. has the strength to use required resources.*	0.75	
10. shows resistance to the end in order not to lose.	0.73	
9. is a powerful organization and not easily affected by outside factors.*	0.70	
11. is powerful to overcome everything. *	0.61	
2. is successful in generating diverse solutions.		0.82
6. is agile in taking required action when needed.		0.72
7. is a place where all the employees engaged to do what is required from them.		0.71
1. stands straight to get back to its position.		0.66
8. is successful in acting as a whole with all of its employees.		0.54

Table 6 lists items belonging to the two factors of organizational resilience scale and their factor loadings. Accordingly, Factor-1 is called as ‘organizational strength’ and

Factor-2 is called as ‘organizational commitment to change’. As seen on the table, there is no factor loading below 0.50, which is accepted.

5.2.1.2 Scale for organizational learning culture

In this part, the seven-items scale for organizational learning culture developed by Marsick and Watkins (2003) will be applied to the data of our study in order to see whether it is appropriate for our sample to continue with further analyses. Table 7 below provides information on KMO Value and Bartlett Test for organizational learning culture.

Table 7. KMO Value and Bartlett Test Results for Organizational Learning Culture

Kaiser Meyer Olkin (KMO)		0.91
Bartlett Test	Chi^2	652.49
	df	21
	p; Significance	0.00***

***: $p<0.001$

Table 7 shows Kaiser Meyer Olkin (KMO) value as 0.91. This means, results of factor analyses to be applied to the recent survey data will be useful and meaningful. Bartlett test results prove that there are significant and high levels of relationships between the items and the data is suitable for factor analyses ($p<0.001$).

Table 8 below provides information on total variance explained for organizational learning culture.

Table 8. Total Variance Explained for Organizational Learning Culture

	Eigenvalues	
	Total	Variance Explained %
Organizational Learning Culture	3.87	55.22

Table 8 shows that the organizational learning culture scale explains 55.22 % of the total variance and this is an acceptable level.

Table 9 below lists items belonging to the organizational learning culture scale and their factor loadings. As seen on the table, there is no factor loading below 0.60, which is accepted.

Table 9. Factor Loadings for the Items of Organizational Learning Culture

Items	Factor Loadings
7 In my organization, people are rewarded for learning.	0.74
13 In my organization, people spend time building trust with each other.	0.78
17 In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	0.68
24 My organization makes its lessons learned available to all employees.	0.74
26 My organization recognizes people for taking initiative.	0.70
36 My organization works together with the outside community to meet mutual needs.	0.77
42 In my organization, leaders continually look for opportunities to learn.	0.80

5.2.1.3 Scale for climate for innovation

In this part, the 22-items scale for climate for innovation developed by Scott and Bruce (1994) will be applied to the data of our study in order to see whether it is appropriate for our sample to continue with further analyses. Table 10 below provides information on KMO Value and Bartlett Test for climate for innovation.

Table 10. KMO Value and Bartlett Test for Climate for Innovation

Kaiser Meyer Olkin (KMO)		0.94
Bartlett Test ***: p<0.001*	Chi^2	1929.23
	df	120
	p; Significance	0.00***

Table 10 shows Kaiser Meyer Olkin (KMO) value as 0.94. This means, results of factor analyses to be applied to the recent survey data will be useful and meaningful. Bartlett test results prove that there are significant and high levels of relationships between the items and the data is suitable for factor analyses ($p<0.001$).

As a result of the exploratory factor analysis conducted, number of items is decreased from 22 to 16 by necessarily deleting six items. The analysis of 16 items revealed two sub-factors, all of them having .50 and more loadings. Information on structures of factors and factor loadings for each of the two sub-factors are provided in Table 11 below. Table 11 shows that the sub-factor Factor1 explains 27.64% and Factor2 explains 27.19% of the total variance. Together, Factor1 and Factor2 explain 54.82% of the total variance.

Table 11. Total Variance Explained for the Climate for Innovation

Factor	Initial Eigenvalues			Total Factor Loadings		
	Total	Variance Explained %	Cumulative %	Total	Variance Explained %	Cumulative %
Factor 1	7.50	46.89	46.89	4.42	27.64	27.64
Factor 2	1.27	7.94	54.82	4.35	27.19	**54.82**

Table 12 below lists items belonging to the two factors of climate for innovation scale and their factor loadings. Accordingly, Factor-1 is called as ‘recognition of new idea’ and Factor-2 is called as ‘encourage for creativity’. As seen on the table, there is no factor loading below 0.50, which is accepted as stated above.

Table 12. Factor Loadings for the Items of Sub-factors of Climate for Innovation

Items	Factor-1	Factor-2
15. There are adequate resources devoted to innovation in this organization	0.80	
3. Around here, people are allowed to try to solve the same problems in different way	0.76	
14. Assistance in developing new ideas is readily available.	0.69	
8. The best way to get along in this organization is to think the way the rest of the group does.(R)	0.67	
9. People around here are expected to deal with problems in the same way. (R)	0.66	
2. Our ability to function creatively is respected by the leadership.	0.62	
21. This organization publicly recognizes those who are innovative	0.61	
4. The main function of members in this organization is to follow orders which come down through channels. (R)	0.60	
1. Creativity is encouraged here.		0.75
18. Personnel shortages inhibit innovation in this organization. (R)		0.72
13. This place seems to be more concerned with the status quo than with change. (R)		0.70
12. In this organization, we tend to stick to tried and true ways. (R)		0.68
5. Around here, a person can get in a lot of trouble by being different. (R)		0.64
17. Lack of funding to investigate creative ideas is a problem in this organization. (R)		0.64
10. This organization is open and responsive to change.		0.61
19. This organization gives me free time to pursue creative ideas during the workday.		0.53

5.2.1.4 Scale for environmental dynamism

In this part, the 5-items scale for environmental dynamism developed by Miller and Friesen (1982) was applied to the data of our study in order to see whether it is appropriate for our sample to continue with further analyses.

Table 13 below provides information on KMO Value and Bartlett Test for environmental dynamism.

Table 13. KMO Value and Bartlett Test Results for Environmental Dynamism

Kaiser Meyer Olkin (KMO)		0.85
Bartlett Test	Chi^2	659.46
	df	10
	p; Significance	0.00***

***: $p<0.001$

Table 13 shows Kaiser-Meyer-Olkin (KMO) value as 0.85. This means, results of factor analyses to be applied to the recent survey data will be useful and meaningful. Bartlett test results prove that there are significant and high levels of relationships between the items and the data is suitable for factor analyses ($p<0.001$). Furthermore, as seen on Table 14 below, the environmental dynamism scale explains 67.47% of the total variance and this is an acceptable level.

Table 14. Total Variance Explained for the Environmental Dynamism

	Eigenvalues	
	Total	Variance Explained %
Environmental Dynamism	3.37	67.47

Table 15 below shows factor loadings results for the items of the environmental dynamism scale.

Table 15. Factor Loadings for the Items of Environmental Dynamism

Items	Factor Loadings
1. Our firm must rarely change its marketing practices to keep up with the market and competitors.	0.88
2. The rate at which products/services are getting obsolete in the industry is very slow. (e.g. basic metal like copper).	0.82
3. Actions of competitors are quite easy to predict (as in some primary industries).	0.87
4. Demand and consumer tastes are fairly easy to forecast (e.g. for milk companies.	0.84
5. The production/service technology is not subject to very much change and is well established (e.g. in steel production).	0.68

As seen on the table above, all of the five items loaded to one single factor. Besides, there is no factor loading below 0.60, which is accepted. According to Hair et al. (2010), all factor loadings should be statistically significant and loadings should be higher than 0.5.

5.2.1.5 Scale for transformational leadership

In this part, the 5-items scale for transformational leadership developed by Garcia-Morales et al. (2008) was applied to the data of our study in order to see whether it is appropriate for our sample to continue with further analyses. Table 16 below provides information on KMO Value and Bartlett Test for transformational leadership.

Table 16. KMO Value and Bartlett Test Results for Transformational Leadership

Kaiser Meyer Olkin (KMO)		0.83
Bartlett Test	Chi^2	685.13
	df	10
	p; Significance	0.00***

***: *p<0.001*

Table 16 shows Kaiser Meyer Olkin (KMO) value as 0.83. This means, results of factor analyses to be applied to the recent survey data will be useful and meaningful. Bartlett test results prove that there are significant and high levels of relationships between the items and the data is suitable for factor analyses ($p<0.001$). Furthermore, Table 17 below shows that the transformational leadership scale explains 68.72% of the total variance and this is an acceptable level.

Table 17. Total Variance Explained for the Transformational Leadership

	Eigenvalues	
	Total	Variance Explained %
Transformational Leadership	3.44	68.72

Table 18 below provides the factor loadings for the items of transformational leadership scale.

Table 18. Factor Loadings for the Items of Transformational Leadership

Items	Factor Loadings
1. The firm's management is always on the lookout for new opportunities for the unit/department/organization.	0.78
2. The firm's management has a clear common view of its final aims.	0.83
3. The firm's management succeeds in motivating the rest of the company.	0.84
4. The firm's management always acts as the organization's leading force.	0.87
5. The organization has leaders who are capable of motivating and guiding their colleagues on the job.	0.82

Accordingly, all of the items loaded to one single factor. As seen on the table, there is no factor loading below 0.70, which is accepted, as according to Hair et al. (2010), all factor loadings should be statistically significant and loadings should be higher than 0.5.

5.2.2 Confirmatory factor analyses

A confirmatory factor analysis (CFA) was conducted using AMOS 23 to further evaluate the validity of the constructs. CFA provides the validation of the factor structure obtained in the exploratory factor analysis (EFA). In other words, in order to confirm the dimensionality obtained via EFA, and to elaborate on the reliability and validity of the scales, CFA was conducted. Loadings for each item were specified according to the priori factor.

5.2.2.1 Results for the organizational resilience scale

The measurement model, created to verify the suggested scale of 10 items and 2 sub-factors, is analyzed. As a result of the analysis, it revealed that the model does not fit well and thus some modifications are made. First of all, Chi-square values ("M.I" values) for the possible modifications are checked from the modification indices table. The modification with the highest M.I. value is applied by linking the two conceptually relevant item-errors. Since the model is not verified, item 2 is deleted from the model due to having the highest modification value. The model is rerun with the remaining nine items and two sub-factors and at the end it is observed that the model is verified. The measurement model for organizational resilience is provided below on Figure 1.

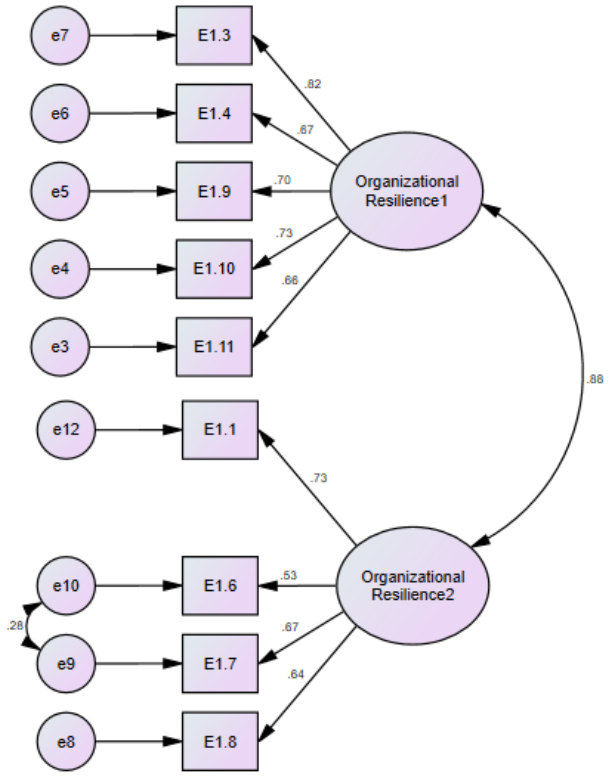

Figure 3. Measurement model for the organizational resilience scale

Figure 3 provides the nine items and two sub-factors of the measurement model and their standardized regression coefficients, factor loadings in other words, on the one-way arrows. When factor loadings are examined, it is observed, that the item 3 is the strongest indicator of the sub-factor F1 with the loading of 0.82 and the item 1 is the strongest indicator of the sub-factor F2 with the loading of 0.73. The value on two-way arrow shows the correlation value between the sub factors. Table 19 below provides factor loadings of all items of organizational resilience scale in detail.

Table 19. Confirmatory Factor Loadings for the Organizational Resilience Scale

Item No	Items	Factor Loadings
3	has the strength to use required resources.*	0.83
4	rapidly takes action.	0.67
9	is a powerful organization and not easily affected by outside factors.*	0.70
10	shows resistance to the end in order not to lose.	0.73
11	is powerful to overcome everything. *	0.66
1	stands straight to get back to its position.	0.73
6	is agile in taking required action when needed.	0.53
7	is a place where all the employees engaged to do what is required from them.	0.67
8	is successful in acting as a whole with all of its employees.	0.64

Table 19 provides factor loadings verified as a result of the confirmatory factor analysis. When factor loadings are checked, it is observed that there is no value below 0.60. The two sub factors are labeled based on the common content and meanings each of them shares. Accordingly, Factor-1 is called as ‘organizational strength’ and Factor-2 is called as ‘organizational commitment to change’.

As a second step, values about goodness of fit should be checked via confirmatory factor analysis. At this point, Model fit means to how well the covariance matrix generated by the proposed model fits to the actual covariance matrix (Hair et al., 2010). When there is a good fit, this means that there is no critical difference between the suggested and observed correlations. The fit indices in the model can be improved through the suggested modification indices regarding the differences. Modification indices are examined and items with relatively low factor loadings and correlations are eliminated by checking the standardized regression weights. Chi-square test is generally used to evaluate the fit of the model to the research data. However, since the Chi-square

test is sensitive to the sample size, there may be some rightful concerns about using it. Chi-square test tends to reject the model when sample size increases and to accept when sample size is smaller. For this reason, some other fit values had been developed alternative to the Chi-square.

First of all, fit values based on GFI should be analyzed. GFI (Goodness of Fit index) produces a value of 0 for a non-fitting model by re-scaling the difference between sample covariance and implied covariance and a value of 1 for a perfectly fitting model. Models with GFI values of 0.90 and more are usually accepted as good fit. Although GFI is a frequently used measure of fit, it is sensitive to sample size and complexity of the model. AGFI (Adjusted goodness of fit index) is a fit value derived from GFI with correction (adjustment). Similarly, AGFI values of 0.90 and more are usually accepted as good fit.

Secondly, Baseline Model Goodness of Fit (zero or independence) values should be checked. Main idea behind these values is to see how better the suggested theoretical model is compared to the baseline model, which is the worst possible model. These values are IFI (Incremental Fit Index), TLI (Tucker-Lewis Index, or NNFI "Non-normed Fit Index") and CFI (Comparative Fit Index). IFI value with 0.90 and more is accepted as a good fit and it is preferred due to being the least sensitive fit value to sample size. TLI value is also very commonly used due to being less sensitive to sample size. TLI values of 0.95 and more are accepted as good fit, and values of 0.90 and more are regarded as acceptable. Some sources even regard TLI values of 0.80 as acceptable. CFI (Comparative Fit Index) is also not much sensitive to sample size, however it is sensitive to the complexity of the model. Its values can sometimes exceed 1 or decrease to levels smaller than 0. However; in such cases, those values are fixed to 0 or 1.

RMSEA (Root Mean Square of Error Approximation) value is a measure of non-fit based on F0 and is calculated as RMSEA = √(F0 / df). As seen on the formula, this non-fit is actually calculated for degree of freedom (df). Being least sensitive to sample size makes RMSEA one of the most frequently used value for assessing goodness of fit. Although it is susceptible to the complexity of the model due to the degree of freedom, that degree of freedom is not a definite measure of model complexity makes RMSEA preferred. SRMR (Standardized RMR) value provides the difference between the observed and estimated covariance. For RMSEA and SRMR, values below 0.08 are regarded as acceptable and values below 0.05 are regarded as good-fit.

Table 20 below provides goodness of fit values for the measurement model with nine items and two sub-factors. When values of goodness of fit indices for the measurement model are examined, it is observed that results reveal good and acceptable fit. χ^2/df value is below 3; GFI and AGFI values are above 0.90; IFI, TLI and CFI values are above 0.95; RMSEA value is below 0.08 and SRMR value is below 0.05. Accordingly, the suggested scale for organizational resilience can be used in this study.

Table 20. Goodness of Fit Values for the Measurement Model of Organizational Resilience

	Goodness of Fit Values	
Chi²/df	2.17	≤3
GFI	0.96	≥ 0.90
AGFI	0.92	≥ 0.90
IFI	0.97	≥ 0.95
TLI (NNFI)	0.95	≥ 0.95
CFI	0.97	≥ 0.95
RMSEA	0.07	≤ 0.05 (0.05-0.08)
SRMR	0.04	≤ 0.05

5.2.2.2 Results for the organizational learning culture scale

The measurement model, created to verify the suggested scale of seven items, is analyzed. As a result of the analysis, it revealed that the model fits well and is verified. The measurement model for organizational learning culture is provided below on Figure 4. Figure 4 provides the seven items of the measurement model and their standardized regression coefficients, factor loadings in other words, on the one-way arrows. This shows, that item 42 is the strongest indicator of the organizational learning culture scale with the loading of 0.76. Table 21 provides factor loadings of all items in detail.

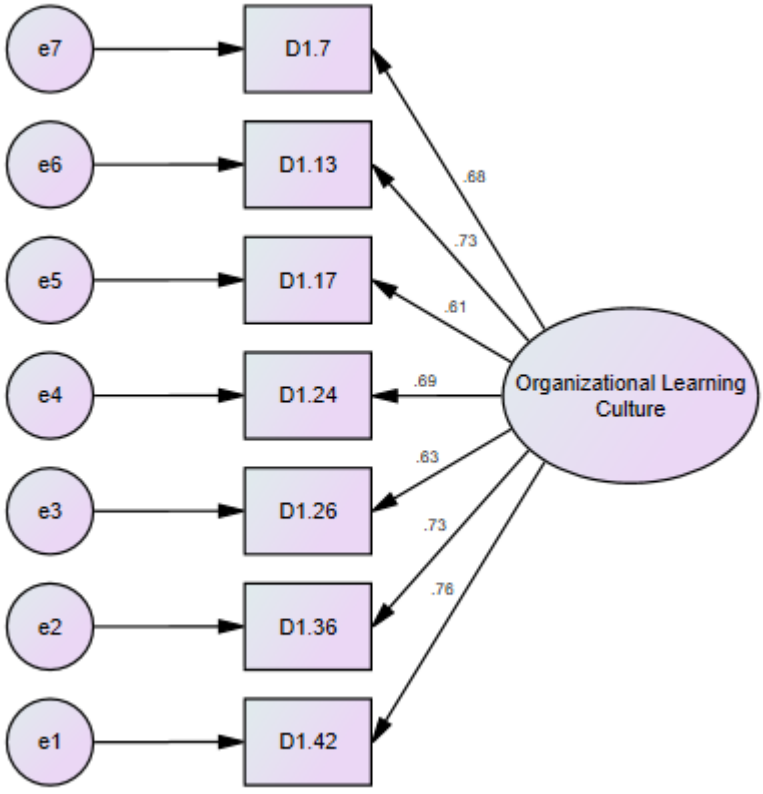

Figure 4. Measurement model for the organizational learning culture scale

Table 21 below provides factor loadings verified as a result of the confirmatory factor analysis. When factor loadings are checked, it is observed that there is no value below 0.60.

Table 21. Confirmatory Factor Loadings for Organizational Learning Culture Scale

Item No	Items	Factor Loadings
7	In my organization, people are rewarded for learning.	0.68
13	In my organization, people spend time building trust with each other.	0.73
17	In my organization, teams/groups revise their thinking as a result of group discussions or information collected.	0.61
24	My organization makes its lessons learned available to all employees.	0.69
26	My organization recognizes people for taking initiative.	0.63
36	My organization works together with the outside community to meet mutual needs.	0.73
42	In my organization, leaders continually look for opportunities to learn.	0.76

Table 22 below provides goodness of fit values for the measurement model with seven items.

Table 22 - Goodness of Fit Values for the Measurement Model of Organizational Learning Culture

	Goodness of Fit Values	
Chi^2:14.04 df:14 p:0.48		
Chi^2/df	1.00	≤3
GFI	0.98	≥ 0.90
AGFI	0.97	≥ 0.90
IFI	1.00	≥ 0.95
TLI (NNFI)	1.00	≥ 0.95
CFI	1.00	≥ 0.95
RMSEA	0.00	≤ 0.05
SRMR	0.03	≤ 0.05

To begin, the most commonly used Chi-square (χ^2) and p values are checked and it is seen that the model is significant. However, since chi-square is very sensitive to sample size, it is not sufficient alone to evaluate the fit between the model and the data. Thus, other values are also checked. When values of goodness of fit indices for the measurement model are examined, it is observed that all results reveal good-fit. χ^2/df value is below 3; GFI and AGFI are above 0.90; IFI, TLI and CFI are above 0.95 and RMSEA and SRMR are below 0.05. Accordingly, the suggested scale for organizational learning culture can be used in this study.

5.2.2.3 Results for the climate for innovation scale

The measurement model, created to verify the suggested scale of 16 items and two sub-factors, is analyzed. As a result of the analysis, it revealed that the model does not fit well and thus some modifications are made. First of all, Chi-square values ("M.I" values) for the possible modifications are checked from the modification indices table. The modification with the highest M.I. value is applied by linking the two conceptually relevant item-errors. As a result, it is observed that the model is verified. The measurement model is provided below on Figure 5. Figure 5 provides the 16 items and two sub-factors of the measurement model and their standardized regression coefficients, factor loadings in other words, on the one-way arrows. This shows, that item 2 is the strongest indicator of the sub-factor F1 with the loading of 0.76 and the item 18 is the strongest indicator of the sub-factor F2 with the loading of 0.73. The value on two-way arrow shows the correlation value between the sub-factors.

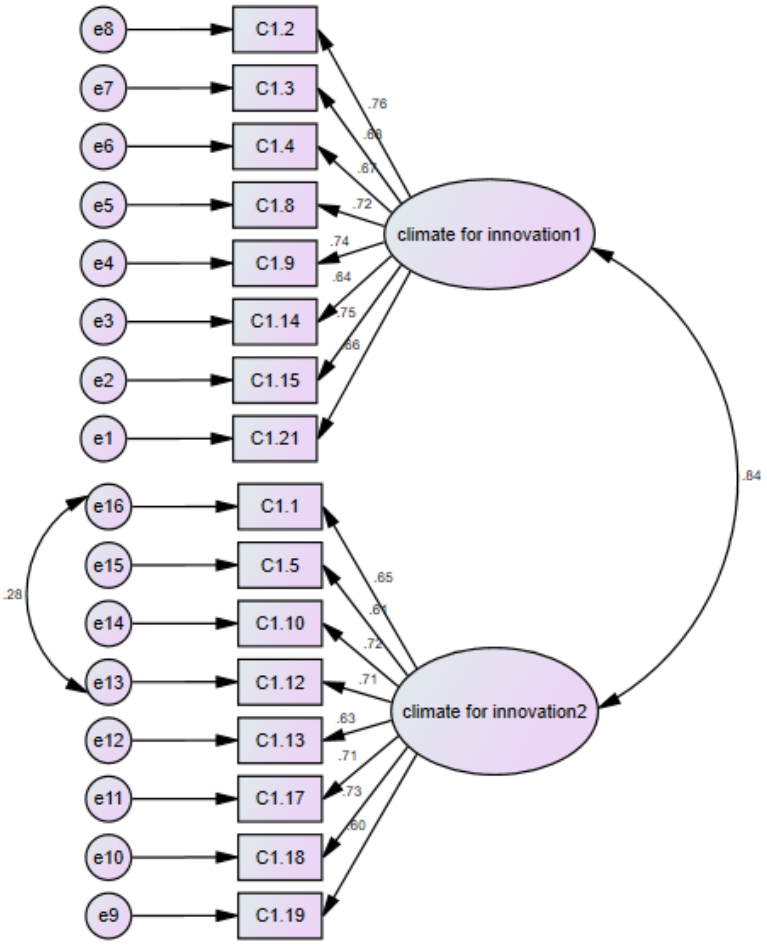

Figure 5. Measurement model for the climate for innovation scale

Table 23 below provides factor loadings of all items of climate for innovation scale verified as a result of the confirmatory factor analysis. When factor loadings are checked, it is observed that there is no value below 0.50. These sub factors are labeled based on the common content they suggested. Accordingly, as stated previously, Factor-1 is called as 'recognition of new idea' and Factor-2 is called as 'encourage for creativity'.

Table 23. Confirmatory Factor Loadings for the Climate for Innovation Scale

Item No	Items	Factor Loadings
2	Our ability to function creatively is respected by the leadership	0.76
3	Around here, people are allowed to try to solve the same problems in different way	0.68
4	The main function of members in this organization is to follow orders, which come down through channels. (R)	0.67
8	The best way to get along in this organization is to think the way the rest of the group does.(R)	0.72
9	People around here are expected to deal with problems in the same way. (R)	0.74
14	Assistance in developing new ideas is readily available.	0.64
15	There are adequate resources devoted to innovation in this organization.	0.75
21	This organization publicly recognizes those who are innovative.	0.67
1	Creativity is encouraged here.	0.65
5	Around here, a person can get in a lot of trouble by being different. (R)	0.61
10	This organization is open and responsive to change.	0.72
12	In this organization, we tend to stick to tried and true ways. (R)	0.71
13	This place seems to be more concerned with the status quo than with change. (R)	0.63
17	Lack of funding to investigate creative ideas is a problem in this organization. (R)	0.71
18	Personnel shortages inhibit innovation in this organization. (R)	0.73
19	This organization gives me free time to pursue creative ideas during the workday.	0.60

Table 24 below provides goodness of fit values for the measurement model with 16 items and two sub-factors. When values of goodness of fit indices for the measurement model are examined, it is observed that results except χ^2/df, GFI, SRMR reveal acceptable fit. χ^2/df value is below 3; GFI, IFI, TLI and CFI values are above 0.90 and SRMR value is below 0.05. AGFI (0.87) and RMSEA (0.07) values provide acceptable fit results. Accordingly, the suggested scale for climate for innovation can be used in this study.

Table 24. Goodness of Fit Values for the Measurement Model of Climate for Innovation

	Goodness of Fit Values	
Chi^2/df	2.14	≤3
GFI	0.90	≥ 0.90 (0.89-0.85)
AGFI	0.87	≥ 0.90 (0.89-0.85)
IFI	0.94	≥ 0.95
TLI (NNFI)	0.93	≥ 0.95
CFI	0.94	≥ 0.95
RMSEA	0.07	≤ 0.05 (0.06-0.08)
SRMR	0.05	≤ 0.05

5.2.2.4 Results for the environmental dynamism scale

The measurement model, formed to verify the suggested scale of five items, is analyzed. As a result of the analysis, it revealed that the model does not fit well and thus some modifications are made. First of all, Chi-square values ("M.I" values) for the possible modifications are checked from the modification indices table. The modification with the highest M.I. value is applied by connecting the two conceptually relevant item-errors. By doing this, it is observed that the model is verified. The measurement model is provided below on Figure 6.

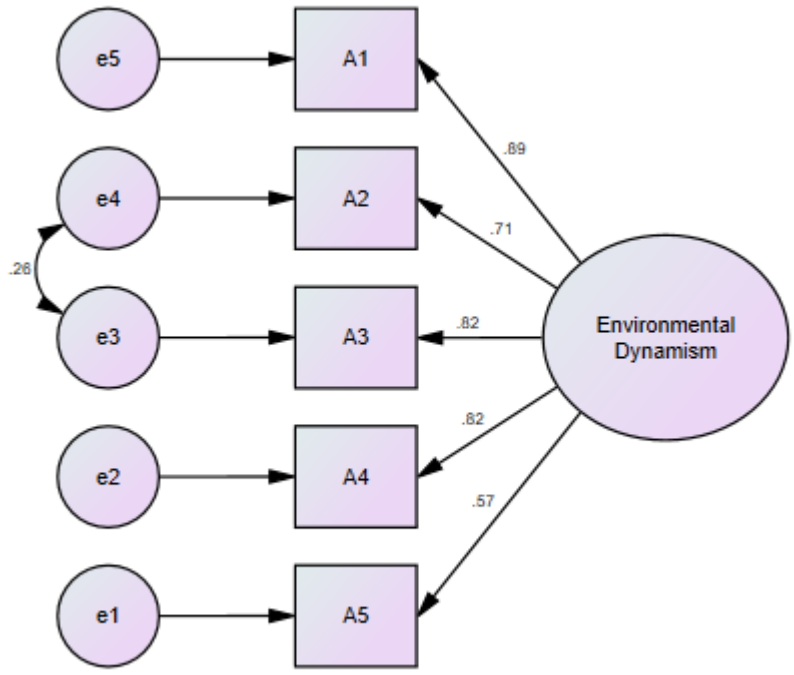

Figure 6. Measurement model for the environmental dynamism scale

Figure 6 provides the five items of the measurement model and their standardized regression coefficients, factor loadings in other words, on the one-way arrows. This shows, that item 1 is the strongest indicator of the environmental dynamism scale with the loading of 0.89. Table 25 below provides factor loadings of all items of environmental dynamism scale verified as a result of the confirmatory factor analysis. It shows that there is no factor loading below 0.50. According to Hair et al. (2010), all factor loadings should be statistically significant and loadings should be higher than 0.5.

Table 25. Confirmatory Factor Loadings for the 'Environmental Dynamism Scale

Item No	Items	Factor Loadings
1	Our firm must rarely change its marketing practices to keep up with the market and competitors.	0.89
2	The rate at which products/services are getting obsolete in the industry is very slow. (e.g. basic metal like copper).	0.71
3	Actions of competitors are quite easy to predict (as in some primary industries).	0.82
4	Demand and consumer tastes are fairly easy to forecast (e.g. for milk companies.	0.82
5	The production/service technology is not subject to very much change and is well established (e.g. in steel production).	0.57

Table 26 below provides goodness of fit values for the measurement model with five items. To begin, the most commonly used Chi-square (χ^2) and p values are checked and it is seen that the model is significant. However, since chi-square is very sensitive to sample size, it is not sufficient alone to evaluate the fit between the model and the data. Thus, other values are also checked. When values of goodness of fit indices for the measurement model are examined, it is observed that all results except RMSEA reveal good-fit. χ^2/df value is below 3; GFI and AGFI are above 0.90; IFI, TLI and CFI are above 0.95 and SRMR is below 0.05. RMSEA value is at acceptable level (0.052). Accordingly, the suggested scale for environmental dynamism can be used in this study.

Table 26. Goodness of Fit Values for the Measurement Model of Environmental Dynamism

	Goodness of Fit Values	
Chi^2:6.71 df:4 p:0.15		
Chi^2/df	1.68	≤3
GFI	0.99	≥ 0.90
AGFI	0.96	≥ 0.90
IFI	1.00	≥ 0.95
TLI (NNFI)	0.99	≥ 0.95
CFI	1.00	≥ 0.95
RMSEA	0.05	≤ 0.05 (0,06-0.08)
SRMR	0.02	≤ 0.05

5.2.2.5 Results for the transformational leadership scale

The measurement model, created to verify the suggested scale of five items, is analyzed. As a result of the analysis, it revealed that the model does not fit well and thus some modifications are made. First of all, Chi-square values ("M.I" values) for the possible modifications are checked from the modification indices table. The modification with the highest M.I. value is applied by linking the two conceptually relevant item-errors. By doing this, it is observed, that the model is verified. The measurement model is provided below on Figure 7.

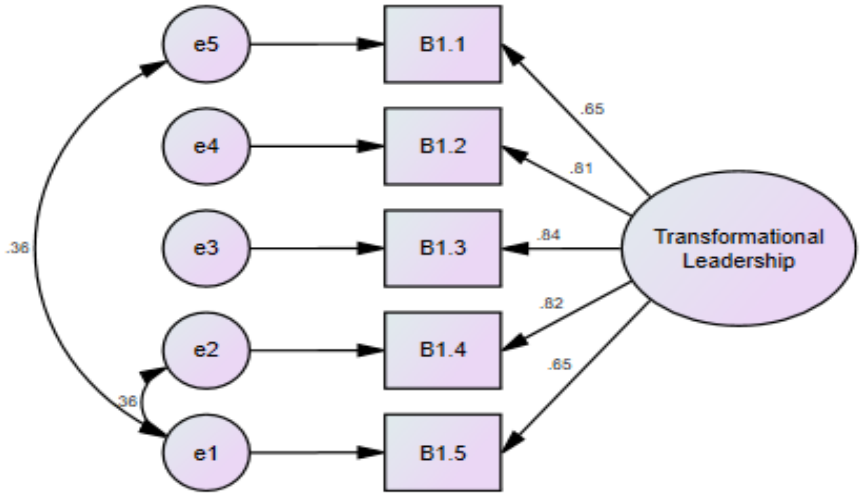

Figure 7. Measurement model for the 'transformational leadership' scale

Figure 7 provides the five items of the measurement model and their standardized regression coefficients, factor loadings in other words, on the one-way arrows. This shows, that item 3 is the strongest indicator of the transformational leadership scale with the loading of 0.84.

Table 27 below provides all factor loadings for transformational leadership scale verified as a result of the confirmatory factor analysis. It shows that there is no factor loading below 0.60.

Table 27. Confirmatory Factor Loadings for the Transformational Leadership Scale

Item No	Items	Factor Loadings
1	The firm's management is always on the lookout for new opportunities for the unit/department/organization.	0.66
2	The firm's management has a clear common view of its final aims.	0.81
3	The firm's management succeeds in motivating the rest of the company.	0.84
4	The firm's management always acts as the organization's leading force.	0.83
5	The organization has leaders who are capable of motivating and guiding their colleagues on the job.	0.66

Table 28 below provides goodness of fit values for the measurement model with five items. To begin, the most commonly used Chi-square (χ^2) and p values are checked and it is seen that the model is significant. However, since chi-square is very sensitive to sample size, it is not sufficient alone to evaluate the fit between the model and the data. Thus, other values are also checked. When values of goodness of fit indices for the measurement model are examined, it is observed that all results reveal good-fit. χ^2/df value is below 3; GFI and AGFI are above 0.90; IFI, TLI and CFI are above 0.95 and RMSEA and SRMR are below 0.05. Accordingly, the suggested scale for transformational leadership can be used in this study.

Table 28. Goodness of Fit Values for the Measurement Model of Transformational Leadership

	Goodness of Fit Values	
Chi²:2.503 df:3 p:0.475		
Chi²/df	0.83	≤3
GFI	1.00	≥ 0.90
AGFI	0.98	≥ 0.90
IFI	1.00	≥ 0.95
TLI (NNFI)	1.00	≥ 0.95
CFI	1.00	≥ 0.95
RMSEA	0.00	≤ 0.05 (0.06-0.08)
SRMR	0.00	≤ 0.05

5.2.3 Reliability analysis results

Table 29 below provides reliability analysis results for each scale conducted before completing the confirmatory factor analyses.

Table 29. Reliabilities of Scales

	Number of Items	Cronbach Alpha	Reliability Levels
Organizational Resilience	9	0.88	High
F1 Organizational Strength	5	0.84	High
F2 Organizational Commitment to Change	4	0.76	Normal
Organizational Learning Culture	7	0.86	High
Climate for Innovation	16	0.92	High
F1 Recognition for New Ideas	8	0.89	High
F2 Encourage for Creativity	8	0.87	High
Environmental Dynamism	5	0.88	High
Transformational Leadership	5	0.89	High

As a result of the reliability analysis, 'Environmental Dynamism' scale reveals high level of reliability (α=0.88); 'Transformational Leadership' scale reveals high level of reliability (α=0.89); 'Climate for Innovation' scale reveals high level of reliability (α=0.92); its sub factors 'Recognition for New Ideas' (α=0.89) and 'Encourage for Creativity' (α=0.87) also reveal high reliabilities; 'Organizational Learning Culture' scale with 7 items reveals high level of reliability (α=0.86); 'Organizational Resilience' scale reveals high level of reliability (α=0.88), its sub factor 'Organizational Strength' reveals also high level of reliability while sub factor 'Organizational Commitment to Change' results reliable.

5.2.4 Hypotheses testing

Pearson Correlation coefficient is used to identify the degree of non-causal relationships between two numeric variables. In order to observe the effect of organizational learning culture and climate for innovation on organizational resilience, simple linear regression is conducted with enter method. Structural Equation Modeling is conducted to test whether climate for innovation has a mediating and environmental dynamism has a moderating effect on the relationship between organizational learning culture and resilience.

5.2.4.1 Regression analyses results

At first, multiple linear regression model is created to identify the effects of organizational learning culture and climate for innovation (as independent variables) on organizational resilience (as the dependent variable). Before testing the model, lack of multicollinearity is one of the assumptions of multiple linear regression analysis. Multicollinearity problem refers to high level of relationship between the independent variables included in the model. Therefore, first, the relationship between organizational learning culture and climate for innovation is analyzed. Since high level of relationship between these independent variables is obtained, they are not included in the model at the same time, and tested with separate models via simple linear regression analyses. Result are provided below in detail.

As a result of the simple linear regression analysis, which was conducted to see the effect of organizational learning culture on organizational resilience, regression model proves statistically significant as seen on Table 30 below ($F=105.49$; $p<0.001$).

Accordingly, 52% ($R^2 = 0.52$) of a change on organizational resilience is explained by organizational learning culture included in the model.

Table 30. The Effect of Organizational Learning Culture on Organizational Resilience

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.88	0.170		5.27	0.00***
Organizational Learning Culture	0.03	0.003	0.72	10.27	0.00***
Model Summary: R=0.72; R2 = 0.52; Adj. R2 = 0.51; F= 105.49; p=0.000***					

***: *p<0.001*

The related regression formula is as:

Organizational Resilience = 0.88 + 0.03 x Organizational Learning Culture

Coefficient of organizational learning culture as independent variable is significant ($p<0.001$). Organizational learning culture has a positive effect on organizational resilience. In other words, one unit of change on organizational learning culture causes to a 0.032 unit (B) change on organizational resilience. This shows, that Hypothesis 1, which states that organizational learning culture significantly predicts organizational resilience, is supported statistically.

Below, regression results for each sub-factor of organizational resilience (organizational resilience 1: 'organizational strength'; organizational resilience 2: organizational commitment to change) with organizational learning culture are provided.

a) Organizational learning culture – organizational strength

As a result of the simple linear regression analysis, which was conducted to see the effect of organizational learning culture on organizational strength, regression model proves statistically significant as seen on Table 31 below (F=87.67; p<0.001).

Table 31. The Effect of Organizational Learning Culture on Organizational Strength

Independent Variable	B	Std. Error	Beta	t	p
Constant	1.06	0.298		3.55	0.001***
Organizational Learning Culture	0.05	0.006	0.69	9.36	0.000***
Model Summary: R=0.69; R2 = 0.47; Adj. R2 = 0.46; F= 87.67; p=0.000***					

****: p<0.001*

The related regression formula is as:

Organizational Strength=1.06 + 0.05 x Organizational Learning Culture

Accordingly, 46% (R^2 = 0.46) of a change on organizational strength is explained by organizational learning culture included in the model. This means, organizational learning culture has a positive significant effect on organizational strength.

b) Organizational learning culture – organizational commitment to change

As a result of the simple linear regression analysis, which was conducted to see the effect of organizational learning culture on organizational commitment to change, regression model proves statistically significant as seen on Table 32 below (F=67.68; p<0.001).

Table 32. The Effect of Organizational Learning Culture on Organizational Commitment to Change

Independent Variable	B	Std. Error	Beta	t	p
Constant	1.59	0.272		5.85	0.00***
Organizational Learning Culture	0.04	0.005	0.64	8.23	0.00***
Model Summary:					
R=0.64; R2 = 0.41; Adj. R2 = 0.40; F= 67.68; p=0.000***					

***: *p<0.001*

The related regression formula is as:

Organizational Commitment to Change = 1.59 + 0.04 x Organizational Learning Culture

Accordingly, 41% ($R^2 = 0.41$) of a change on organizational commitment to change is explained by organizational learning culture included in the model. This means, organizational learning culture has a positive significant effect on organizational commitment to change.

Below, the results of regression analyses testing the effect of organizational learning culture on climate for innovation are provided. As a result of the simple linear regression, which was conducted to see the effect of organizational learning culture on climate for innovation, regression model proves statistically significant as seen on Table 33 below ($F=175.70$; $p<0.001$).

Table 33. The Effect of Organizational Learning Culture on Climate for Innovation

Independent Variable	B	Std. Error	Beta	t	p
Constant	.73	.154		4.77	0.00**
Organizational Learning Culture	.04	.003	.78	12.56	0.00***

Model Summary:

R=0.78; $R^2 = 0.61$; Adj. $R^2 = 0.61$; F= 175.70; p=0.00***

***: *p<0.001*

The related regression formula is as:

Climate for Innovation = 0.73 + 0.04 x Organizational Learning Culture

Accordingly, organizational learning culture explains 61% of climate for innovation. This shows, that Hypothesis 2a, which states that organizational learning culture significantly predicts climate for innovation, is statistically supported.

Below, regression results for each sub-factor of climate for innovation (Climate for Innovation-1: recognition for new ideas; Climate for innovation-2: encourage for creativity) with organizational learning culture are provided.

c) Organizational learning culture – recognition for new ideas

As a result of the simple linear regression, which was conducted to see the effect of organizational learning culture on 'recognition for new ideas', regression model proves statistically significant as seen on Table 34 below (F=141.01; p<0.001). Accordingly, organizational learning culture explains 58% of 'recognition for new ideas'.

Table 34. The Effect of Organizational Learning Culture on Recognition for New Ideas

Independent Variable	B	Std. Error	Beta	t	p
Constant	.60	.182		3.30	0.001**
Organizational Learning Culture	.04	.003	.77	11.88	0.000***

Model Summary:

R=0.77; $R^2 = 0.59$; Adj. $R^2 = 0.58$; F= 141.01; p=0.000***

***: *p<0.001*

The related regression formula is as:

Recognition for New Ideas = 0.60 + 0.04 x Organizational Learning Culture

d) Organizational learning culture – encourage for creativity

As a result of the simple linear regression, which was conducted to see the effect of organizational learning culture on 'encourage for creativity', regression model proves statistically significant as seen on Table 34 below (F=99.67; p<0.001). Accordingly, organizational learning culture explains 50% of 'encourage for creativity'.

Table 35. The Effect of Organizational Learning Culture on Encourage for Creativity

Independent Variable	B	Std. Error	Beta	t	p
Constant	.87	.170		5.08	0.00**
Organizational Learning Culture	.03	.003	.71	9.98	0.00***

Model Summary:

R=0.71; $R^2 = 0.50$; Adj. $R^2 = 0.50$; F= 99.67; p=0.000*** ***: p<0.001

The related regression formula is as:

Encourage for Creativity = 0.87 + 0.03 x Organizational Learning Culture

Table 36 below provides the simple linear regression results for the effect of climate for innovation on organizational resilience, as suggested in Hypothesis 2b. As a result of the simple linear regression analysis, which was conducted to see the effect of climate for innovation on organizational resilience, regression model proves statistically significant as seen on Table 35 ($F=293.35$; $p<0.001$). Accordingly, 75% ($R^2 = 0.75$) of a change on organizational resilience is explained by climate for innovation included in the model.

Table 36. The Effect of Climate for Innovation on Organizational Resilience

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.36	0.13		2.77	0.007**
Climate for Innovation	0.84	0.05	0.87	17.13	0.000***

Model Summary:

$R=0.87$; $R^2 = 0.75$; Adj. $R^2 = 0.75$; $F= 293.35$; $p=0.000$***

***: *p<0.001*

The related regression formula is as:

Organizational Resilience = 0.36 + 0.84 x Climate for Innovation

Coefficient of climate for innovation as independent variable is significant ($p<0.001$). Climate for innovation has a positive effect on organizational resilience. In other words, one unit of change on climate for innovation causes to a 0.84 unit (B) change on organizational resilience. This shows, that Hypothesis 2b, which states that climate for innovation significantly predicts organizational resilience, is statistically supported.

e) Recognition for new ideas – organizational strength

As a result of the simple linear regression analysis, which was conducted to see the effect of 'recognition for new ideas' on 'organizational strength', regression model proves statistically significant as seen on Table 37 below (F=121.94; p<0.001).

Table 37. The Effect of Recognition for New Ideas on Organizational Strength

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.88	0.27		3.27	0.001**
Recognition for New Ideas	1.07	0.10	0.74	11.04	0.000***

Model Summary:

R=0.74; $R^2 = 0.55$; Adj. $R^2 = 0.55$; F= 121.94; p=0.000***

***: *p<0.001*

The related regression formula is as:

Organizational Strength = 0.88 + 1.07 x Recognition for New Ideas

Accordingly, 55% ($R^2 = 0.55$) of a change on 'organizational strength' is explained by 'recognition for new ideas' included in the model. 'Recognition for new ideas' positively affects 'organizational strength'.

f) Encourage for creativity - organizational strength

As a result of the simple linear regression analysis, which was conducted to see the effect of 'encourage for creativity' on 'organizational strength', regression model proves statistically significant as seen on Table 38 below (F=83.61; p<0.001).

Table 38. The Effect of Encourage for Creativity on Organizational Strength

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.89	0.32		2.77	0.007**
Encourage for Creativity	1.15	0.13	0.68	9.14	0.000***

Model Summary:

R=0.68; $R^2 = 0.46$; Adj. $R^2 = 0.45$; F= 83.61; p=0.000***

***: *p<0.001*

The related regression formula is as:

Organizational Strength =0.89 + 1.15 x Encourage for Creativity

Accordingly, 46% ($R^2 = 0.46$) of a change on 'organizational strength' is explained by 'encourage for creativity' included in the model. 'Encourage for Creativity' positively affects 'organizational strength'.

g) Recognition for new ideas – organizational commitment to change

As a result of the simple linear regression analysis, which was conducted to see the effect of 'recognition for new ideas' on 'organizational commitment to change', regression model proves statistically significant as seen on Table 39 below (F=135.54; p<0.001).

Table 39. The Effect of Recognition for New Ideas on Organizational Commitment to Change

Independent Variable	B	Std. Error	Beta	t	p
Constant	1.21	0.27		5.38	0.00**
Recognition for New Ideas	0.95	0.08	0.76	11.64	0.00***

Model Summary:

R=0.76; $R^2 = 0.58$; Adj. $R^2 = 0.57$; F= 135.54; p=0.000***

***: *p<0.001*

The related regression formula is as:

Organizational Commitment to Change =1.21 + 0.95 x Recognition for New Ideas

Accordingly, 58% ($R^2 = 0.58$) of a change on 'organizational commitment to change' is explained by 'recognition for new ideas' included in the model. 'Recognition for new ideas' positively affects 'organizational commitment to change'.

h) Encourage for creativity - organizational commitment to change

As a result of the simple linear regression analysis, which was conducted to see the effect of 'encourage for creativity' on 'organizational commitment to change', regression model proves statistically significant as seen on Table 40 below (F=279.03; p<0.001).

Table 40. The Effect of Encourage for Creativity on Organizational Commitment to Change

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.60	0.19		3.12	0.002**
Encourage for Creativity	1.26	0.08	0.86	16.70	0.000***

Model Summary:

R=0.86; $R^2 = 0.74$; Adj. $R^2 = 0.74$; F= 279.03; p=0.000*** ***: p<0.001

The related regression formula is as:

Organizational Commitment to Change = 0.60 + 1.26 x Encourage for Creativity

Accordingly, 74% ($R^2 = 0.74$) of a change on 'organizational commitment to change' is explained by 'encourage for creativity' included in the model. 'Encourage for creativity' positively affects 'organizational commitment to change'.

5.2.4.2 Mediation model results

Mediation analysis via Structural Equation Modeling is applied to define consecutive causal relationships between variables. In practice, a mediating variable helps to identify a one-way causal relationship (direct effect) between the independent and dependent variable in more detail.

Mediation is believed to happen, when independent variable accounts for a certain variance in the mediator variable that needs also to account for the variance in the dependent variable. This means, that the mediator variable carries the effect of the independent variable on the dependent variable (Baron and Kenny, 1986). As stated in Mafabi et al. (2015), according to Baron and Kenny (1986) and Kenny et al. (1998), mediation occurs when the following conditions are provided:

> • The variations in the independent variable significantly account for variance in the presumed mediator;
>
> • The variations in the mediator significantly account for variance in the dependent variable;
>
> • The variations in the independent variable significantly account for variance in the dependent variable;
>
> • The effect of the independent variable on the dependent variable significantly reduces when the mediator is included in the third equation. (p. 570)

Accordingly, this study examined the mediating effect of innovation on creative climate and organizational resilience. This investigation was undertaken by testing H3, that there is a mediation effect of innovation on the relationship between creative climate and organizational resilience. To test the hypothesis, mediation conditions were analyzed by running regression models and also testing by using SEM via AMOS.

Mediation analysis

Figure 8 below provides the hypothesized mediation model of this study, as provided in Hypothesis 3.

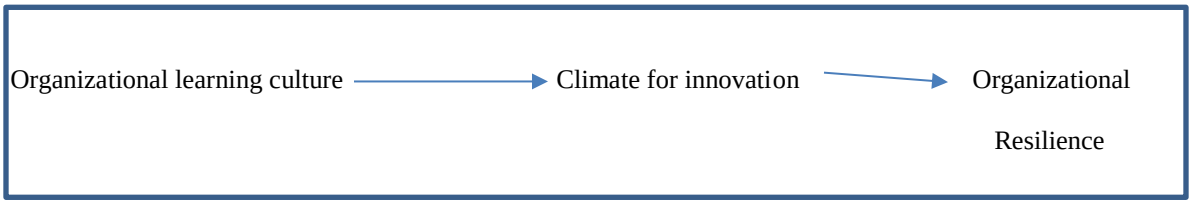

Figure 8. Mediation model

Organizational learning culture being predicting variable (independent), organizational resilience being dependent variable and climate for innovation being mediating variable; the direct effect from organizational learning culture to organizational resilience should be statistically significant. If there is no relationship between organizational learning culture and organizational resilience, this would mean, that there is no relationship to mediate.

There are two types of mediations as partial mediation and full mediation. Whether climate for innovation mediates in our suggested theoretical model is analyzed and results are provided on the Table 41 below.

Table 41. Results for the Mediation Model

Mediation Hypothesis	Without Mediation	With Mediation	Mediation Type
Org. Learning Culture - Climate for Innovation - Org. Resilience	0.72 (0.00)***	0.11 (0.19)	Full mediation

***: $p<0.001$

As seen on Table 41, first the significance of the direct effect without the mediating variable is checked. The first column shows the result without the mediating variable.

The values show the standardized direct effects and the ones in parenthesis show significances. Accordingly, the effect is statistically significant ($p<0.001$).

Below are the stages according to Baron and Kenny (1986) provided. Based on the procedure suggested by Baron and Kenny (1986), the hypothesized mediation effect is tested by conducting three consecutive regression analyses to meet the three criteria of mediation. Below are stages of the mediation analyses provided.

Stage 1

Figure 9 below provides the relationship between learning culture and resilience without the mediating variable.

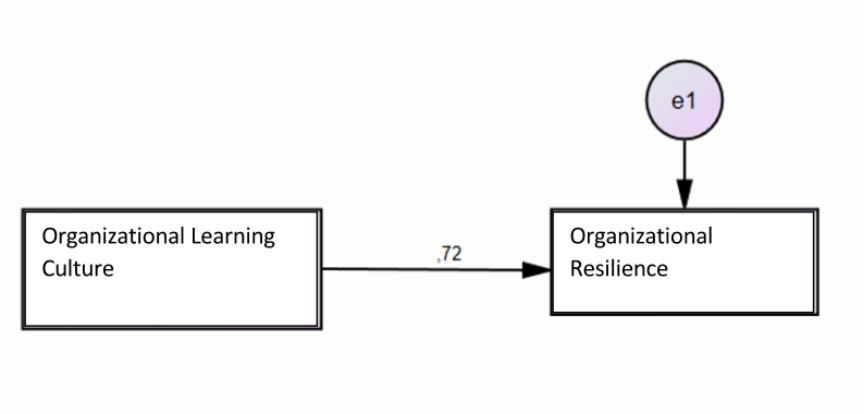

Figure 9. Stage 1 of main mediation model

At the first stage (Stage 1), according to the mediation conditions suggested by Baron and Kenny (1986), a direct relationship between organizational learning culture and organizational resilience is tested and the result reveals as significant. Therefore, we can continue with the second stage for mediation analysis. Below is the regression formula produced at the first stage.

The related regression formula is as:

Organizational Resilience = 0.88 + 0.03 x Organizational Learning Culture

Stage 2

Figure 10 below provides the relationship without the direct effect of learning culture on resilience.

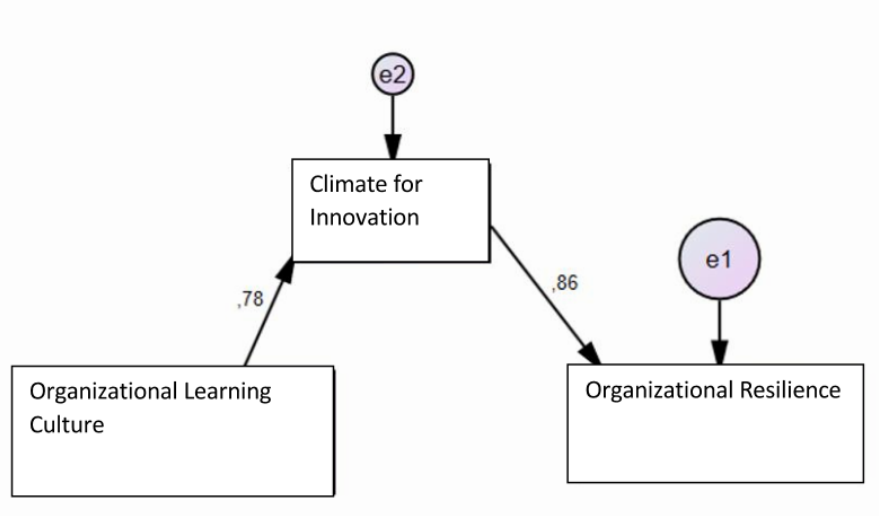

Figure 10. Stage 2 of main mediation model

At the second stage, the zero-order relationship between organizational learning culture and climate for innovation; and between climate for innovation and organizational resilience are tested and the results reveal as significant.

The related regression formulas are as:

Climate for Innovation = 0.73 + 0.04 x Organizational Learning Culture

Organizational Resilience = 0.36 + 0.84 x Climate for Innovation

Stage 3 (With mediating variable)

Figure 11 below provides the relationship with the mediating variable added.

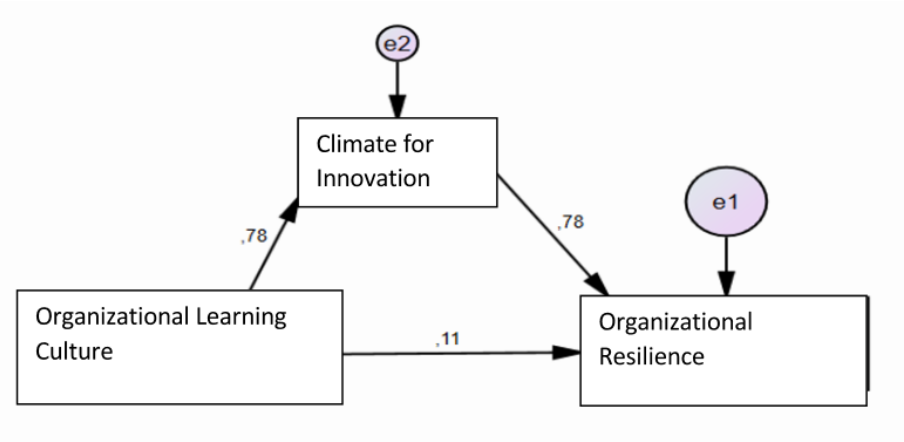

Figure 11. Stage 3 of main mediation model

At the third stage, the suggested mediating variable is controlled in the model. When it is included, the relationship (path) between organizational learning culture and organizational resilience becomes non-significant when adding the mediating effect of climate for innovation and therefore climate for innovation fully mediates this direct relationship.

The related regression formula is as:

Organizational Resilience= 0.33 + 0.005 x Organizational Learning Culture + 0.76 x Climate for Innovation

This analysis supports Hypothesis 3 (H3), that organizational climate for innovation significantly mediates the relationship between organizational learning culture and organizational resilience. Accordingly, it can be concluded, that the effect of organizational learning culture on organizational resilience can be best explained through the existence of climate for innovation.

a) Organizational learning culture - recognition for new ideas - organizational strength

Stage 1 (without mediating variable)

Figure 12 below provides the relationship between learning culture and organizational strength without the mediating variable.

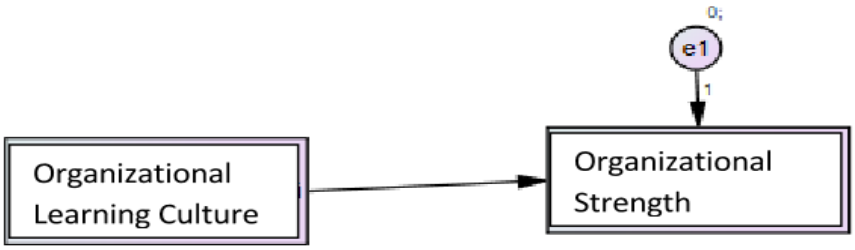

Figure 12. Stage 1 of model a

At the first stage, according to the mediation conditions suggested by Baron and Kenny (1986), a direct relationship between organizational learning culture and 'organizational strength' is tested and the result reveals as significant. Therefore, we can continue with the second stage for mediation analysis. Below is the regression formula produced at the first stage.

The related regression formula is as:

Organizational Strength= 1.06 + 0.05 x Organizational Learning Culture

Stage 2

Figure 13 below provides the relationship without the direct effect of learning culture on organizational strength.

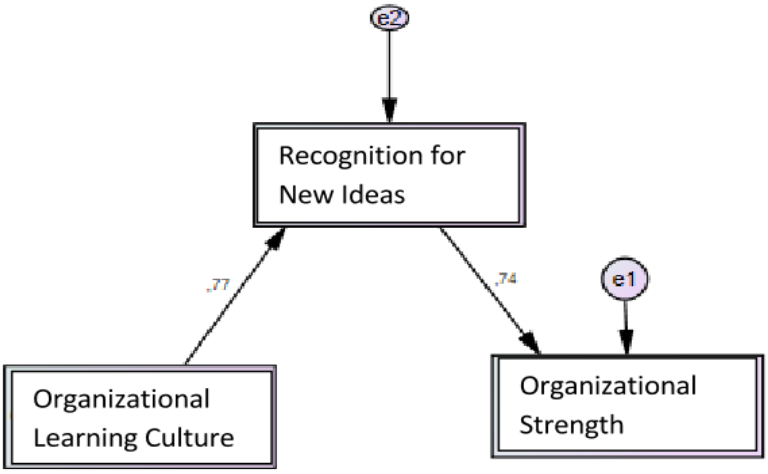

Figure 13. Stage 2 of model a

At the second stage, the zero-order relationship between organizational learning culture and 'recognition for new ideas'; and between 'recognition for new ideas' and 'organizational strength' are tested and the results reveal as significant.

The related regression formulas are as:

Recognition for New Ideas = 0.60 + 0.04 x Organizational Learning Culture

Organizational Strength = 0.88 + 1.07 x Recognition for New Ideas

Stage 3

Figure 14 below provides the relationship between learning culture and organizational strength with the mediating variable added.

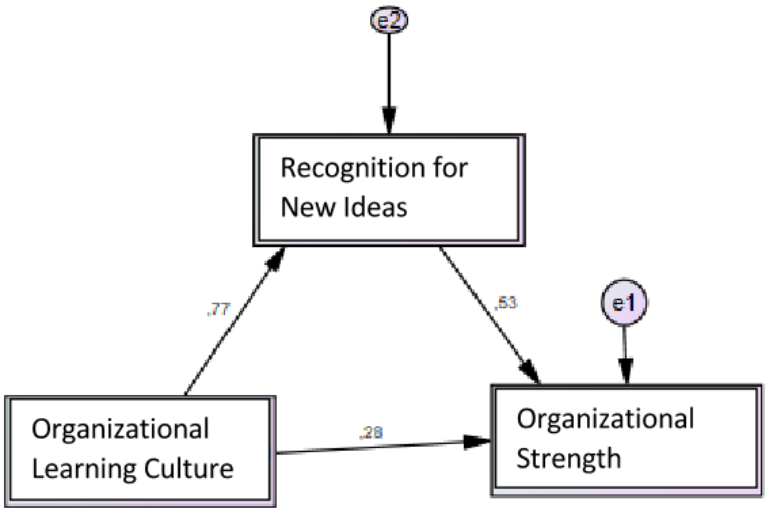

Figure 14. Stage 3 of model a

At the third stage, the suggested mediating variable is controlled in the model. When it is included, the relationship (path) between organizational learning culture and 'organizational strength' becomes less significant when adding the mediating effect of 'recognition for new ideas' and therefore 'recognition for new ideas' partially mediates this direct relationship.

While the direct relationship between organizational learning culture and 'organizational strength' is significant without 'recognition for new ideas', the relationship becomes less strong when 'recognition for new ideas' is included. Therefore, 'recognition for new ideas' partially mediates this direct relationship.

The related regression formula is as:

Organizational Strength = 0.60 + 0.76 x Recognition for New Ideas + 0.02 x Organizational Learning Culture

b) Organizational learning culture - recognition for new ideas - organizational commitment to change

Stage 1

Figure 15 below provides the relationship between learning culture and commitment to change without the mediating variable.

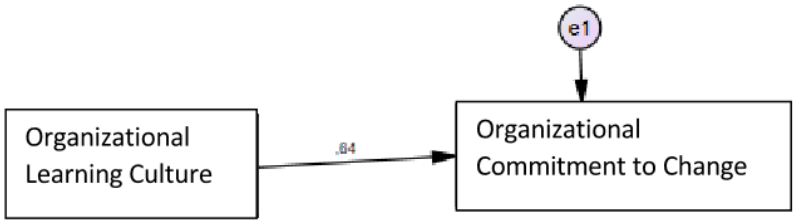

Figure 15. Stage 1 of model b

At the first stage, according to the mediation conditions suggested by Baron and Kenny (1986), a direct relationship between organizational learning culture and 'organizational commitment to change' is tested and the result reveals as significant. Therefore, we can continue with the second stage for mediation analysis. Below is the regression formula produced at the first stage.

The related regression formula is as:

Organizational Commitment to Change = 1.60 + 0.04 x Organizational Learning Culture

Stage 2

Figure 16 below provides the relationship without the direct effect of learning culture on organizational commitment to change.

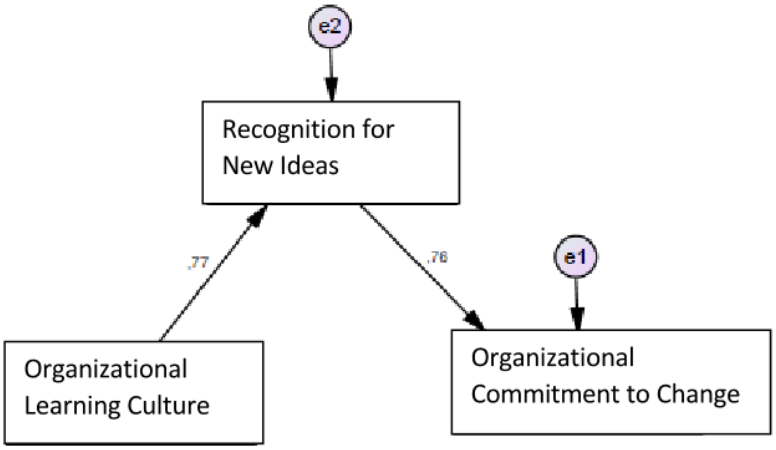

Figure 16. Stage 2 of model b

At the second stage, the zero-order relationship between organizational learning culture and 'recognition for new ideas'; and between 'recognition for new ideas' and 'organizational commitment to change' are tested and the results reveal as significant. The related regression formulas are as:

Recognition for New Ideas = 0.60 + 0.04 x Organizational Learning Culture

Organizational Commitment to Change = 1.21 + 0.95 x Recognition for New Ideas

Stage 3

Figure 17 below provides the relationship between learning culture and organizational commitment to change with the mediating variable added.

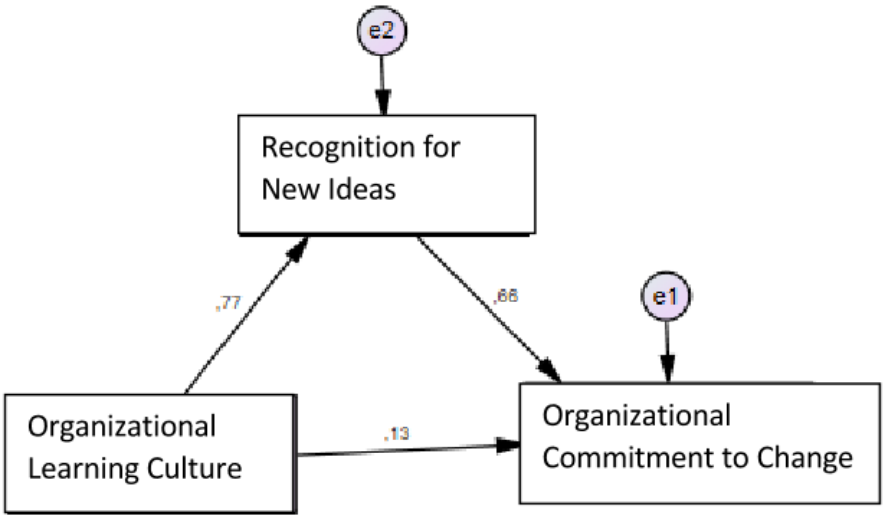

Figure 17. Stage 3 of model b

At the third stage, the suggested mediating variable is controlled in the model. When it is included, the relationship (path) between organizational learning culture and 'organizational commitment to change' becomes non-significant when adding the mediating effect of 'recognition for new ideas' and therefore 'recognition for new ideas' fully mediates this direct relationship.

The related regression formula is as:

Organizational Commitment to Change = 1.10 + 0.82 x Recognition for New Ideas + 0.01 x Organizational Learning Culture

c) Organizational learning culture - encourage for creativity - organizational strength

Stage 1

Figure 18 below provides the relationship between learning culture and organizational strength without the mediating variable.

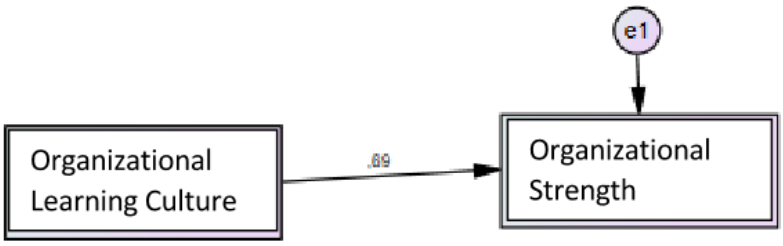

Figure 18. Stage 1 of model c

At the first stage, according to the mediation conditions suggested by Baron and Kenny (1986), a direct relationship between organizational learning culture and 'organizational strength' is tested and the result reveals as significant. Therefore, we can continue with the second stage for mediation analysis. Below is the regression formula produced at the first stage.

The related regression formula is as:

Organizational Strength = 1.06 + 0.05 x Organizational Learning Culture

Stage 2

Figure 19 below provides the relationship without the direct effect of learning culture on organizational strength.

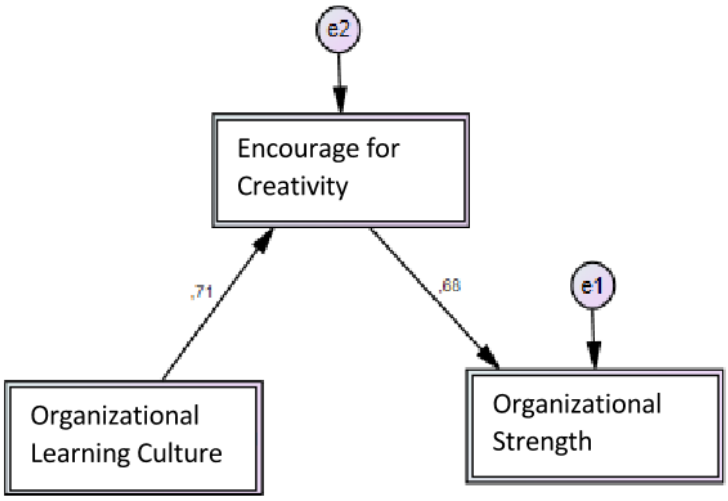

Figure 19. Stage 2 of model c

At the second stage, the zero-order relationship between organizational learning culture and 'encourage for creativity'; and between 'encourage for creativity' and 'organizational strength' are tested and the results reveal as significant.

The related regression formulas are as:

Encourage for Creativity = 0.87 + 0.04 x Organizational Learning Culture

Organizational Strength = 0.89 + 1.07 x Encourage for Creativity

Stage 3

Figure 20 below provides the relationship between learning culture and organizational strength with the mediating variable added.

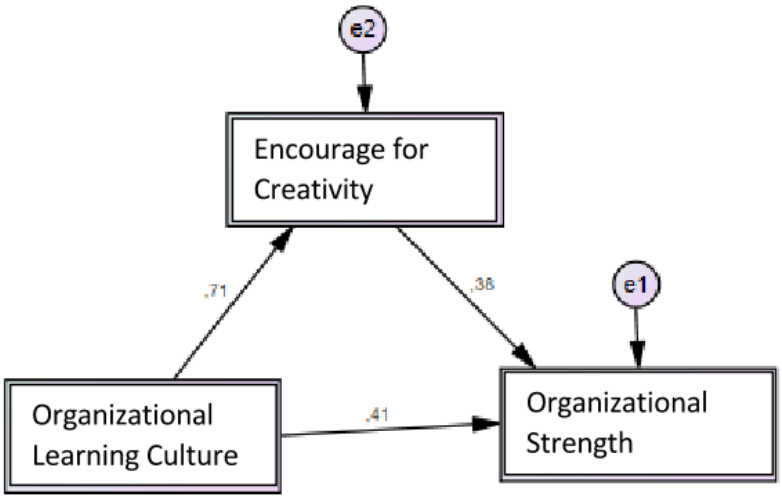

Figure 20. Stage 3 of model c

At the third stage, the suggested mediating variable is controlled in the model. When it is included, the relationship (path) between organizational learning culture and 'organizational strength' becomes less significant when adding the mediating effect of 'encourage for creativity' and therefore 'encourage for creativity' partially mediates this direct relationship.

The related regression formula is as:

Organizational Strength = 0.50 + 0.65 x Encourage for Creativity + 0.03 x Organizational Learning Culture

d) Organizational learning culture - encourage for creativity - organizational commitment to change

Stage 1

Figure 21 below provides the relationship between learning culture and organizational commitment to change without the mediating variable.

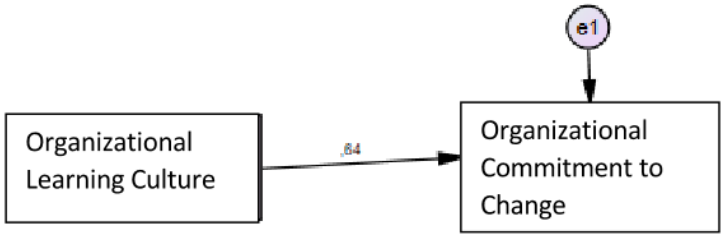

Figure 21. Stage 1 of model d

At the first stage, according to the mediation conditions suggested by Baron and Kenny (1986), a direct relationship between organizational learning culture and 'organizational commitment to change' is tested and the result reveals as significant. Therefore, we can continue with the second stage for mediation analysis. Below is the regression formula produced at the first stage.

The related regression formula is as:

Organizational Commitment to Change = 1.59 + 0.04 x Organizational Learning Culture

Stage 2

Figure 22 below provides the relationship without direct effect of learning culture on organizational commitment to change.

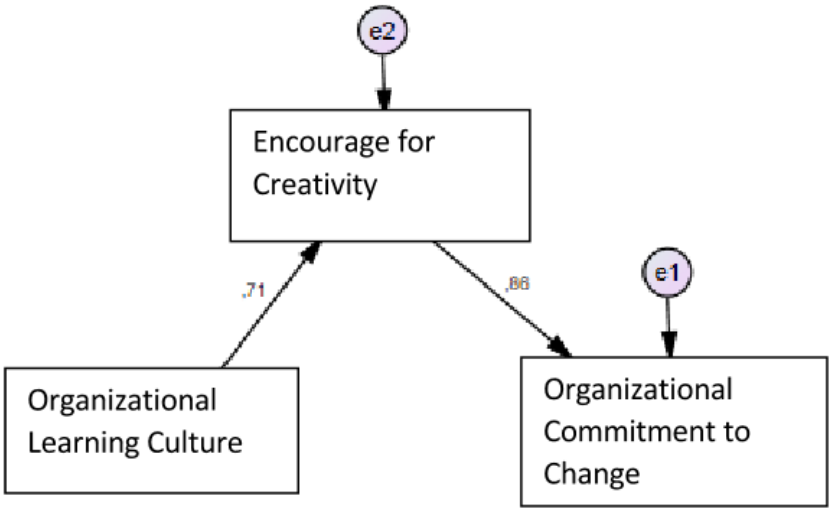

Figure 22. Stage 2 of model d

At the second stage, the zero-order relationship between organizational learning culture and 'encourage for creativity'; and between 'encourage for creativity' and 'organizational commitment to change' are tested and the results reveal as significant. The related regression formulas are as:

Encourage for Creativity = 0.87 + 0.03 x Organizational Learning Culture

Organizational Commitment to Change = 0.60 + 1.26 x Encourage for Creativity

Stage 3

Figure 23 below provides the relationship between learning culture and organizational commitment to change with the mediating variable included.

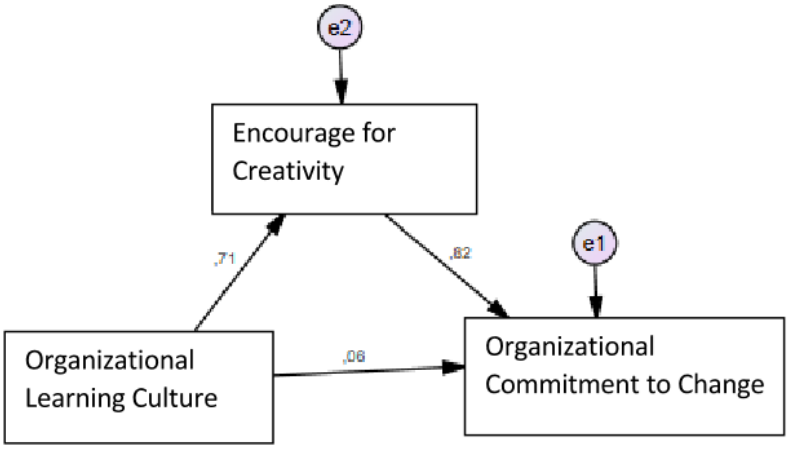

Figure 23. Stage 3 of model d

At the third stage, the suggested mediating variable is controlled in the model. When it is included, the relationship (path) between organizational learning culture and 'organizational commitment to change' becomes non- significant when adding the mediating effect of 'Encourage for Creativity' and therefore 'Encourage for Creativity' fully mediates this direct relationship.

The related regression formula is as:

Organizational Commitment to Change = 0.56 + 1.20 x Encourage for Creativity + 0.004 x Organizational Learning Culture

To sum these mediation analyses, the results revealed, that being sub factors of climate for innovation, both recognition for new ideas and encourage for creativity partially mediates the relationship between organizational learning culture and organizational strength, which is one sub factor of resilience. Besides, both sub factors

of climate for innovation fully mediates the relationship between organizational learning culture and organizational commitment to change, which is the other sub factor of resilience. These findings are in line with the findings of the related hypothesis, that climate for innovation mediates the relationship between organizational learning culture and organizational resilience.

Figure 24 below provides the mediation model for sub factors of climate for innovation and organizational resilience.

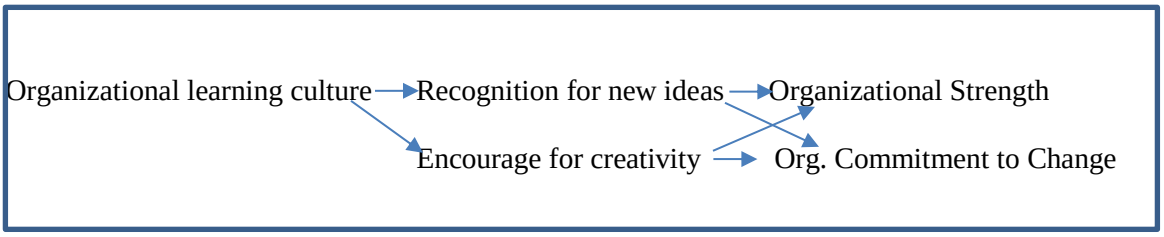

Figure 24. Mediation model for sub factors of climate for innovation and organizational resilience

5.2.4.3 Results for the moderation analysis within the suggested model

In this section, Hypothesis 4, which states that environmental dynamism significantly moderate the relationship between organizational learning culture and organizational resilience, is tested statistically. Moderation analysis on Structural Equation Modeling refers to the test of a potential effect of another independent variable on the relationship between an independent and dependent variable. In such case, the variable that affects the magnitude of an already existing relationship is called as moderating variable. In order to assess the moderation effect, interaction terms are included in the model as seen on Figure 25 below.

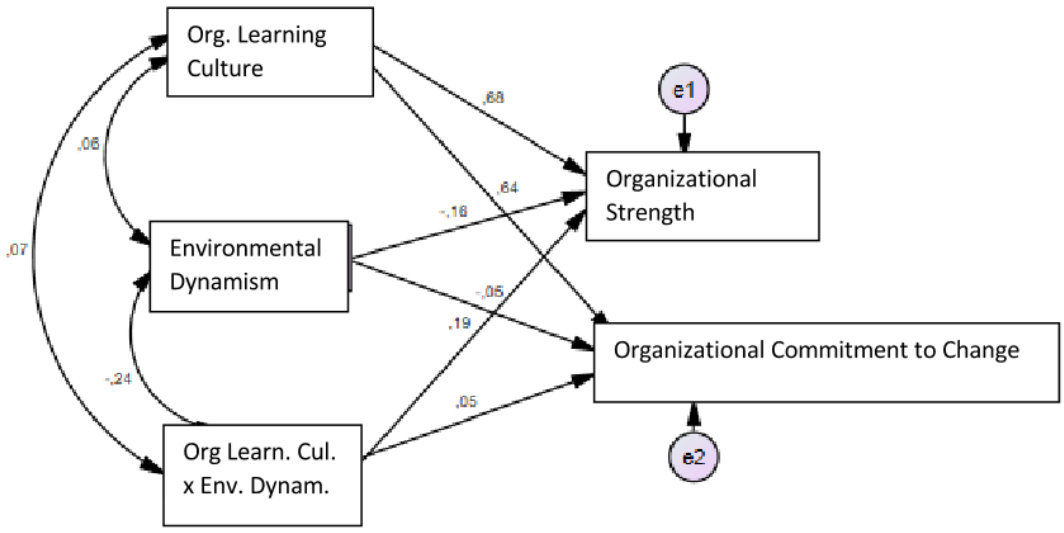

Figure 25. Environmental dynamism as moderating variable

Figure 25 provides the model; organizational learning culture as the independent variable, organizational resilience as the dependent variable consisting of two sub factors as organizational strength and organizational commitment to change, environmental dynamism as moderating variable and the interaction term. The interaction term refers to the multiplied effect of the organizational learning culture and the suggested moderating variable 'environmental dynamism' and it helps to assess the moderating effect added to the main effect of environmental dynamism.

In such moderation analyses with interaction terms, in order to avoid the possible multicollinearity effect between the interaction terms and the related independent variables, z-scores of variables are included in the model by standardizing them.

The moderating effect of environmental dynamism in the suggested model are analyzed and results are provided on the Table 42 below.

Table 42. Results for the Suggested Model with the Moderating Variable as Environmental Dynamism

Moderation Hypotheses	Significance Level
Org. Learning Culture - Org. Resilience	0.23 (0.005)**
Environmental Dynamism - Org. Resilience	0.20 (0.002)**
Org. Learning Culture x Env. Dynamism - Org. Resilience	0.80 (0.212)

***: p<0.01 ***: p<0.001*

The values on Table 42 indicate the standardized direct effects and the ones in parenthesis show the significance of the effects. As seen, the relationships 'Organizational Learning Culture - Organizational Resilience' and 'Environmental Dynamism- Organizational Resilience' are statistically significant, whereas 'Organizational Learning Culture x Env. Dynamism - Organizational Resilience' are statistically not significant ($p>0.05$). This means, that environmental dynamism does not add a moderating effect to the relationship between the organizational learning culture and the two sub factors of organizational resilience. Therefore, Hypothesis 4 (H4) is not supported statistically. One explanation for this lack of moderating effect might be, that in order to be able to discuss on organizational resilience, there needs to be already a level of dynamism within the environment. In other words, environmental dynamism already exists when investigating resilience, as resilience is a measure of organizational characteristics to respond to the environmental dynamics. Although changes do not necessarily always derive from the environment, most of the events requiring resilience have their roots in outside-driven factors in today's competitive environment.

5.3 Findings for the research question: Does transformational leadership build an antecedent for both climate for innovation and organizational learning culture?

In this part of the study, causal explanations for the mediating variable and the antecedent variable will be provided. As stated previously, related proposition is that increase in the transformational leadership can lead to an increase in learning culture and also in climate for innovation. The first section below presents the regression analysis results for the effect of transformational leadership on climate for innovation. Next, regression results for the effect on organizational learning culture are provided.

5.3.1 The effect of transformational leadership on climate for innovation

Table 43 below provides the model summary for the effect of transformational leadership on climate for innovation (Adjusted R-Square: 0.727).

Table 43. The Effect of Transformational Leadership on Climate for Innovation

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.47	0.13		3.46	0.001**
Transformational Leadership	0.53	0.03	0.85	16.35	0.000***

Model Summary:

R=0.85; $R^2 = 0.73$; Adj. $R^2 = 0.73$; F= 267.46; p=0.000***

***: *p<0.001*

Table 43 provides the regression coefficients for the suggested effect. Accordingly, the model to test the effect of transformational leadership on climate for innovation results as statistically significant (p = 0.000). This means, that transformational leadership has positive effect on climate for innovation, as suggested.

a) Transformational leadership – recognition for new ideas

As seen on Table 44 below, the model to test the effect of transformational leadership on recognition for new ideas results as statistically significant (p = 0.000).

Table 44. The Effect of Transformational Leadership on Recognition for New Ideas

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.41	0.18		2.32	0.023**
Transformational Leadership	0.57	0.04	0.80	13.10	0.000***
Model Summary:					
R=0.80; R^2 = 0.63; Adj. R^2 = 0.63; F= 171.60; p=0.000***					

***: *p<0.001*

Accordingly, this means, that transformational leadership has positive effect on 'recognition for new ideas', as suggested. Transformational leadership explains 63% of 'recognition for new ideas'.

The related regression formula is as:

Recognition for New Ideas = 0.41 + 0.57 x Transformational Leadership

b) Transformational leadership – encourage for creativity

As seen on Table 45 below, the model to test the effect of transformational leadership on 'encourage for creativity' results as statistically significant (p = 0.000).

Table 45. The Effect of Transformational Leadership on Encourage for Creativity

Independent Variable	B	Std. Error	Beta	t	p
Constant	0.52	0.15		3.55	0.001**
Transformational Leadership	0.50	0.04	0.82	14.14	0.000***
Model Summary:					
R=0.82; R^2 = 0.67; Adj. R^2 = 0.67; F= 200.02; p=0.000***					

***: *p<0.001*

Accordingly, this means, that transformational leadership has positive effect on encourage for creativity, as suggested. Transformational leadership explains 67% of encourage for creativity.

The related regression formula is as:

Encourage for Creativity = 0.52 + 0.50 x Transformational Leadership

These results revealed, that transformational leadership has a significant and positive effect on both recognition for new ideas and encourage for creativity, being two sub factors of climate for innovation. These findings are in line with the findings of the related research question, that transformational leadership positively affects climate for innovation.

5.3.2 The effect of transformational leadership on organizational learning culture

Table 46 below provides the model summary for the effect of transformational leadership on organizational learning culture (Adjusted R-Square: 0.59).

Table 46. The Effect of Transformational Leadership on Organizational Learning Culture

Independent Variable	B	Std. Error	Beta	t	p
Constant	10.16	3.55		2.86	0.005**
Transformational Leadership	10.38	0.86	0.77	12.02	0.000***

Model Summary:

R=0.77; $R^2 = 0.59$; Adj. $R^2 = 0.59$; F= 144.53; p=0.000***

The regression coefficients for the suggested effect are seen on Table 46. Accordingly, the model to test the effect of transformational leadership on organizational learning culture results as statistically significant (p= 0.00). This means, that transformational

leadership has positive effect on organizational learning culture, as suggested. Transformational leadership explains 59% of organizational learning culture.

5.4 Statistical analyses on demographic information

In this part, results of the independent sample t-tests are provided with regard to the demographics information and variables provided in this study. As will be provided below, among the five main variables of the study, only environmental dynamism, which was planned as the suggested moderating variable at the beginning, revealed significant differentiations with regard to key demographic data. Although these analyses were not the main focus of this research, they provided additional meaningful findings to this study.

Table 47 below provides the results of the independent sample t-test regarding the differentiations of the model variables on the company age.

Table 47. Differentiations of Model Variables on Company Age

		N	Mean	Std. Deviation	t	p
Environmental Dynamism	>= 13 Years	53	4.03	.88	3.63	**0.00*** **
	< 13 Years	48	3.28	1.15		
Transformational Leadership	>= 13 Years	53	4.14	.61	1.22	0.22
	< 13 Years	48	3.99	.65		
Climate for Innovation	>= 13 Years	53	2.68	.37	1.07	0.29
	< 13 Years	48	2.59	.42		
Organizational Learning Culture	>= 13 Years	53	53.98	8.00	2.04	**0.04***
	< 13 Years	48	50.57	8.78		
Organizational Resilience	>= 13 Years	53	2.65	.35	1.91	0.06
	< 13 Years	48	2.51	.42		

As seen on Table 47, environmental dynamism and organizational learning culture showed differentiations with regard to company age. This means, that older companies operate in environments that are more dynamic and have developed higher levels of organizational learning culture, 13 years being the threshold. Accordingly, levels of organizational learning culture developed changes with respect to the age of the company, older or younger than 13 years. Moreover, the age of company also differs with regard to the dynamism in its environment. This might be explained, as long-term survival is more difficult in dynamic environments than in less dynamic ones.

Table 48 below provides the results of the independent sample t-test regarding the differentiations of the model variables on the industry types.

Table 48. Differentiations of Model Variables on Industry types

		N	Mean	Std. Deviation	t	p
Environmental Dynamism	Production	26	3.20	.94	-2.67	**0.009****
	Services	75	3.84	1.10		
Transformation. Leadership	Production	26	3.94	.71	-1.24	0.22
	Services	75	4.11	.60		
Climate for Innovation	Production	26	2.52	.34	-1.70	0.09
	Services	75	2.68	.41		
Organizational Learning Culture	Production	26	52.52	7.10	0.11	0.91
	Services	75	52.30	9.00		
Organizational Resilience	Production	26	2.50	.30	-1.50	0.21
	Services	75	2.61	.41		

In order to be able to run this analysis and provide a meaningful result with regard to an observed differentiation, industries within the sample are grouped into two subcategories as production and services, as applied in many organization studies. As a result, it was only environmental dynamism showing differentiation with regard to industry type. Accordingly, it can be argued, that the level of dynamism in the environment depends on the industry type and, production and services industries have different levels of dynamism.

Table 49 below provides the results of the independent sample t-test regarding the differentiations of the model variables on the number of employees.

Table 49. Differentiations of Model Variables on Number of Employees

		N	Mean	Std. Deviation	t	p
Environmental Dynamism	10-20 Employees	53	3.40	1.17	-3.17	**0.002****
	21 and more employees	48	4.01	.85		
Transformation. Leadership	10-20 Employees	53	4.07	.64	-0.01	0.99
	21 and more employees	48	4.07	.63		
Climate for Innovation	10-20 Employees	53	2.70	.39	1.57	0.12
	21 and more employees	48	2.57	.39		
Organizational Learning Culture	10-20 Employees	53	53.40	8.11	1.23	0.22
	21 and more employees	48	51.30	8.90		
Organizational Resilience	10-20 Employees	53	2.61	.37	0.70	0.50
	21 and more employees	48	2.60	.41		

In this analysis, again it was only environmental dynamism showing differentiation with regard to the number of employees. As organizations with higher numbers of employees would mean larger companies in size, it can be argued, that environmental dynamism experienced by companies differs based on size of company, here larger companies experience more dynamism. Similarly, Bhamra et al. (2011) referred to a study by Kitching et al. (2009) that although limited resources make small companies vulnerable to changes within their environment, SMEs are able to have an important effect on their performance and survival through the resource acquisition and usages.

CHAPTER 6

DISCUSSION AND CONCLUSION

6.1 Discussion

This chapter aims to discuss the findings of this study, its theoretical implications for research, limitations, and conclusions.

As stated previously, the purpose of this study was to explore how organizations can develop resilience in order to be prepared for the possible change/crisis scenarios to be experienced in their lifetime. While many organizations are affected by the changes, not many of them are aware of the importance of being prepared by developing resilience. Even the term resilience is relatively new, as being more familiar in psychology studies. However, as organizations consist of individuals and there are also many other concepts borrowed from psychology to organizational studies, an understanding of resilience needs to be established due to its increasingly critical role in facing the changing dynamics of business environment. Hamel (2003, cited in Folke, Hahn, Olsson, and Norberg (2005, p. 449) stated, that in recent organization literature, resilience has been suggested as a key feature that allows industries to survive challenges and reorganize. Taking the relation to innovation and renewal into consideration, organizational learning culture and climate for innovation were suggested as the related variables to help to explain organizational resilience, but the question 'how' needed to be investigated empirically.

In this study, statistical analyses on organizational resilience revealed a two-factor structure, sub-factors being called as 'organizational commitment to change' and 'organizational strength'. In fact, there is also a two-dimensional discussion within the

organizational resilience literature; as some scholars (e.g. Coutu, 2002; Weick, 1988; Lengnick-Hall and Beck, 2003) argue that resilience is more change-oriented during change periods by creating new opportunities, while some others (e.g. Dutton et al., 2002; Gittell et al., 1997; Horne, 1997; Horne and Orr, 1998; Mallak, 1998; Sutcliffe and Vogus, 2003) claim, that resilience is about protecting the organization during the change and picking up where it left off. This means, that for some scholars, organizations learn to transform themselves to meet the requirements of the changes experienced, whereas for some others, resilient organizations are the ones that successfully preserve their strength and remain unchanged so that they remain undestroyed. An example adopting specifically the learning-oriented approach is the scale suggested by Lengnick-Hall and Beck (2003). Accordingly, organizational resilience refers more to a capacity to capitalize from unexpected situations and to learn from them. However, the reason for not adopting that scale was, that the scale items were already learning oriented, and since this study was about to measure the effect of learning culture on resilience, it would not result significant outcomes and even multicollinearity problems would emerge. Taking this discussion into consideration, this thesis adopted the scale developed by İşeri-Say and Kantur (2015) and the analysis revealed reflections of the two dimensions of these two approaches.

As explained before; in this thesis, the theory of dynamic capabilities is rested upon, besides the resource-based view (RBV) of the firm. Theoretical framework is derived from previous research on dynamic capabilities (Teece et al., 1997; Eisenhardt and Martin, 2000; Zollo and Winter, 2002) and the resource-based view, to argue that organizational learning culture and climate for innovation as organizational resources

build dynamic capabilities for organizations to contribute to resilience in order to be prepared for the unexpected changes without being destroyed.

Yuan Hung et al. (2011) argued that organizational learning produces increased innovative performance by enhancing knowledge capacity. In this regard, climate for innovation was suggested as the mediating variable on the relationship between organizational learning culture and organizational resilience and it revealed statistically significant result. Furthermore, sub factors of climate for innovation and resilience were used to run subsequent mediation analyses. The results revealed, that being sub factors of climate for innovation, both recognition for new ideas and encourage for creativity partially mediates the relationship between organizational learning culture and organizational strength, which is one sub factor of resilience. Besides, both sub factors of climate for innovation fully mediates the relationship between organizational learning culture and organizational commitment to change, which is the other sub factor of resilience. These findings are in line with the finding of the related hypothesis, that climate for innovation mediates the relationship between organizational learning culture and organizational resilience.

Besides, environmental dynamism was hypothesized as the moderating variable in this study, considering that different levels of environmental dynamism would change the effect of organizational learning culture on organizational resilience. However, the moderation tests did not provide meaningful results supporting this hypothesis. An explanation for this can be made, that a level of environmental dynamism needs to be already existing in order to be able to discuss on organizational resilience, as resilience is a measure of organizational characteristics to respond to the environmental dynamics,

and most of the events requiring resilience have their roots in outside-driven factors in today's competitive environment.

Apart from these, as a research question, transformational leadership was suggested as the antecedent for both organizational learning culture and climate for innovation in this study based on a literature support. Eisenbeiss, van Knippenberg and Boerner (2008, p. 1438) argued that transformational leadership can improve supportive behavior among employees by creating a shared pledge to innovation. It was statistically revealed, that an increase in transformational leadership contributes to increase in learning culture and climate for innovation. Accordingly, leaders are influential actors to shape culture and climate perceptions of employees and help to provide the necessary conditions that contribute to the emergence of organizational resilience. This shows that organizations having transformational leadership characteristics on their top management are ready to develop organizational resilience. Leadership has always been considered as an important concept for organizational survival and success, yet its indirect relevance to resilience has become more valid in this study. Specifically transformational leaders, with their capability to transform the organization and its objectives, characteristics and individuals, have a critical role in the high levels of organizational learning culture and climate for innovation, that lead to organizational resilience. The analyses revealed, that transformational leadership has a significant and positive effect on organizational learning culture. Furthermore, sub factors of climate for innovation were used to run the regression analyses to test the effect of transformational leadership. The results revealed, that transformational leadership has a significant and positive effect on both recognition for new ideas and encourage for creativity, being two sub factors of climate for innovation. These findings are in line with the findings of the

related research question, that transformational leadership positively affects climate for innovation.

6.2 Contributions for research and theory

The findings of this thesis have contributions to theory and research. This study provides an empirical explanation to the antecedents leading to organizational resilience, which is gaining particularly increasing attention by the organization scholars due to the recently more dynamic business environment. While the number of research on organizational resilience is accelerating, empirical studies investigating the emerging point of resilience have remained relatively few, as stated previously at the beginning of this study.

In addition, by focusing on the antecedent and mediating variables separately, it was aimed to explore the roots of organizational resilience, and was explored that transformational leadership plays a significant role for the antecedents of resilience to emerge, as learning culture and climate for innovation. Many studies have explored a causal relationship between suggested variables, however, this study further analyzed the factors contributing to those variables, independent and mediating, as a contribution to the studies on learning culture and climate for innovation, beside the contribution to the resilience research.

This study recognizes the power of climate for innovation in the relationship between organizational learning culture and organizational resilience. Theoretically, from the perspective of resource-based view, resources are significant for organizations as assets contributing to organizational success (Penrose, 1959). In this regard, this study contributes to the theory of resource-based view, by considering climate for innovation and learning culture as organizational resources contributing to success. From the

perspective of the dynamic capabilities, this study contributes to the principle of continuous development and renewal of various capabilities to make the organization better. The dynamic capabilities theory emphasizes the need for a firm to develop and renew its organizational capabilities to remain competitive (Teece et al., 1997). In line with the dynamic capabilities theory, there is need for organizations to develop and renew their creative climate and innovation capabilities that are proper for improving organizational resilience. Dynamic capabilities enable the firm to react to changing market conditions by developing and renewing its organizational capabilities, thereby achieving and sustaining a competitive advantage. This study contributes evidence for the application of the dynamic capabilities theory in explaining organizational resilience based on innovation and creative climate, as many studies did not focus on organizational resilience (Capron and Mitchell, 2009; Nielsen,2006).

6.3 Limitations of the study

One weak point in this study is about the sample used, that only companies located in Istanbul are included in the sample of this study, as Istanbul is the largest industry city of Turkey. However, limiting the collection data from one city may decrease the generalizability of the findings. Besides, small entrepreneurial companies with more flexibilities and adaptabilities are not included in the sample. Especially newly established entrepreneurial technology companies would provide stronger results, as the hypothesized relationships would completely apply to their way of doing business. However, as most of them are new in the business, they might have not developed sense of resilience so far due to their low number of change experiences.

Another point to critically identify about this study is that no information was obtained and used about the organization during crises and/or changes they experienced, in order to mention about their resilience. Sommer et al. (2016) referred to this point, that empirical research conducted during an actual crisis is quite rare (Pillai and Meindl, 1998; Schoenberg, 2005). Accordingly, the reason for this might be the difficulty of finding individuals willing to participate in real-time crisis research; either because of concerns for impression or because they are totally focused in handling with the extreme events (Pearson and Clair, 1998). As stated, manager-level people from companies would be reluctant to disclose information during crises periods or would have no time to do that. Similarly, a critique would be about the lack of numerical data to identify the cases about resilience, such as economic indicators or production/service level changes. However, since this study's suggested antecedents are in culture and climate terms, resilience needs to be treated also from a quality and/or capacity perspective in order to be able to evaluate the responding managers' perceptions.

One final limitation is, that this study is cross-sectional, that the suggested relationships were investigated at only a single point in time. Due to the cross-sectional nature of the study, the dynamic aspects of the subject matter cannot be considered. However, the concept of resilience can be better measured over time, as the business environment is not stable and the dynamics of change to which the organizations are subject can also change from time to time.

6.4 Concluding remarks

This thesis provided corroborative empirical evidence for the theoretical mediated relationship between organizational learning culture and organizational resilience

through climate for innovation. Having been borrowed from other disciplines of areas, resilience is becoming one of the key constructs of future organization studies. The reason for this is, that business environment has become more dynamic and changing than ever due to the changes in technology and global ways of doing business. To conclude, it can be argued that organizational resilience is a significant factor in business success, and therefore more studies are necessary to be conducted in order to explore how organizations can achieve higher levels of resilience. This study was an attempt to provide an answer to this 'how' dimension, revealing that integrating learning as a culture is highly significant for developing resilience. However, the more significant point is that this effect is best explained with the existence of climate for innovation. In addition, taking the hypothesis suggested at the beginning, it was revealed that environmental dynamism did not moderate the relationship between organizational learning culture and organizational resilience.

Furthermore, this study did not leave the research at this point, and continued to investigate how the levels of organizational learning culture and climate for innovation can be increased by the organizations. With a separate research question, this study further revealed, that with the development of transformational leadership characteristics on top management, organizations can improve their levels of learning culture and climate for innovation, which together contribute to the organizational resilience. As the main construct of this study to be explored was resilience, providing further information on its antecedents can be considered as an important contribution. All in all, this study provided a detailed explanation for how organizations today can improve their levels of resilience within the Turkish business context.

APPENDIX A

SURVEY FORM IN ENGLISH

General Information

Company Name	:	
Participant Name	:	
Status at the Company	:	
Phone	:	
Address	:	

Demographic Information

D1. How long have you been employed at this current company?

.....

D2. For how many years have your company been working?

.....

D3. What is your company's industry/functioning area?

.....

D4. How many people are currently employed at your company?

5. Has your company undergone any positive or negative change during the last two years?

Yes	1	Please answer the 6th demographics (next) question
No	2	Please continue with Question group A1.

5 What is/are the type/s of that change your company experienced? (Multi-answer)

Merger-acquisition	1
Restructuring	2
Change of CEO/General manager	3
Moving	4
IT System renovation	5
Downsizing	6
Growth (new product/market)	7
Economic crisis	8
Other …….	9

Environmental Dynamism

1. Our firm must rarely change its marketing practices to keep up with the market and competitors. / Our firm must change its marketing practices extremely frequently (e.g. semi-annually).

2. The rate at which products/services are getting obsolete in the industry is very slow. (e.g. basic metal like copper). / The rate of obsolescence is very high (as in some fashion goods and semi-conductors).

3. Actions of competitors are quite easy to predict (as in some primary industries). / Actions of competitors are unpredictable.

4. Demand and consumer tastes are fairly easy to forecast (e.g. for milk companies. / Demand and tastes are almost unpredictable (e.g. high fashion goods).

5. The production/service technology is not subject to very much change and is well established (e.g. in steel production). / The modes of production/service change often and in a major way (e.g. advanced electronic components).

Transformational Leadership

1. The firm's management is always on the lookout for new opportunities for the unit/department/organization.

2. The firm's management has a clear common view of its final aims.

3. The firm's management succeeds in motivating the rest of the company.

4. The firm's management always acts as the organization's leading force.

5. The organization has leaders who are capable of motivating and guiding their colleagues on the job.

Climate for Innovation

1. Creativity is encouraged here.

2. Our ability to function creatively is respected by the leadership.

3. Around here, people are allowed to try to solve the same problems in different ways.

4. The main function of members in this organization is to follow orders which come down through channels.

5. Around here, a person can get in a lot of trouble by being different.

6. This organization can be described as flexible and continually adapting to change.

7. A person can't do things that are too different around here without provoking anger.

8. The best way to get along in this organization is to think the way the rest of the group does.

9. People around here are expected to deal with problems in the same way.

10. This organization is open and responsive to change.

11. The people in charge around here usually get credit for others' ideas.

12. In this organization, we tend to stick to tried and true ways.

13. This place seems to be more concerned with the status quo than with change.

14. Assistance in developing new ideas is readily available.

15. There are adequate resources devoted to innovation in this organization.

16. There is adequate time available to pursue creative ideas here.

17. Lack of funding to investigate creative ideas is a problem in this organization.

18. Personnel shortages inhibit innovation in this organization.

19. This organization gives me free time to pursue creative ideas during the workday.

20. The reward system here encourages innovation.

21. This organization publicly recognizes those who are innovative.

22. The reward system here benefits mainly those who don't rock the boat

Organizational Learning Culture

1. In my organization, people are rewarded for learning.

2. In my organization, people spend time building trust with each other.

3. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.

4. My organization makes its lessons learned available to all employees.

5. My organization recognizes people for taking initiative.

6. My organization works together with the outside community to meet mutual needs.

7. In my organization, leaders continually look for opportunities to learn.

Organizational Resilience

In unexpected or critical situations, my organization…

1. stands straight to get back to its position.
2. is successful in generating diverse solutions.
3. has the strength to use required resources.
4. rapidly takes action.
5. develops alternatives in order to benefit from negative circumstances.
6. is agile in taking required action when needed.
7. is a place where all the employees engaged to do what is required from them.
8. is successful in acting as a whole with all of its employees.
9. is a powerful organization and not easily affected by outside factors.
10. shows resistance to the end in order not to lose.
11. is powerful to overcome everything.
12. does not give up and continues its path.

APPENDIX B

SURVEY FORM IN TURKISH

Görüşme Bilgileri

Şirket Adı	:	
Görüşmeci Ad Soyad	:	
Görüşmeci Statü	:	
Telefon	:	
Adres	:	

Demographic Information

1. Şu anki kurumunuzda kaç yıldır çalışmaktasınız?
2. Kurumunuz kaç yıldır faaliyet göstermektedir?
3. Kurumunuzun faaliyet alanı/sektörü nedir?
4. Kurumunuzda şu an kaç kişi çalışmaktadır?
5. Kurumunuzda son 2 yıldır, pozitif ya da negatif bir değişim yaşanmış mıdır?

Evet	1	Soru 6'ya geçiniz
Hayır	2	A1 sorusu ile devam ediniz

6. Kurumunuzun geçirdiği değişimin türü aşağıdakilerden hangisi/hangileridir? (Çok cevap).

Birleşme – satın alma	1
Yeniden yapılanma	2
CEO/ Müdür değişimi	3
Taşınma	4
Bilgi işlem sisteminde yenilik	5
Küçülme	6
Büyüme (yeni ürün/pazarlar)	7
Ekonomik kriz	8
Diğer Yazınız: …….	9

Çevresel Dinamizim

1. Şirketimizin, piyasayı ve rakiplerini takip etmek için pazarlama uygulamalarını değiştirmesi nadiren gerekmektedir./ Şirketimiz, kendi pazarlama uygulamalarını çok sıklıkla değiştirmek zorunluluğundadır. (örneğin yılda iki kez).
2. Sektörde, ürünlerin/hizmetlerin eskime, eski moda kalma hızı çok yavaştır (örneğin bakır gibi temel metal). / Eskime, eski moda kalma hızı çok yüksektir. (moda ürünleri ve yarı iletkenlerde olduğu gibi).
3. Rakiplerin hareketlerini tahmin etmek oldukça kolaydır (bazı temel endüstrilerde olduğu gibi). / Rakiplerin eylemleri önceden tahmin edilememektedir.
4. Talepleri ve tüketici zevklerini tahmin etmek epey kolaydır (örneğin süt şirketleri). / Talepler ve zevkler neredeyse öngörülememektedir (yüksek moda ürünler gibi).
5. Üretim/hizmet teknolojileri fazla değişme tabi değildir ve sağlam kurulmuştur (örneğin çelik üretimindeki gibi). / Üretim ve hizmet yolları/yöntemleri/tarzları sürekli ve büyük ölçüde değişmektedir (örneğin ileri düzey elektronik aksamlar).

Dönüşümcü Liderlik

1. Şirket yönetimi her zaman birim/departman/organizasyonlar için yeni fırsatları kollarlar.
2. Şirket yönetiminin nihai amaçları doğrultusunda net ortak kanıları/görüşleri mevcuttur.
3. Şirket yönetimi, şirketin geri kalanını motive etmeyi başarır.
4. Şirket yönetimi her zaman organizasyonun öncü gücü olarak davranır.

5. Organizasyonda, görev başında iş arkadaşlarını motive etme ve yol gösterme kabiliyetine sahip liderler mevcuttur.

İnovasyon İklimi

1. Kurumumuzda yaratıcılık teşvik edilir.
2. Yaratıcı olarak çalışma yeteneğimiz liderlerimiz tarafından saygı görür.
3. Kurumumuzda, çalışanların aynı sorunları farklı yollarda çözmeyi denemelerine izin verilir.
4. Bu kurumda çalışanların temel görevi, kurumsal kanallarla yukarıdan aşağıya iletilen talimatları yerine getirmektir.
5. Kurumumuzda, farklı davranan bir çalışan büyük sorunlarla karşılaşabilir.
6. Bu kurum esnek ve değişime sürekli uyum sağlayabilir şekilde tanımlanabilir.
7. Bir çalışanın çok farklı şeyler yapması kurumumuzda öfke uyandırır.
8. Bu kurumda çalışmaya devam edebilmenin en iyi yolu diğerleri gibi düşünmektir.
9. Kurumumuzdaki çalışanlardan beklenilen, sorunları her zaman aynı şekilde ele almalarıdır.
10. Bu kurum değişime açık ve duyarlıdır.
11. Bu kurumdaki sorumlu kişiler, genellikle başkalarının fikirlerini kullanırlar.
12. Bu kurumda, bizler doğru ve denenmiş yöntemlere bağlı kalma eğilimi göstermekteyiz.
13. Bu kurum değişimden daha çok statükoyla (durağanlık) ilgilidir.
14. Kurumumuzda, yeni düşüncelerin gelişimine kolayca destek bulunabilir.

15. Bu kurumda yeniliğe (inovasyona) yönelik ayrılmış yeterli kaynak bulunmaktadır.
16. Bu kurumda yaratıcı düşünceleri takip etmek için yeterli zaman mevcuttur.
17. Yaratıcı fikirler geliştirmek için kaynak yetersizliği, bu kurumda bir sorundur.
18. Bu kurumda personel eksikliği, yeniliği (inovasyonu) engeller.
19. Bu kurum, yaratıcı fikirler geliştirmek için çalışma gününde, çalışanına boş vakit sağlamaktadır.
20. Bu kurumda ödüllendirme sistemi yenilenmeyi (inovasyon) teşvik eder.
21. Bu kurum, yenilikçi kişilerin farkına varıp, onları takdir etmektedir.
22. Bu kurumda ödüllendirme sistemi esas olarak mevcut durumu bozmayanlara yarar sağlar.

Örgütsel Öğrenme Kültürü

1. Bu kurumda, bireyler öğrenmeleri için ödüllendirilirler.
2. Bu kurumda, bireyler birbirlerine karşı güven oluşturmak için zaman ayırırlar.
3. Bu kurumda, takımlar/gruplar, grup toplantıları (tartışmaları) veya toplanan bilgiler sonucunda düşüncelerini revize ederler.
4. Bu kurum, çıkartılan (alınan) dersleri tüm çalışanların bilgisine sunar.
5. Bu kurumda, insiyatif alan çalışanlar kabul görür/fark edilir/takdir edilir.
6. Bu kurum, ortak ihtiyaçları karşılamak için kurum dışı taraflar ile birlikte çalışır.
7. Bu kurumda, liderler sürekli öğrenmek için fırsatlar ararlar.

Kurumsal Dayanıklılık/Rezilyans

Çalıştığım kurum beklenmedik/ani gelişen veya kritik/kötü durumlar karşısında …

1. Dik bir duruş sergileyerek konumunu korumayı başarır.
2. Farklı çözüm yolları üretmeyi başarır.
3. Gereken her türlü kaynağı kullanabilecek güçte bir kurumdur.
4. Çabuk harekete geçer.
5. Alternatifler geliştirerek olumsuz koşullardan fayda sağlamaya çalışan bir kurumdur.
6. Yapılması gerekenleri hızlı bir biçimde yapar.
7. Yapılması gerekenleri tüm çalışanların kenetlenerek yaptığı bir kurumdur.
8. Tüm çalışanlarıyla bir bütün olarak hareket etmeyi başarır.
9. Kolaylıkla etkilenmeyen güçlü bir kurumdur.
10. Kaybetmemek için sonuna kadar direnç gösteren bir kurumdur.
11. Oluşabilecek her türlü durumu atlatabilecek güce sahip bir kurumdur.
12. Pes etmeden yoluna devam eden bir kurumdur.

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