THE ROLE OF BOARD SETTINGS AND CLIMATE FOR CREATIVITY, BOARD MEMBER CREATIVITY, BOARD DIVERSITY AND ENVIRONMENT IN THE RELATIONSHIP BETWEEN BOARD CREATIVITY AND INNOVATION AMBIDEXTERITY: AN EMPIRICAL STUDY ON CORPORATE BOARDS

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PLAGIARISM

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

The research problem is that there is an academic need for exploring the relationships among board member creativity, board settings and climate for creativity, board creativity, board diversity, technology and market turbulence, competitive intensity and board decisions for exploitative and exploratory innovation. The purpose is to bridge a theoretical gap which can to be filled by empirical research investigating these relationships. The research sample is 153 board members who serve on corporate boards of companies located in Istanbul. The research design is exploratory and descriptive. PLS-SEM methods and SmartPLS 3.0 software are applied to analyze the proposed research model. There are direct relationships between board settings and climate for creativity and board creativity, and board diversity and board creativity. Board settings and climate for creativity and board diversity mediate the relationship between board member creativity and board creativity, and board creativity mediates the relationship between board settings and climate for creativity and board decisions for exploitative innovation, and between board diversity and decisions for exploratory innovation. Technology and market turbulence as moderating factors do not moderate the relationship between board creativity and board decisions for exploitative innovation, and between board creativity and board decisions for exploratory innovation. Competitive intensity and environment as a sum total moderate the relationship between board creativity and board decisions for exploitative innovation, yet they do not moderate the relationship between board creativity and board decisions for exploratory innovation.

Key words: *corporate governance, corporate boards, board members, creativity, diversity, decision making, ambidexterity, exploitative innovation, exploratory innovation*

ÖZET

Bu doktora tezinde araştırma problemi, yönetim kurulu üyesinin yaratıcılığı, yönetim kurulundaki yaratıcı iklim, yönetim kurulu yaratıcılığı, yönetim kurulu çeşitliliği, çift yönlü yeniklikçilik için yönetim kurulu kararları arasındaki ilişkilerin akademik açıdan araştırılmasına ihtiyaç duyulması olarak belirlenmiştir. Tezin amacı, bu ilişkileri incelemek ve empirik araştırma ile doldurulması gereken bu teorik boşluğu doldurmaktır. Araştırma örneği İstanbul'da bulunan şirketlerin yönetim kurullarında görev alan 153 yönetim kurulu üyesidir. Bu empirik çalışmanın tasarımı keşifsel ve tanımlayıcıdır. PLS-SEM yöntemlerini ve SmartPLS 3.0 programını uygulayarak, önerilen araştırma modeli istatistiksel olarak analiz edilmiştir. Yönetim kurulu yaratıcı iklim ve yönetim kurulu yaratıcılığı, yönetim kurulu çeşitliliği ve yönetim kurulu yaratıcılığı arasında iki ilişki tespit edilmiştir. Yaratıcılığı destekleyen yönetim kurulu iklimi ve yönetim kurulu çeşitliliği, yönetim kurulu üyesinin yaratıcılığı ve yönetim kurulu yaratıcılığı arasındaki ilişkilerde arabulucudur. Yönetim kurulu yaratıcılığı, yaratıcılığı destekleyen yönetim kurulu iklimi ve sömürücü yenilikçilik için yönetim kurulu kararları arasında, yönetim kurulu çeşitliliği ve kesifsel yenilikçilik arasındaki ilişkilerde aracılık eder. Teknoloji türbülası ve piyasa türbülansı, yönetim kurulu yaratıcılığı ve sömürücü yenilikçilik için yönetim kurulu kararları ile yönetim kurulu yaratıcılığı ve keşifedici yenilikçilik için alınan yönetim kurulu kararları arasında moderatör değillerdir. Rekabet yoğunluğu ve dış ortam, yönetim kurulu yaratıcılığı ile sömürücü yenilçilik için kararlar arasındaki ilişkiyi modere ederler fakat yönetim kurulu yaratıcılığı ile keşifsel yenilikçilik kararları arasındaki ilişkiyi modere etmezler.

***Anahtar Kelimeler**: kurumsal yönetim, yönetim kurulları, yönetim kurulu üyeleri, yaratıcılık, çeşitlilik, karar alma, çift yönlülük, yenilikçilik*

DEDICATION

I dedicate this PhD thesis

to my daughter Doğa,

and I believe it will be

a source of inspiration for her

so that she can unleash her creativity and

accomplish the best and highest

academic achievements.

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1.1 Research Topic and Context

Corporate governance is defined as the power which is excercised over companies, and it contains all board activities and relationships with stakeholders, auditors, shareholders, regulators and managers (Tricker B. , 2014). Brickley and Zimmerman (2010) also define corporate governance but in an even broader sense as the system of laws, institutions, markets, contracts, company policies and procedures such as the internal control system, manuals and budgets that direct and impact the actions of the top-level company decision makers like shareholders, boards and executives.

The roles corporate boards play in corporate governance are also discussed in the academic literature. As Maseda, Iturralde and Arosa (2015) write, research that studies board roles agrees that there are three major and interrelated board roles which are an institutional, control and strategic. Daily, Dalton, and Cannella (2003), Hung (1998), and Pfeffer and Salancik (1978) state that the institutional or service role comprises the boards functioning as connections between the companies and their external environment. Fama and Jensen (1983), and Jensen and Meckling (1976) write that the control or monitoring role requires the protection of shareholders and the supervision of management. Huse (2007), Golden and Zajac (2001), and Zahra and Pearce (1989) state that the strategic role is about board members giving advice to managers on administrative problems and assisstting them to formulate strategies.

The above mentioned three key board roles have been practiced by many boards around the world for a long period of time, however recently, the emerging research on corporate governance and corporate boards has broadly

considered and emphasized the changing roles of boards in modern organizations. Prescriptive studies such as Carter and Lorsch (2004), Huse (1998), Demb and Neubauer (1992) analyze some of the problems that boards have to cope with. For instance, corporate boards have to redesign themselves internally, and also, they have to redesign their relationships and roles accordingly within and outside their organizations (Erakovic & Goel, 2008).

Johnson et al. (1996), in their wide-ranging literature review, show the progressive development in the participation of the board as strategic partner (Judge & Zeithaml, 1992). A study of board members executed in four countries, shows an essential alteration in the position of the board in the direction of becoming management's strategic partner (Anderson, Melanson, & Maly, 2007). Castro, Concha, Gravel and Periñan (2009) also discuss the board involvement in strategy. According to some studies the board should be the equal partner of management, whereas some other studies such as Hendry and Kiel (2004), and Walsh and Seward (1990) claim that the board should only offer strategic oversight. Consequently, there are two schools of thought about board strategic involvement.

The passive school of thought and the active school are the two schools regarding the board strategic involvement (Golden & Zajac, 2001). The passive school is reinforced by the Managerial Hegemony Theory, and it assumes that boards are a legal fiction, and they are under the domination of management as Pfeffer (1972) writes, and especially the CEO as Mace (1971) states. Moyer, Rao and Baliga (1996), and Boeker and Goodstein (2017) claim that the inside directors, also known as executive directors, report, convert power and control to the CEO.

On the contrary, Pfeffer (1972) writes that management controls the board since outside directors are frequently selected by the management. From this point of view, the top management team (TMT) is responsible for the strategy, and the board performs the so-called rubber-stamp function (Rosenstein, 1988) due to the fact that its role is to review and approve the strategy. Stated differently, in the passive school view the corporate board is passive in terms of strategy formulation, and it only approves the strategy formulated by the CEO and TMT.

From the active school point of view, the TMT and board of directors are accountable for the strategy. Besides, the active school supports the idea that the company strategic direction is formed by board of directors who are actually autonomous thinkers (Davis & Thompson, 1994). Moreover, board's progression to becoming a strategic management partner grants a chance to produce a much better governance regime because the board as a strategic partner may lead to contradictory perspectives to strategy planning and execution, so this may possibly result in improved decisions and better organizatonal performance. The board may have a more inclusive role by increasing the strategy discussions with nonexecutive board members who are involved in a widespread variety of control and collaboration behaviors (Roberts, McNulty, & Stiles, 2005).

Boards as strategic partners means that they play an active role in strategy formulation. According to Zahra and Pearce (1990) strategy is developing, maintening and monitoring core competencies that help companies to survive and reach long term outcomes. At the board level, there are strategies such as mission development, strategy conception, strategy formulation and implementation, and the strategic involvement of the board can vary in each of these strategic areas. Some

examples for board strategy formulation are evaluating corporate strengths and weaknesses, discussing some forecasts, checking CEO's assumptions about the corporation's environment, and still other examples are supporting the development of new strategic options and providing help in the selection of corporate strategy. Shortly, board strategy formulation is closely related to strategic decision-making which involves resolving uncertainty, complexity and conflict (Zahra & Pearce, 1990).

The behavioral theory of governance and corporate boards emphasises that board members make strategic decisions by reling on rules and lessons learned from past experience, instead of using rational decision-making models which require information and knowledge that they do not possess. Consequently, the limits of bounded rationality of board members ban the availability and comprehending of some alternatives which means that basic heuristics will be implemented for processing the gathered information (Hendry J. , 2005).

Decisions are informed and formed by the environmental feedback which board directors get from their former decisions (Cyert & March, 1963), and today the role of external environmental factors in the decision-making of board members is even more critical. The great number and veriety of external factors result in uncertainty and complexity, so directors deal with complexity reduction and uncertainty by simplifying and structuring information through their pre-existing knowledge structures and perceptual filters. Furthermore, board directors' earlier experiences and expectations, and their routine information processing practices and learning are all very related with comprehending board decision-making (Rindova, 1999).

The processes of board strategic decision-making are usually described by boards using either the top-down approach or the bottom-up approach. In the top-down approach the board will frame the strategic context, while the implementation and detailed formulations will take place at lower levels of the organization, whereas in the bottom-up approach the context and content will be formulated in the organization since the board's task will be to ratify, so studies have shown that the board may have the largest contribution when it formulates the strategic context (Styles & Taylor, 2001).

If the board is to have an impact on the strategic direction of an organization, it needs to be involved in more than just ratification and assessment. The strategic involvement of corporate boards needs to be properly embedded, and boards should also participate in forming the context, content and conduct of strategy (Calabrò, Torchia, Pukall, & Mussolino, 2013). These three levels of board strategy participation indicate that the board and its members may have a higher involvement in the strategy process than just the taking of strategic decisions. Board members may also act as consultants and collaborators or mentors for the management in their strategy development. In that way, they help shape the strategic decisions (McNulty & Pettigrew, 1999).

However, strategies should be embedded within the board, and if the board is to be genuinely powerful in influencing the future of an organization, then, it must also take place in forming the context and conduct of strategies. The board will then develop the context for the strategic debate, establish the process and methodology for strategy development, monitor the strategy content and alter management's conduct in relation to strategy. Most boards are involved in taking strategic decisions, some boards shape strategic decisions, but few are involved in a continuous shaping of the

content, context and conduct of strategies (McNulty & Pettigrew, 1999) . Based on these ideas, board members' strategic decisions for continuously shaping the content of strategies, and balancing them in an ambidexterious manner is needed since the continuous strategic decision making involvement of the board members is of critical importance in today's complex and turbulent business environment.

This complex and turbulent environment is formed by great number of factors such as globalization, technological and social developments, economic crises and demographic changes. As a result, this complex and turbulent environment is a challenge for all types of organizations, global and local, large and small, and they also have to compete in order to survive. All of them are challenged to make some major changes in their business practices, corporate cultures and organizational structures. These changes require complete mental paradigm shift which is conceivable by transforming corporate board members', leaders', managers' and employees' mindsets. Moreover, they need to change their corporate governance.

Shortly stated, in this thesis, it is proposed that there is a need for a "different kind of corporate governance" that necessitates the active strategic role of boards and their directors' skills, abilities and creativity for creating and innovating out of turbulence and complexity. Stated differently, the complex and turbulent environment has an excessive influence on boards, so directors are challenged to deal with complexities and find creative solutions in order to handle the turbulence. Board members possess some creativity, and they can use their creativity to generate and develop strategies. The importance of the creativity of each board member and the corporate board as a whole are increasing, and there is a need for more theoretical and empirical research for further clarification.

1.2 Research Focus and Scope

This "different kind of corporate governance" cannot be defined with the previously stated traditional definitions of corporate governance. Consequently, there is a need for a different corporate governance definition that is more suitable for this new turbulent and complex business world which requires a very different style of corporate governance for competitively creating more value. Huse states:

> "Corporate governance is defined here as the interactions between internal actors, external actors and the board members in directing a corporation for value creation" (2007, p. 7).

The first part of this definition "the interactions between internal actors, external actors and the board members" is similar to the previously stated corporate governance definitions. However, the second part which involves the phrase "in directing a corporation for value creation" is critically important since boards of directors have to create value, and value creation needs to be studied more, and specificly board value creation which guarantees innovation in the current turbulent and complex world should be explored more deeply. Based on this definition, the focus of the research in this thesis is value creating corporate boards.

Since board directors are expected to make strategic decisions under turbulent and complex external conditions, studying the relationship between external environment that is actually the board context and board decisions is critical in this thesis. Here a new approach is proposed for studying the corporate boards as Complex Adaptive Systems (CASs) based on Complex Adaptive Systems (CAS) theory. Moreover, corporate boards or boards of directors are

studied as Complex Adaptive Systems (CASs) since the processes within them are affected by the external environment.

As it has already been mentioned above, there is this debate about board strategic role or the goal-setting and strategy involvement of corporate boards, and it has recently centred on two contradictory questions. The first one is about boards' approving managerial decisions. The second one is about boards' participation in forming the context, content and conduct of strategy (Calabrò, Torchia, Pukall, & Mussolino, 2013). For example, the value-creating board survey, conducted in Norway, studied how various actors in the boardroom perceive the board's involvement in the strategic process which has four stages thata are formulation, ratification, implementation and evaluation. The results of this survey are that strategy ratification gets the highest ratings, followed by strategy formulation while control with strategy implementation gets the lowest ratings (Huse M. , 2007).

The conclusion from the results of this research is that boards can add value by strategy ratification and strategy formulation and despite strategy formulation is ranked in the second place, it should be considered first because of the complexities of the external environment, and the need for continuous innovation for organizational survival. In other words, there is still a great need for extensive research about corporate governance, board strategy formulation, board decisions and innovation. There are so many questions about the relations between corporate governance and innovation, about the role of corporate boards, their composition and the board processes in the so called "black box" of the boardroom. All of these questions are waiting to be answered by researchers, and

new theories explaining the processes of corporate boards in generating innovation have to be developed.

Creating innovation is achieved through an innovation strategy for continuous incremental innovation or innovation strategy for disruptive radical innovation. Indeed, in practice these two kinds of innovation are tried and implemented, yet there is the need for more academic research for generating theoretical knowledge on the topic of the strategic role of corporate boards in formulating organizational strategies for innovation. As a result, the theoretical knowledge induced from practice and deduced from previous theories is needed to be built upon and to be further developed so that boards can learn to strategize and manage innovation in a manner that will guarantee innovation, profitability and sustainability.

One possible solution is ambidexterity, and research on ambidexterity largely focuses at organizational level (Turner & Lee-Kelley, 2012). O'Reilly and Tushman (2007) give some suggestions about how ambidextrous organization can be successful, and according to them top management have to be aware that the ambidextrous model is essential for organizational survival, and consequently, they have to possess a strong strategic determination to apply it, and the senior team have to be aligned and flexible to direct ambidexterity. Later, O'Reilly and Tushman write

> "what is needed is a greater insight into the specific micro mechanisms [emphasis added] required for a manager to implement and operate an ambidextrous strategy" (2011, p. 8).

Building on O'Reilly's and Tushman's ideas, in this thesis it is proposed that the boards of directors with their decisions for innovation ambidexterity play a critical

role for the short-term profitability and the long-term sustainability of their organizations. Board processes and behaviors which aid ambidexterity are not researched fully yet, so this research area is very limited. As a result, there is a need to explore the specific micro mechanisms of board directors' decisions for forming ambidextrous strategies that involve both exploitation and exploration.

Smith and Tushman (2005) claim that exploitative strategy and exploration strategy denote one of two co-existing strategies which root ambidextrous organizational contradictions, so they indicate "paradoxical cognition" as a method to cope with this paradox or these contradictions. They define pParadoxical cognition" as compromising, coordinating and integrating the two conflicting strengths and achieve a balance by distinguishing similarities between the two.

This idea of "paradoxical cognition" is critical for boards and their board members especially in turbulent and complex environment. Board members should be very creative in balancing their "paradoxical cognition" while making decisions for ambidexterity. More specifically, the role of creativity in "paradoxical cognition" is important. In this thesis, the relationships between board creativity and decisions for two types of innovation ambidexterity are studied.

Board creativity is studied systematically by investigating three crucial variables that are board settings and climate for creativity, the creativity of board members and the creativity of the corporate board as a decision-making team. Board director's creativity influences the strategic decisions made in corporate boardrooms. Within this context, in this thesis the focus is on board member's creativity, board settings and climate for creativity and board creativity as a team. The research about board creativity is combined with the research of value

creating boards, CAS research, and innovation ambidexterity research, so these four research areas are integrated in order to be explored simultaneously. (See figure 1)

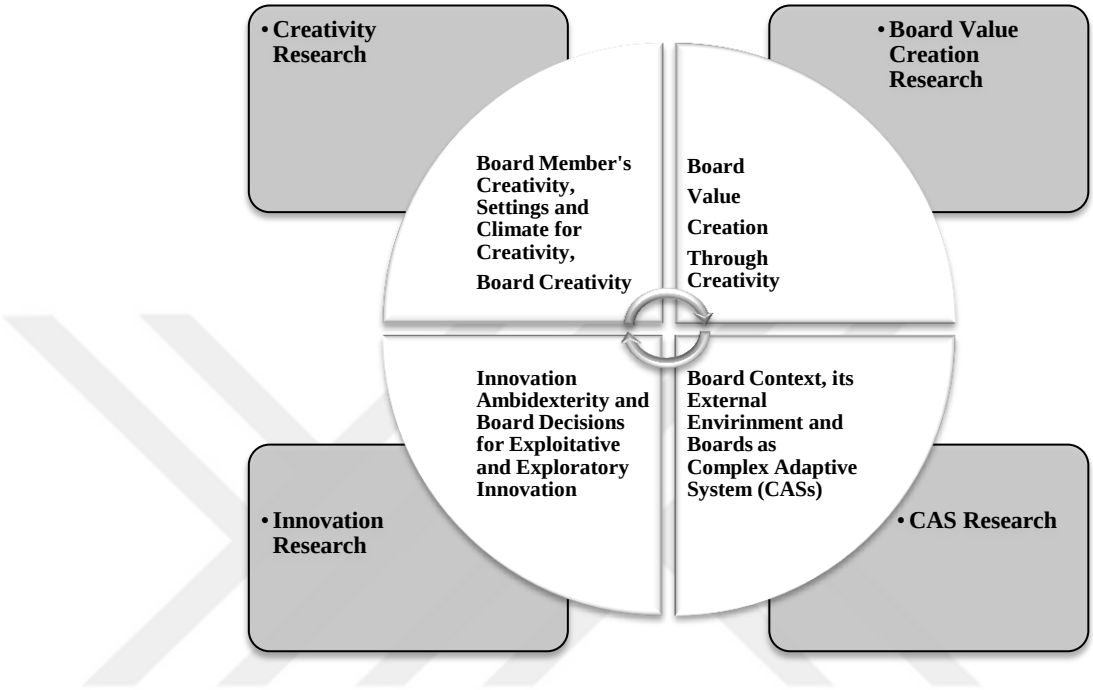

Figure 1. Integrative Reseach Framework

To sum up, board value creation research, CAS research, innovation research and creativity research are all integrated in this PhD thesis. More specifically, board value creation through creativity, board member's creativity, settings and climate for creativity and board creativity, boards context and boards as CASs, and board decisions for innovation ambidexterity form the research focus and scope on this thesis. The aim here is to bridge the research gap in the existing academic literature, and also to draw some managerial implications for contemporary boards. (See figure 2)

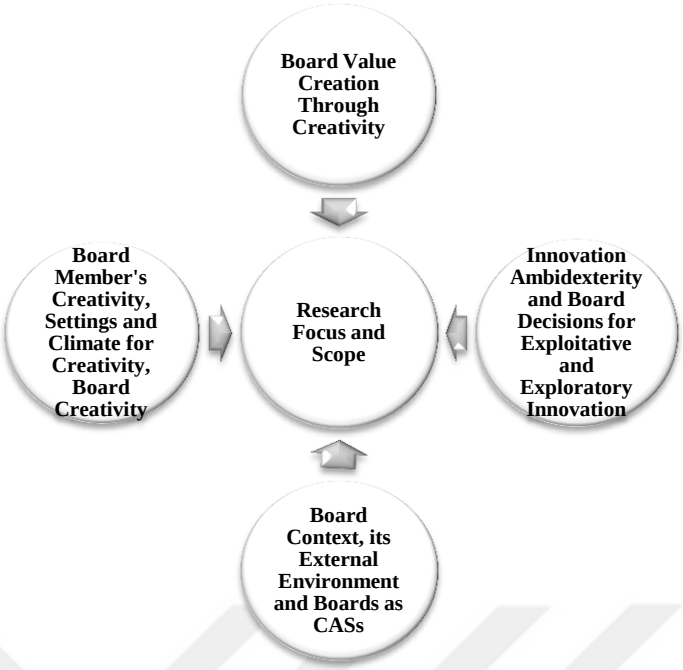

Figure 2. Research Focus and Scope

1.3 Research Relevance and Significance

This thesis is the continuation of the research stream about the behavioral perspectives of boards and governance developed by Huse and some other scholars, and expectantly the empirical findings of the research in this thesis will be helpful in building on prior knowledge. Huse (2007) and (2009) presents some building blocks in the corporate governance research. The first one is that Zahra and Pearce (1989) show the need to research board effectiveness and value creation in intermediate steps, and they also explain how board performance could be comprehended differently depending on the theoretical underpinning, so studying board value creation through creativity theories might be interesting.

The second one is Pettigrew's study (1992) in which he underlines the need to investigate boards as open systems by integrating sociology and leadership. The last

one is Forbes' and Milliken's (1999) research of boards as decision-making groups. In addition, boards are investigated as open systems and more specifically as Complex Adaptive Systems (CASs) in this thesis, and from the behavioral perspective corporate boards are investigated as decision-making groups that make strategic decisions in order to add value.

Other important building blocks discussed in the previous literature for the value-creating board framework are as follow. Andrews (1981) takes into consideration boards' strategy involvement, and as it is stated above the strategic role of the board or board strategic involvement for formulating strategies is of primary interest in this thesis. The other building block is the death of black box studies (Johnson, Daily, & Ellstrand, 1996), accordingly internal board processes are examined in this research. Lastly, the other building block is the team production theory (Blair & Stout, 1999), which is also relatedly discussed in this thesis since board members form a board team for strategic decision making.

According to Gabrielsson et al. (2014) and Huse (2009), Norefjell workshops have been the foundation in the development of a different international research stream with the objective to explore corporate boards.These are about the business cases focusing on creating sustainable firm-level value, cognition, teams, resources, leadership and materiality. Besides, these are meso-level studies where the corporate board is the unit of analysis. The empirical studies in this group are surveys, psychometric analyses and interviews. Some concepts that are used are dynamic capabilities, absorptive capacity, ambidexterity and decision-making theories (Huse M. , 2018). Appropriately, in this thesis the corporate board as the unit of analysis is

studied, and more specifically, its creativity and ambidexterious innovation decisions are tested by using survey data.

According to Huse (2018), corporate governance is at a crossroad, so he and his colleagues propose a reviewed research agenda. Huse et al., (2011), Daily et al. (2003), Gabrielsson and Huse (2004) and Hambrick, Werder and Zajac (2008) write three reviews which Huse and his colleagues use to shape their propositions, and they place the tenets of a new research stream by suggesting alternative theoretical approaches, alternative research questions and alternative methods.

All these actually try to demonstrate how to research board behavior and board's contribution to value creation (Huse, Hoskisson, Zattoni, & Viganò, 2011). Following this new paradigm of research in corporate governance literature, the research in this PhD thesis can be evaluated as significant because some alternative theories are used, and some alternative research questions about board creativity and its relation to value creation through creativity for ambidexterious decisions for exploitative and exploratory innovation are proposed and empirically tested.

The Behavioural Theory (Cyert & March, 1963), the Social Identity Theory (Ashforth & Mael, 1989) and the Team Production Theory (Blair & Stout, 1999) are the theories which are suggested for current research (Gabrielsson & Huse , 2004). In this thesis the Behavioral Theory of Cyert and March (1963), and the Team Production Theory (Blair & Stout, 1999) are also deduced to examine the corporate boards' decision making for innovation behavior.

The behavior and evolution of boards are explored as creative decision-making teams. Some of the behavioral structures and processes of boards are

empirically tested with the intention of filling this gap of empirical research in this new paradigm of corporate governance research. Three levels of analysis are examined. These are individual board member level, the corporate board as a group of directors and the organizational level that are the decisions for the innovation ambidexterity of the organization.

Two other suggestions are related with the need of more contextual and contingency studies and the collection of primary data through surveys (Gabrielsson & Huse , 2004). By taking these suggestions into account and positioning company boards as complex adaptive systems (CASs), this study is significant since it collects primary data by administering a survey questionnaire. The data collected also includes some contextual factors and contingencies such as technology and market turbulence and competition intensity.

The other suggestions are the use of processual research and the employment of processual data (Gabrielsson & Huse , 2004). According to Pettigrew (1997) processual studies explore the dynamic quality of human conduct and organizational life in the several layers of context in which activities occur. Besides, Pye and Pettigrew (2005) explain that studies of processes have to be conducted as processual researches.

Huse et al. (2011) write that process studies indicate changes, so process researchers have to work across or between different levels of analyses such as individual, group, organizational and social levels to explore the dynamics between relationships, so in this PhD thesis the three of these four levels of analysis are examined in order to test different relationships, so it is very relevant to the main research stream. These three levels are individual board member level, the group level

or the corporate board as a group of directors and the organizational level that are the decisions for the innovation ambidexterity of the organization.

Some trends in the corporate governance literature are observed. The first trend is that Agency Theory studies are questioned, so studies use alternative theories. Relevantly, instead of the Agency Theory some alternative theorise are used here to study corporate boards. The second trend is that more studies implement input-process-output-context approaches, and similarly this study applies the same approaches. A third trend is holistic and processual studies which are helpful in understanding actors. Stated differently, these holistic and processual studies recognize the significance of identities and behaviors of individual actors and groups of actors (Huse M. , 2018).

In this thesis, the creativity of individual board directors and the creativity of the corporate board or the group of directors are explored. The fourth trend is that studies conducted by researchers who are not located in the United States are growing, so the domination of US data is being reduced, and many European-based researches count on survey data (Huse M. , 2018). Relevantly, the empirical research in this dissertation is conducted outside of the USA, and survey data collected in Turkey is used.

To sum up, the research in this thesis is very relevant and significant because it studies corporate boards and examines the processes within them, and more specifically it tests the strategic role of corporate boards for value creation through board creativity for ambidexterious decisions. Stated differently, this research is related and important, and hopefully, it will serve to fill the gap in this new stream of knowledge.

1.4 Research Problem and Purpose

In this thesis it is proposed that there is a need for a "different kind of corporate governance" which is radically different than the previous one because nowadays, corporate boards must transform their organizations into organizations which embrace complexity and turbulence. Stated differently, there is the need for a new corporate governance style and board members who think, behave and direct creatively and add value.

Consequently, the research problem in this PhD thesis is in corporate governance and innovation, and more specifically, boards of directors and innovation ambidexterity, all of which require some further theoretical exploration and development so as to expand knowledge and comprehend better. Even more narrowly and specifically stated, the research problem in this PhD thesis is that there is a need for empirically exploring and explaining the relationships among board member's creativity, board settings and climate for creativity, board creativity, board diversity, the external environment as the board context, and board decisions for innovation ambidexterity.

Based on the above stated research problem, the main research purpose of this PhD thesis is to bridge a theoretical gap that needs to be filled by empirical research investigating the relationships among board member's creativity, board settings and climate for creativity, board creativity, board diversity, technology and market turbulence and competitive intensity, and ambidexterity for exploitative innovation and exploratory innovation.

1.5 Research Questions

Finding some explanations about the above stated research problem can be achieved by asking and answering some correlational, exploratory and explanatory research questions.

The main research question in this PhD thesis can be stated as follow:

1. What is the relationship between board creativity and board decisions for innovation ambidexterity?

Some other specific research questions can be listed as:

2. What are the main factors in board creativity?
3. What is the role of board member's creativity in board creativity?
4. What is the role of board settings and climate for creativity in board creativity?
5. What is the role of board diversity in board creativity?
6. What is the effect of board member's creativity on board creativity?
7. What is the effect of board settings and climate for creativity on board creativity?
8. What is the effect of board diversity on board creativity?
9. How does board creativity mediate the relationship between board member's creativity and board decisions for exploitative innovation?
10. How does board creativity mediate the relationship between board member's creativity and board decisions for exploratory innovation?
11. How does board creativity mediate the relationship between board settings and climate for creativity and board decisions for exploitative innovation?
12. What is the effect of board creativity on board decisions for exploitative innovation?

13. What is the effect of board creativity on board decisions for exploratory innovation?
14. What is the effect of board diversity on board decisions for exploitative innovation?
15. What is the effect of board diversity on board decisions for exploratory innovation?
16. How does board creativity mediate the relationship between board diversity and board decisions for exploratory innovation?
17. How do technology and market turbulence and competitive intensity moderate the relationship between board creativity and board decisions for innovation ambidexterity?
18. What is the role of the external environment as the board context in board decisions for exploitative innovation?
19. What is the role of the external enviroment as the board context in board decisions for exploratory innovation?

1.6 Thesis Structure

This PhD thesis is composed of several chapters. The first chapter is the introduction where research topic, context, focus, scope, relevance and significance are introduced. Then, the research problem and the main research purpose are stated. After that, some research questions are written, and the thesis structure is provided. The second chapter is detailed review of the literature. In this chapter, related theories are presented and all theoretical concepts and constructs are defined and discussed. In the methodology chapter, the research design is introduced, the research model is depicted, and some research

hypotheses are stated. Then, sampling, data collection and analysis methods are written. In the results chapter, all the outcomes of this research are shown in some tables. Discussion is the next chapter where the interpretations of research results, research and managerial implications, research limitations and recommendations for future research are discussed. The final chapter is the conclusion where the research is summarized and its contributions are stated.

2 LITERATURE REVIEW

The literature review in this PhD thesis is organizaed accordingly. Firstly, different corporate board systems so far discussed in the literature are reviewed. Secondly, the board context that is the external environment and its elements are presented. Next, boards are discussed as Complex Adaptive Systems (CASs) that are open to the turbulence and complexity in the external environment. Then, corporate boards as the human side of corporate governance are reviewed from the behavioral perspectives. Next, creativity, some creativity theories and board value creation through creativity are discussed. Lastly, board decisions for innovation ambidexterity are revised by studying innovation, ambidexterity and decision making.

2.1. Board Systems

2.1.1 "Input – Output" Board System

Prior research, for instance Hermalin and Weisbach (2003), and Dalton et al., (1998) does not show strong indication of the hypothesized connection between organizational performance and board demographic features. Daily et al., (2003) explaine the reason for this by stating the preference of some particular theoretical approaches like the nearly total dependence on Agency Theory, and some methodological approaches such as the widespread use of demographic variables. For instance, studies on boards of directors has researched the relationship between some demographic variables and the performance of the board or the organization (Johnson, Daily, & Ellstrand, 1996).

However, for a long time there has been the debate about the ability of demographic variables to find out the features of intermediate processes which result in board effectiveness (Zona & Zattoni, 2007). Lawrence (1997) writes about the assumption that there is congruence between subjective concepts and demographic

variables, and he also adds that the reliance on demographic variables gives the methodological advantage of parsimony. As a result, this gives the opportunity to academics to concentrate on a limited number of easy-to-measure variables. As depicted in the "input – output" corporate board system, the input are demographic variables, and the output are behavioral variables, and all intervening board processes that are tougher to observe and study are disregarded. (See figure 3)

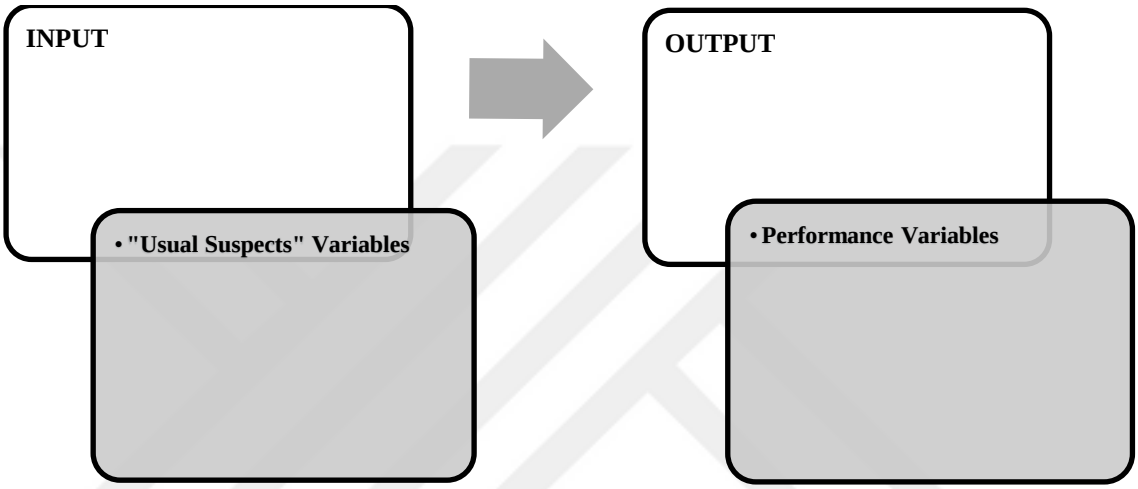

Figure 3. "Input - Output" Board System

2.1.2 "Black Box" or Closed Board System

There is this use of "black box" (See figure 4) comparison for describing a corporate board:

> "As a result, the board of directors remains a kind of "black box", whose internal workings can only be surmised from public information about decisions announced and actions taken. This is a serious, insurmountable problem for most researchers. Having a model for understanding, if not controlling, the way in which the research subject behaves is usually a prerequisite for insightful research in social

science, where the subjects are living human beings. Social science research – which is what governance research is – is difficult and tentative enough without the complications introduced by virtually complete confidentiality about the way the research subject works, and the consequent lack of knowledge on the part of the researcher" (Leighton & Thain, 1997, p. xv).

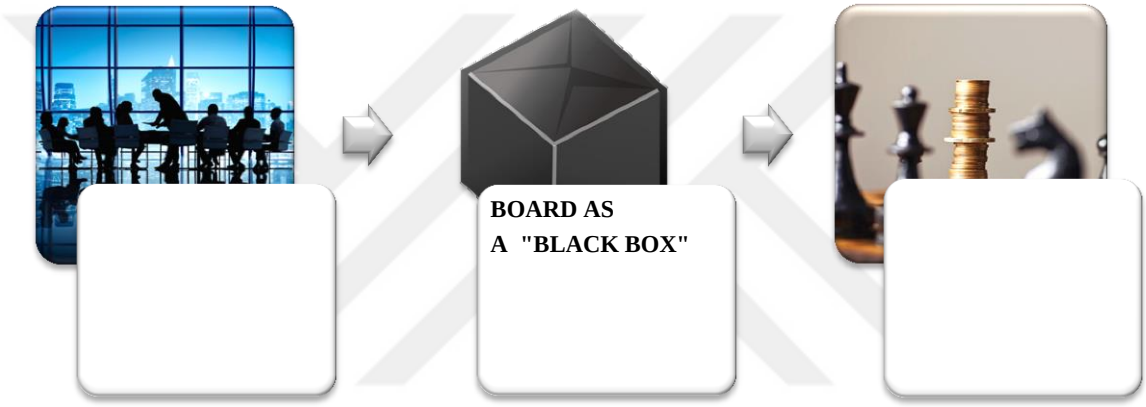

Figure 4. "Black Box" or Closed Board System

2.1.3 "Input – Process – Output" Board System

Pettigrew writes:

"Great inferential leaps are made from input variables such as board composition to output variables such as board performance with no direct evidence on the processes and mechanisms which presumably link the inputs to the outputs" (1992, p. 171).

He highlightes the significance of board processes, and focusing board research on them. His suggestion is that research in the future should focus on actual board behavior (LeBlanc & Schwartz, 2007).

Confidentiality and access, and lack of a model for comprehending how corporate boards behave are the chief reasons for the scarcity of empirical research on board processes. Due to these, boards of directors are challenging to study empirically, and hence theoretically (Leighton & Thain, 1997). As a class, boards of directors have a tendency to be closed groups that are also bounded by custom, privilege and confidentiality along with other access difficulties and practical limitations.

Leblanc and Gillies (2005) write that, if the academic research about corporate governance is to continue, there must be more focus and study on corporate boards in action. Consequently, getting into and empirically and successfully researching corporate boards is a very tough task for scholars (LeBlanc & Schwartz, 2007). Shortly, corporate boards are closed institutions, and few other than the board directors themselves witness boards in action, so these present a great challenge for researchers.

Gaining some insight about the boards' internal processes, which Daily et al. (2003) and Leighton and Thain (1997) denote as a type of "black box", may be the key to accurately understanding the role of corporate board in organizational performance. Termed as "board process", board decision-making inside and outside of the boardroom, board members relations to one another as a group, and their interactions with management are a dimension in the academic research of board of directors (LeBlanc & Schwartz, 2007).

Because of that Daily et al. (2003), Forbes and Milliken (1999), and Johnson et al., (1993) state that the usage of demographic variables can result in biased outcomes when complex processes and group dynamics are present, as in board decision-making. A more eclectic approach has been suggested by Daily et al., (2003). Board processes are the social-psychological processes refering to critical discussion, information exchange and group interaction (Forbes & Milliken, 1999) **(**See figure 5). This study explores the creativity of board members, board settings and climate for creativity, board creativity, board diversity, the board decision-making processes and their relationships to board value creation through ambidexterity for exploitative and exploratory innovation.

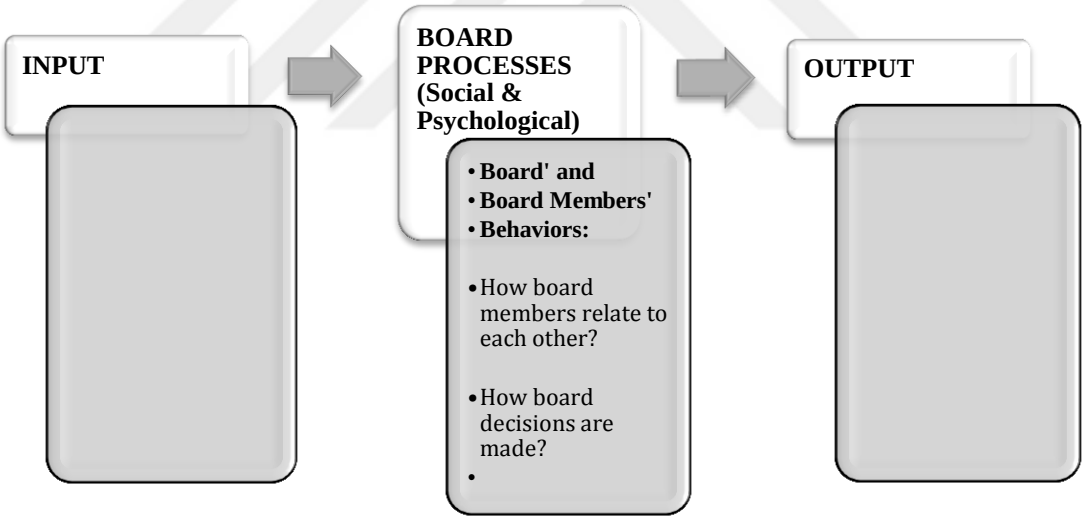

Figure 5. "Input - Process - Output" Board System

2.1.4 "Input – Process – Output – Context" Board System

Mace (1971) explores the discrepancy between myths and realities of directors serving on corporate boards, and according to him the myths are task expectations from the board, and the realities are the concrete task performance of the board. He also states that the human side of corporate governance is the main cause for this discrepancy. Like Mace, Huse (2007) also directs his attention to the human side of boards by highlighting behavioral and ethical dimensions of board members, and he proposes board value creation framework for exploring boards. Based on these, this PhD thesis also explores board members and their creation of added value through their creativity and decisions for innovation ambidexterity.

Zahra and Pearce (1989) emphasize the importance of mid-range theories, and they also discuss some board attributes that are apart from board composition. Since finding relationships between board composition and financial performance is hard, it is proposed that for future research, boards have to be studied as social constructs (Johnson, Daily, & Ellstrand, 1996). That is why, the approach of this dissertation is to examine corporate boards as social systems or teams because they are composed of members who interact. Evenmore, boards are adaptive systems because they are open to the external environment which is very complex today, and boards have to adapt to this complex environment characterized by technological and market turbulence and competition intensity.

According to Pettigrew (1992), one management topic that has not been researched well enough is the work of boards of directors, and due to this lack of extensive research, there have been few theoretical, empirical and methodological guidelines that can be helpful for researchers in this academic field. Later, Forbes and Milliken (1999) highlight the necessity to open "the black box", and they present a

board processes model by which they study the board of directors as a social construct, and they also use cognitive theories to comprehend corporate boards. According to them, boards should be explained by exploratory the characteristics of board composition, working style and board-level results, and they actually study corporate boards as decision-making groups by examining cognitive conflicts, effort norms and the usage of knowledge and skills (Forbes & Milliken, 1999). Similarly, in this thesis corporate boards are studied as decision-making groups.

Huse (2007) opens up the so-called "black-box" of boards by considering the most important part of corporate governance, its human element. Instead of using the traditional input – output approach, he discusses what is happening inside the "black-box" by describing practices and processes which occur on corporate boards. Huse takes the people element of corporate governance as the main approach in studying boards of directors and their value creation. More precisely, Huse emphasizes the importance of the cognition and behaviors of board members in board dynamics and board decision-making. Besides, he uses the open system approach, and he investigates how board members interact with the external world like the legal, political and environmental context. To sum up, Huse reveals how board processes and board decision-making actually contribute to value creation.

2.1.5 The Researched Board System

All of the above stated ideas are critical for this PhD thesis, and as depicted in the researched corporate board system below (see figure 6), the board context is the turbulent and complex external environment, and boards are studied as Complex Adaptive Systems that are open and adaptive to the external environment. Next, board settings and climate for creativity, board member creativity, board creativity and

board diversity are explored as board input. Thirdly, processes are investigated by studying board decision-making for innovation ambidexterity. Finally, board decisions for both exploitative and exploratory innovation are the output.

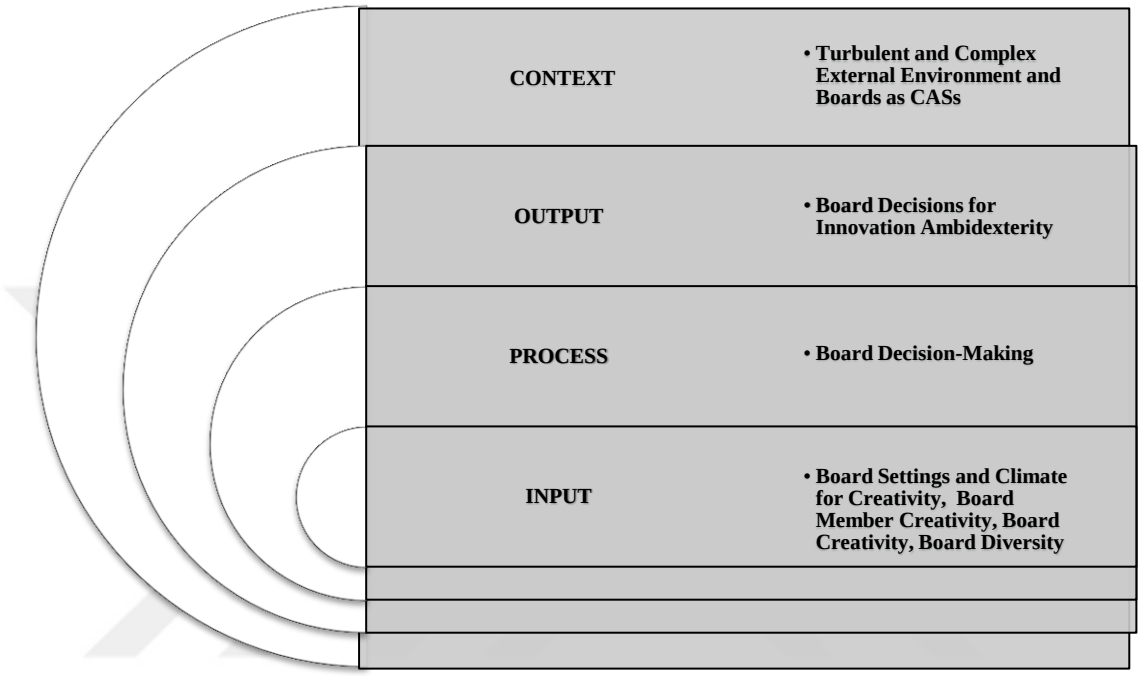

Figure 6. The Researched Board System

2.2 External Environment as Board Context

As shown in the researched corporate board system above the external environment is the board context. Due to the turbulent and complex external environment today, it is a good idea to start by discussiong the board context. Corporate boards and board members have to make decisions in this turbulent and complex board context so that they can direct their companies. In order to do so, board members and boards have to

consider this board context that is actually all the factors in the environment. These are also dicussed in the literarture as contextual factors.

According to Huse (2007), contextual factors affect board and governance behaviors. The contextual factors and resources may be permanent in the short time period, but they will change over a long term. On the other hand, corporate performance and value creation may impact the context. Changes in context and resources will be affected not only by the organization's performance, but also by the board members' decisions. (Huse M. , 2007) . That is why, board members' decisions for innovation ambidexterity are critical for the use of organizational resources, and thus, its short-term profitability and long-term sustainability.

Contextual factors which are within the organization are internal, and there are external to the organization such as the geographical, cultural and legal, the industry, and the competitive environment which containes technological opportunities, dynamism, heterogeneity and hostility (Zahra & Pearce, 1989). Some of these contextual factors are used in studies of corporate boards (Huse M. , 2007), so for the purpose of this thesis some external contextual factors like technology and market turbulence and competitive intensity are critically important. Stated differently, this study is going to investigate how technology and market turbulence and competitive intensity affect the relationship between board creativity and board decisions for innovation ambidexterity.

Some correlations between the competitive environment of organizations and their industries are observed. Industries may be described by using criteria such as international orientation, technological sophistication, knowledge, stakeholder sensitivity and capital intensity (Huse M. , 2007). The corporate governance in

emerging and in established or declining industries are different (Filatotchev & Toms, 2003).

The industrial environment is often characterised in terms of technological opportunities, heterogeneity, hostility and dynamism. Firstly, when there is a complex environment, or when it is characterised by heterogeneity board members' broad knowledge scope will be needed, so board diversity may be also essential. Secondly, swift decision-making might be required in environments characterised by dynamism and rapid changes. Board members who can speedily assess a situation are needed, so board members homogeneity can be desirable to diversity or heterogeneity when there is an industrial environment that containes dynamism. Thirdly, hostility is related with competitive climate and numerous stakeholders' relationships. On one hand, hostile competition can necessitate board members who are participative and involved in strategic leadership. On the other hand, other stakeholders' hostile attitude may benefit from board members who can make the environment friendlier (Huse M. , 2007).

Some academics consider organizational size as the contextual factor with the greatest effect on boards of directors and corporate governance. According to Huse (2007), most of the corporate board research and literature is on big organizations, but now there is growing attention being focused on boards in SMEs. The two most common measures of organizational size are the number of employees and the volume of sales. Sometimes organizational size is also assessed by the combination of both measures (Huse M. , 2007). Similarly, in this research organizatonal size is evaluated by using the volume of net sales and the number of employees.

Wiersema and Bantel (1993) state that environmental stability is the extent to which a company's competitive environment is uncertain, complex and disposed to

strategic change, and it is stressed here since such stability is a determining factor of the specific strategic problems facing a company and its top management. Therefore, the level of environmental stability versus environmental turbulence may be a vital factor in defining the strategic decision-making contribution of board members, and here environmental turbulence and its impact on board decision-making are studied.

Theory and research on strategic decision-making and environmental turbulence differentiate between two strategic issues in the decision-making process. The first issue is the development of new strategies, and the second one is the implementation of existing strategies. For instance, in stable environments the second issue is comparatively more significant. In other words, if there is a smaller amount of change in the environment, there is a reduced amount of need to frequently identify new strategic alternatives to sustain fit with the environment, so organizations in stable environments are expected to compete chiefly through the better execution of prevailing strategies (Guth & Ginsberg, 1990) .

Since the present world as a whole, and in particular the business world is constantly changing, and even more changes are forseen in the near future, it is nearly impossible to think about stable environment. In other words, for board members implementation of existing strategies is not possible today, and indeed it is going to be evenmore impossible in the future. Consequently, the challenge of the board is to regularly identify new strategic alternatives that is actually one of the main ideas on which the arguments in this thesis are built on. That is why, boards and board members' decision-making processes are studied, or the creativity in the development of new strategic alternatives such as exploratory and exploitative strategies for innovation in complex and turbulent business environment are explored in this thesis.

As Carpenter and Westphal (1999) state for organizations in turbulent environments it is anticipated that directors' behaviors will gain when board ties to other organizations following "complementary" strategies. Dutton and Duncan (1987) argue that such heterogeneity provides directors with useful information and expertise concerning both the execution of existing strategies and the adjustment of strategies in response to changing environment. Thus, while strategy execution remains a vital contingency for these organizations, environmental turbulence rises the significance of comprehending when environmental change is required, and how possible and specific changes may be given to organization' present resource base information that is likely to be provided by board members' appointments to organizations which follow alternative strategies.

Since the needs and expectations of customers continuously change, delivering constantly excellent product and service quality forces organizations to be market-oriented (Jaworski & Kohli, 1993). Market orientation can have strong or weak impact on business performance depending on some environmental factors like competitive intensity and market turbulence (Houston, 1986). This type of potential variations in the effect of market orientation on performance continue to be empirically researched. Since the antecedents of market orientation are top managerial behaviors such as shaping market orientation and risk taking (Jaworski & Kohli, 1993), the same behaviors are expected by board members, so there is the need to test the moderating role of the environment on the market-oriented decision making of directors.

Some academics propose that the environmental context of a company affects its level of market orientation. For instance, Tauber (1974), and Bennett and Cooper (1981) write that the significance of market orientation fluctuates with the

environmental context. Also, they discuss that the connections between market orientation and performance hinge on the environmental features.

Later, Lusch and Laczniak (1987) state that organizations in more competitive environment have to be more market-oriented. Kohli and Jaworski (1990) propose market turbulence, technological turbulence and competitive intensity as the three environmental characteristics which impact the connection between organizational performance and market orientation. Consequently, in this thesis, technology and market turbulence and competitive intensity are studied as moderating variables in corporate boards' decisions for innovation ambidexterity.

2.2.1 Technology Turbulence

The first external environmental factor tested in the present thesis is technology turbulence which is actually the degree of technological change (Jaworski & Kohli, 1993). Technology is an alternative avenue to gaining a competitive advantage. For example, organizations which work with emerging technologies that rapidly change may be capable to increase their competitive advantage through technological innovations, thus weakening, but not eradicating the significance of market orientation.

Conversely, companies which work with mature technologies are poorly situated to leverage technology for obtaining a competitive advantage, so they have to depend on market orientation to a larger extend (Jaworski & Kohli, 1993). Because of the rapid technology turbulence today, corporate boards have to consider it very seriously while making strategic decisions, and that is why technology turbulence as a variable, moderating board decisions for innovation ambidexterity, is examined here.

2.2.2 Market Turbulence

The second environmental factor is market turbulence, and it is defined as the degree of variation in the composition of clients and their preferences (Jaworski & Kohli, 1993). That is why, organizations in turbulent markets have to frequently alter their services and products so as to satisfy the shifting preferences of their clients. On the contrary, in stable markets where clients' preferences do not alter a lot, organizations' products and services require little modifications.

Consequently, Jaworski and Kohli (1993) conclude that companies which function in very turbulent markets should be very market oriented by following and responding to changing client preferences. It is needless to stress that the preferences of modern customers are changing a lot nowadays, so corporate boards and board members should take them into account in order to make innovation decisions.

2.2.3 Competitive Intensity

The third factor of the external environment is competitive intensity. It is related with the intensity of competition among the organizations in a particular market (Jaworski & Kohli, 1993). When the intensity of competition is absent or very low, the performance of the organization is good despite the fact that it is not market-orienced since clients are satisfied with company's goods and services. On the other hand, in context characterized with very highly competitive intensity, there are many options for customers.

In this case, if the organization is not very much market-oriented, it might lose clients to competition and perform unsuccessfully. Differently stated, market orientation is a crucial performance factor under extreme competitive intensity

(Jaworski & Kohli, 1993). That is why directors who serve on corporate boards have to formulate strategies according to the competitive intensity, and this is also studied in the present thesis.

2.3 Boards as Complex Adaptive Systems (CASs)

These three factors in the external environment shape the complex and turbulent board context for many corporate boards today. As a result, this complex board context influences the functioning of boards. Moreover, the board context has to be taken into accont when board members formulate strategies which are critical for the survival, profitability and sustainability of companies. In other words, the board context shaped by factors such as technology and market turbulence and competitive intensity have to be considered in making decisions for innovation. Consequently, corporate boards have to be studied as Complex Adaptive Systems (CASs) which formulate strategies to adapt to the complexity of technology and market turbulence and competitive intensity, so Complex Adaptive Systems Theory is used in order to discuss corporate boards as Complex Adaptive Systems (CASs).

2.3.1 Complex Adaptive Systems (CASs) Theory

The complexity theory model, discussed by Capra (1996), Stacey (1995) and Wheatley (1992), proposes that all organizations are Cmplex Adaptive Systems (CASs), and as such they unceasingly self-organize and co-evolve. There is not anything more natural than the fact that board members also self-organize and co-evolve within corporate boarsd that are also real Complex Adaptive Systems (CASs). According to Brown and Eisenhardt (1997), CASs as systems display adaptive,

complex and emergent behaviors since they are made up of numerous interacting agents. Effective co-evolution and self-organizing are more likely to ensue when organizations position themselves in modes that are consistent with the qualities of CASs. Stated differently, organizations position themselves in complexity absorbing ways when they identify themselves as the CASs they are, therefore, successful performance is probable. That is why, in this PhD thesis, it is suggested that the corporate board should arrange itself as a CAS in order to absorb external turbulence and complexities and perform effectively.

The opinion of organizations as CASs in Wheatley and Kellner-Rogers (1996), and Bergquist (1993), recommends that organizations collect information about their environments, themselves and their own actions, and then they use this information for acclimatizing to and coevolving with their environments (Kauffman S. A., 1995). From the Complexity Theory standpoint, organizations, in which there are many connections which are broadly dispersed, are more proficient in the variety of their behavior, and this in turn the results is adaptability (Mcdaniel, & Wallas, 1997). Weick (1979) states that without such variety organizations will miss vital data points, they will simplify their view of what is occuring in the environment, and they will mostly be incapable to reply to the high degrees of discrepancy among environmental elements. That is why ambidexterity of corporate boards is critical for responding to the environmental variations.

When organizations select managerial replies to complexity which are consistent with the features of CASs, they select to absorb the complexity and variety of the environment into the organization. Actually, this means that they

> "hold multiple and sometimes conflicting representations of environmental variety, retaining in their behavioral repertoire a range of responses, each of which operates at a lower level of specificity" (Boisot & Child, 1999, p. 238).

Such organizations would possibly distinguish several and evolving goals inside organizations and accentuate the significance of links among parts of the system as a method of recognizing and working out conflict which is shaped in part by the quest of several goals. Links, specifically rich links, convey information and aid meaning formation among subunits, hence providing systems with amended capacity to learn. One of the methods systems collect information about themselves and their surroundings is through the use of relations inside the organizations, and boards are CASs with connections among board members.

Dense connections signify multilayered and multidimensional relationships that permit and request board members to exchange more than specific information. In these relationships all types of data and information are in play, and there is also attention to the meaning of data. The unfolding meaning and usage of ideas, will be augmented and extended as a naturally taking part in relationships. Novel ideas will more eagerly arise as a consequence of an extended data set and range of meaning. These novel ideas are set loose in the web of dense relations where they are subject to alteration and re-interpretation, and where a communal sense of what activities are required can constantly appear. Hence, goal sets in organizations with more complex inner make-up are continuously growing.

Connections which aid externalities and effective co-evolutionary prospects also augment the system's capacity to self-organize which denotes to the capability to reconfigure activities and connections. The agents in CASs are self-organized since they themselves understand how to organize to change (Brown & Eisenhardt, 1997).

Likewise, board members on corporate boards also self-organize. The advantage of self-organizing is a structure which is sensitive to the necessities of linked parts. Self-organizing behavior is unsystematic by traditional management standards since patterns of behavior and decisions arise instead of resulting from precise plans as discussed by Morgan (1997) and Waldrop (1992).

However, self-organizing behavior is needed for corporate boards today because the modern business world requires a different kind of corporate governance. Stated differently, when the corporate board, and especially the directors form new external connections, the corporate board as a CAS is more able of co-evolving successfully with its external environment. Concurrently, when the density of internal connections rises that is as the board becomes complex with rich nets of relationships among directors, formalization and centralization decreases, so decision making is inclusive of all board members. Consequently, the internal self-organizing of the board occurs which is needed for the decision-making processes discussed in this thesis.

A complexity absorption reply to environmental complexity encompasses many and disagreeing depiction of the variability in the external environment. Board directors' responses to complexity from the absorption standpoint would contain the development of numerous and sometimes contradictory goals, the significance of a variability of strategic actions, more informal and decentralized decision-making patterns, and a widespread variability of dealings and connections for decision making. Goal complexity, strategic complexity, interaction complexity and structural complexity are the four foremost kinds of complexities which portray boards as CASs comparable to organizations as CASs.

In general, organizations prefer to adopt clear and restricted goals so as to allow ranking among alternative activities and to make available identification and motivation for partakers as stated by Scott (1981) and Simon (1976). These goals may contain preferences for long-standing ends such as profitability and market share. Later, Mintzberg (1994) proposes arguments that the single-minded quest of official goals can have a detrimental impact on organizational performance.

The quest of numerous goals, that is frequently done with portfolio strategies, keeps choices open and does not oblige an organization to an only high risk or high return pathway. Barney (1995) and Wernerfelt (1984) write that pursuing numerous goals can as well augment an organization's capacity to disarm competitors from embarking on direct attacks on any goal. Goal complexity is attained when organizations follow many dissimilar types of goals. That is why the board of directors is responsible for generating goal complexity by implementing innovation ambidexterity for setting goals for exploratory innovation and goals for exploitative innovation.

Developed by Porter (1980), Miles and Snow (1978) some strategic typologies are premised on the supposition that organizations have a tendency to adopt a set of actions consistent with a specific mode and breadth of competitive act in the market (Zammuto, 1988). This tendency is rooted in the idea that scattering attention across various strategies makes an organization incapable of being the best at any specific strategic activity, so this results in failure. Miller (1992) states that Kim and Lim (1988), and Miller and Friesen (1986) categorize successful organizations following a blend of strategies like differentiation and cost leadership.

Additionally, Miller (1992) writes that studies like Kotha and Orne (1989), and Murray (1988) have indicated that joint multiple strategic activities can be either

consistent or complementary Besides, Miller (1992) tests whether organizations hold numerous strategies, and whether this affects performance negatively. He also finds out that numerous strategies like pioneering and cost leadership happen, and that organizational performance is not affected negatively. Strategic complexity is attained when the organization concurrently follows a variety of strategies that must be formulated by the board of directors, and in this thesis strategic complexity is studied by testing innovation ambidexterity for simultaneously implementing exploitative innovation strategy and exploratory innovation strategy.

The official reporting structure within an organization is a network type in which the links among units or relations among people are soundly set, clearly defined and rarely changed (Stacey, 1995). Though, other relations also occur. For example, the pattern of decision makers who participate in strategic issues varies according to the decision content (Ashmos & McDaniel, 1996) and the interest in the problem (Dutton & Webster, 1988). Similarly, the top decision makers are the board members and their involvement in strategic matters show some variety in terms of content and interest.

Interaction complexity in strategic decision making is accomplished when there are high degrees of contribution by manifold stakeholder groups. Similarly, interaction complexity among board members is required for high quality decision making. Organizations that are comparatively decentralized and not as much of formal have more chance to impulsively reconfigure themselves as a result of information exchange relations, and they are not hindered by rules. This type of organizations may be evaluated as more complex due to the fact that the mechanisms governing exchange relations are fluid, and they are not a subject to precise rules.

Structural complexity is achieved when there is greater internal variety in the organization. This means that structural complexity is greater in organizations that are relatively decentralized and less formalized. Based on the similar analogy, the corporate board by their unique nature are fairly decentralized and not as much of formalized, so these actually can allow for structural complexity which is very essential for corporate boards. Stated differently, boards' structural complexity is very helpful for the interaction complexity among board members, and these two can be very beneficial for generating goal strategic complexity in the form of board strategies for exploitative innovation and board strategies for exploratory innovation.

2.4 Board Behaviors and Boards as Teams

2.4.1 Behavioral Theory

The behavioral theory of corporate boards and governance focus more on three pillars that can be listed as follow. The first one is an interaction and processes that take place inside the boardroom, and also the processes which happen outside the boardroom. The second is the decision-making by coalitions of actors and objectives which are the outcome of political bargaining. The last pillar is cooperating and conflicting interests which are part of the corporate board's decision making (Ees, Gabrielsson, & Huse, 2009).

In this thesis, these three pillars of the behavioral theory of boards of directors and corporate governance are also taken into consideration, but in a slightly different manner. Firstly, the processes and interactions that occur inside the boardroom are also important in this dissertation. Secondly, the decision-making by coalitions of actors and objectives which are the outcome of political bargaining is overlooked

because politics and innovation are incompatible, and the main objective of this study is to explore creativity and board decisions for exploitative and exploratory innovation. Lastly, cooperating and conflicting interests are part of the decision making of the board, and they are studied with the assumption that they are present for creating value.

Westphal and Zajac (2013) write about another step towards behavioral theory, and for decades they have significantly contributed to the studies of the boards of directors' behavioral perspectives. When two groups of researchers are compared one key difference is observed. Ees, Gabrielsson and Huse (2009) reflect on ideas from the classical work of Cyert and March (1963) and other colleagues such as March and Simon (1958).

On the contrary, Westphal and Zajac (2013) do not even mention these classical contributions because their aim is to offer an all-encompassing theoretical perspective on corporate governance which includes micro-causal factors and outcomes, and also macro-causal factors and outcomes. Their contribution is that they establish the significance of cognition, institutional processes and social structural relationships (Westphal & Zajac, 2013).

However, for the research in the present thesis this one key difference between these two groups of researchers is bridged. Cyert and March (1963) and other colleagues such as March and Simon (1958) and their ideas are of critical importance for this study. Besides, Westphal's and Zajac's (2013) theoretical standpoint on corporate governance that contains macro- as well as micro-causal factors and outcomes is also important. In other words, a more eclectic approach of the behavioral theory of corporate boards is used.

The behavioral perspectives of corporate boards and the human side of corporate governance focus on people as key actors and application of micro-level approaches such as the cognitions and motivation of these actors. In this thesis, director's creativity and board's creativity and their relation to strategic decision making are the cognitive aspects which are studied. The emphases on micro-level approaches and on understanding the human side of boards and governance are among Huse's (2018) main contributions which go beyond the surface for understanding board actors and board dynamics. This factor goes deeper and focuses on micro-level issues which are crucial for boards, governance and value creation.

According to Huse (2018), individual actors can have an intense effect on value creation for both, business and society, and he underlines that attention has to be directed to the dynamics stemming from individual actors and actors' motivations and interactions, and lessons from sociology and psychology can be helpful in these explorations. That is why, from the psychological perspective some Creativity Theories and from the sociological perspective the Team and Extended Team Production Theory are discussed in this thesis.

2.4.2 Team and Extended Team Production Theory

A team is a group of people who work together to achieve some objectives. Today, it is widely argued that teams are important for the success of organizations and businesses. In other words, teams are crucial in every organizational level from the lowest to the highest, but Nadler (2004) writes that the higher one gets into an organization the more difficult teaming becomes, so teaming at board level must be the most difficult if boards are considered as teams.

However, boards are not teams since they do not possess the general features of a team. For instance, as Forbes and Milliken (1999) write, boards typically do not meet very frequently, and the chair person does not possess the authority to instruct board directors regarding their participation and decision-making because corporate boards are collegially responsible, and all directors are often highly respected individuals and very experienced professionals (Huse M. , 2018).

A board of directors is a group of people who are characterized by having only a few face-to-face meetings, with more members than the typical working group, who are highly complex and perform varied tasks, and who have severe time constraints in working on them. Consequenly, boards of directors are especially susceptible to interaction challenges. The effectiveness of boards is prone to hinge on socio-psychological processes, in particular those processes leading to group participation, critical discussions and exchange of information (Forbes & Milliken, 1999).

It is uncommon to consider the board as a team. One reason for this is that the board meets only infrequently (Styles & Taylor, 2001). However, a corporate board is a group of people who have a psychological dependence on one another. Directors may be sued as a group, and thus they also depend on each other. Whether they like it or not, all board members are part of a group which has its own patterns and dynamics that affect how it acts. Board members will have to relate to group norms rather than to individual norms (Alderfer, 1986).

The description above indicates that it is difficult to have boards which work as teams. However, turning the corporate board into a team is not only possible, but it is also very essential and critical. For example, Huse's (2018) value-chain framework contains the team characteristics of cohesiveness, cognitive conflict, creativity,

openness and generosity, criticality and independence, preparation and involvement, and this framework indicates that it is significant from a value-creating perspective that boards function as teams. That is why for the present thesis corporate boards are considered as decision-making teams which function very well so as to create added value.

The Team Production Theory proposed by Blair (1995), and Blair and Stout (1999) has been declared as an alternative to the Agency Theory, and it recognizes the significance of context and contingencies (Huse M. , 2018). Companies are moral entities which are independent and separated. The key duty of the corporate board or board of directors is to create lasting values and maintainable competitive benefit in the company, and this is the main assumption in the Team Production Theory.

Huse (2018) discusses the Team Production Theory as described in law and economics. According to Alchian and Demsetz (1972), the Team Production Theory has its background in the Property Rights Theory. Later, it has been extended and adapted to corporate governance (Kaufman & Englander, 2005). The Property Rights Theory is a Team Production Theory, and advocates of the Property Rights Theory state that instead of representing the shareholders' interests, boards have to represent those stakeholders who accept risk, have strategic information and addvalue (Grandori, 2004). Gabrielsson and Huse (2009) state that Team Production Theory is rooted in the view of organization as a node of team-specific assets where stakeholders are expected to invest firm-specific resources with the hope of getting profit from team production.

According Huse (2018), in the team production approach, the corporate board is a mediating hierarchy. Its overall purpose is to lead the organization forward by

making available a balanced and longstanding viewpoint of activities which contribute to value creation. Stated differently, team production emphases the upside of value creation since directors are involved and decisions are the result of board processes. For instance, supporting organization specific investments is the foremost task for board members. The corporate board is accepted as a very significant coordinating body, for which representing and mediating among value adding stakeholders who assume exceptional risk and possess strategic information related to organizational operations are all parts of its formost task (Huse M. , 2018).

Simultaneously, the corporate board needs to direct the expertise and knowledge into the process of strategic decision-making so that the organization competes. The team production model discussed in corporate governance emphasizes resources and capabilities of board members as main sources of sustained competitive advantage, and this is also one of the main approaches in this thesis. Moreover, this version of team production theory does not only analyze the features of boards. It also underlines the role of well-functioning working structures and processes on boards so that these board processes enhance the ability of corporate boards to create value (Huse M. , 2018).

The extended version of the Team Production Theory pushes the behavioral perspectives and gives the opportunity for integrating the Team Production Theory (Blair, 1995) with the leadership and team development literature (Huse M. , 2018). Huse (2007) explores the extended team production approach, and he states that behavioral perspectives are included because there is the need to focus on contingency perspectives and the importance of the context.

Huse and his colleagues named their approach as “extended” since they found team production to be fairly static because Blair and Stout (2001), and Kaufman and Englander (2005) have not not correctly address human behavior and behavioral perspectives. The extended version of the Team Production Theory is dynamic, and it also comprises implications in relation to organizational behavior and strategic management (Huse M. , 2018), and these two are used in this thesis to discuss the strategic role of boards and the behaviors of board members.

There are some contributions that develop and conceptualize the Extended Team Production Theory (Huse M. , 2018). Firstly, Gabrielsson and Huse (2009) discuss boards of directors and corporate innovation. Next, Huse, Gabrielsson and Minichilli (2009) write about improving corporate governance practices. Third, Huse, Hoskisson, Zattoni and Vigano (2011), discuss the new outlooks on board of directors research and altering the research agenda. Last, Machold, Huse, Minichilli and Nordqvist (2011) discuss strategy and strategy involvement.

All-embracing presentation of a “modern team production theory” and the empirical support to this theory are given by Gabrielsson and Huse (2009). The two important points to be considered here are as follow. Firstly, these two researchers write about process-oriented culture that is associated with boards’ participation in the whole strategy process. Secondly, they state that a decision-oriented culture is allied with arms-length strategy ratification and control, and the application of Team Production Theory to entrepreneurial firms has been also studied empirically. How a team production approach to boards can help develop peak performing organizations is shown in Huse et al., (2009).

Compared to team production theory from law and economics, in the Extended Team Production Theory, Huse and his colleagues attempt to theoretically and empirically apply this theory to strategic management and organizational behavior. Contributing to sustainable value creation is the main task of corporate boards in the Extended Team Production Theory, and board members value creation is provided by their diverse competences, impartiality and willingness to be involved are the selection criteria when board members are recruited (Astrachan, Klein, & Smyrnios, 2002).

2.5 Board Diversity

A corporate board is a team of board members who work together, and the number and configuration of these members on the board is board composition. Board composition is about how a board should be assembled as a group of directors, so it as a team can successfully perform board roles and tasks. Van Knippenberg et al., (2004) defines diversity as heterogeneity among board members. In other words, instead of possesing similar characteristics, it is better for the board to be composed of directors who have different characteristics. This board heterogenity called board diversity brings many positive benefits for organizations.

Usually, modern organizations try to employ diverse human resources, and alike, shareholders have to employ diverse board members on corporate boards since diversity is critically essential for board creativity. The team production model of corporate governance suggests that for a board as a team, board diversity is vital, so diverse boards should be composed of directors who possess different demographics,

competensies and creativity to add value, so all of these are theoreticaly discussed and empirically tested in this PhD thesis.

Hambrick et al. (1996) use the “double-edged sword” to describe diversity since quite a few contradictory arguments in the diversity literature have been set forth both in favour of diversity and against diversity. Recently, the subject of diversity and its benefits for organizations and especially for corporate boards have been discussed a lot because diversity is a group feature which is the heterogenity of group members as it has been already stated above.

There are some determining prerequisites for board diversity which are the three key board composition dimensions concerned with independence, competence and processes. Board independence is actually provided by the proper ratio of inside board members to outside board members. The competence dimension in board composition is also about finding appropriate balances of competences possessed by board members. The process dimension is related with composing a group of board members who can work together and function well (Huse M. , 2007).

2.5.1 Dependent and Independent Board Members

Board composition in terms of independence is an important factor in board diversity. According to Finkelstein and Hambrick (1996), board composition is directors’ affiliation with an organization. In other words, as Petrovic (2008) states board composition within the corporate governance literature is usually considered in terms of the ratio of inside, dependent or executive directors to outside, independent or non-executive directors.

These two types of directors have some advantages and disadvantages for the different board roles. For the strategic role, outside directors may not be able to influence strategic decisions since they lack superior information about the business. On one hand, outside directors can either bring resources like access to external resources, networks and expertise that are a complement to or a substitute for inside directors' resources (Clarysse, Knockaert, & Lockett, 2007). Raheja (2005) highlightes that inside directors are a critical source of organization-specific information and knowledge for the board. On the other hand, as Maseda, Iturralde and Arosa (2015) write outside directors may not even fully understand the nature of the organization's operations.

Different studies conducted by Miller and Le Breton-Miller (2006), Astrachan, Klein and Smyrnios (2002), and Cabrera-Suarez, De Saa-Perez and Garcia-Almeida (2001) indicate that inside directors' presence on the board can be a valuable asset in the decision-making process. Inside directors' experience within the organization can contribute a lot to the decision making. Shortly, inside directors are crucial for board's strategic role, but they should not be only internally focussed because it is essential to observe and learn from the complex and turbulent external environment.

However, both inside and outside directors are essential for strategic decision making of corporate boards because sometimes inside directors may have resources that are complementary to those of the outside directors, and at other times it might be just the opposite. That is why board composition is important. In other words, the ratio of inside or executive directors to outside or non-executive directors is critical when boards act as a team to make strategic decisions especially under the conditions of turbulence and complexity. This ratio or board composition is necessery for

ensuring the heterogeniety or diversity of corporate boards, and this diversity is the source for creativity and innovation.

However today, as the complexity and turbulence in the environment is increasing, the requirement and number of outside directors is also increasing, but not understanding the nature of the orgnization's operations is not acceptable. Actually, they should be fully knowledgable about organization's industry and business so that they can contribute to board's strategic role and add value through creativity for innovation ambidexterity.

The ratio of insider board members to outsider board members has become a common topic in designing and researching boards. An insider board member is an individual who is part of the top management team (TMT) whereas an outsider board member is someone who is not. However, this is insufficient because for being completely independent, an outside board member has to be financially and psychologically independent from the CEO and TMT (Huse M. , 2007).

This insider to outsider ratio of board members on boards in Turkey is a very important topic, so it is included in this study. Firstly, it is important since individual board members who are insiders, or the executive directors can have very different knowledge, competencies and creativity. Similarly, board members who are outsiders, or the independent nonexecutive directors can bring unique competencies to the board. Besides, this ratio is one of the sources for board diversity which is a critical factor in the strategic decision-making for exploitative and exploratory innovation, or innovation ambidexterity as a combination of these two types of innovation.

The main focus in recent corporate governance debates has been on independent board members who can monitor management, and that is why

transparency and value distribution have been the objectives as discussed by Huse (2018). The availability of independent board members in this study is considered from the board diversity perspective which is also linked to board creativity. Strategic decision-making and long-term sustainable value creation have become the objectives of the modern understanding of corporate governance, so these have altered the contribution of boards from control and value distribution to long-term value creation (Huse M. , 2018). The same understanding is implemented in this thesis.

2.5.2 Observable or Demographic Diversity

Board composition in terms of board members' demographics and competencies are two critical elements for board diversity. Board diversity is actually the variation in the composition in terms of many demographic characteristics. Milliken and Martins (1996) state that the two diversity groups are observable diversity and less visible or less observable diversity. Age, gender, nationality, race or ethnic background form the observable diversity group.

In terms of board diversity, the two demographic characteristics important for the present thesis are gender and age diversity. Especially, gender diversity and the presence of women board members is overemphasized around the world and in Turkey. It is discussed that the number of women board members is very insufficient on Turkish boards. Age diversity is less popular. However, the usual practice is that the number of young board members is very limited. Usually, there is the dominance of seniour board members who are in the age range between 50 to 70 years old. Moreover, in order to reconcile, dissimilar or contradicting viewpoint groups are forced to process task relevant information in detail, so this can prohibit the group

from opting with ease to follow a course of action that seems to lead to consensus (Van Knippenberg, De Dreu, & Homan, 2004).

2.5.3 Less Observable or Cognitive Diversity

The second group of less observable or less visible diversity is related with the background of directors like organizational membership, industry experience, occupational, functional and educational backgrounds (Kang, Cheng, & Gray, 2007). Less observable diversity factors have been less researched. Since constructs such as creativity, innovation and environmental turbulence and complexity are also very important for this study diverse backgrounds of board members are critical for the board diversity studied in this thesis.

Diversity on corporate boards is possible when boards have board members with wide-ranging backgrounds and competences. Even more, diversity may also be related to differences in the personalities of board members. The benefits of diverse boards is that directors with dissimilar backgrounds may ensure that different competences are available on the board and directors' complementary perspectives may challenge the rules of the game on the corporate board (Huse M. , 2007).

Board diversity is significantly determined by the internal workings or processes of the board. The argument which favours diversity is that heterogeneity ensue in a wide-ranging outlook which let groups to be entailed in comprehensive conversations and form different options (Watson, Hogarth-Scott, & Wilson, 1998). This is conceivable since diverse team members sense problems from a variation of

viewpoints. These viewpoints are discussed, and the outcomes are a broad array of solutions and consequences for each viewpoint (Robinson & Dechant, 1997).

External directors or independent board members may contribute with general problem-solving expertise even though they do not have firm-specific knowledge. They may find efficient ways of communication and information processing eventhough their time spent on board work is limited. They may lack familiarity with the every day problems in the company, but they may provide stimuli based on external variation. Not only will directors control managerial decision-making and intervene if performance declines, but they will also continually add value to decision quality through choice, scanning and interpretation. Strategic decision-making is about seeing possibilities under cognitive constraints, complexity and uncertainty. This is also the case for the board's strategy involvement. The diversity and cognitive perspectives fit nicely into a behavioral theory of corporate governance and boards of directors (Huse M. , 2007).

The existence of alternative goals in the behavioral approach provides inputs for additional information and knowledge. Indeed, the diversity of goals among internal and external actors can be considered beneficial, as it stimulates the discovery and active search for new knowledge as a by-product in the goal conflict resolution process. New knowledge enters the board decision-making process through the adjustment of aspiration levels and the formation of alternative dominant coalitions.

The uncertainty and complexity of strategic decision-making entails numerous knowledge types among the decision-makers, and various ways of processing knowledge. Various types and degrees of complexity and uncertainty will thus necessitate various types of knowledge and diversity from the board members as well

as putting demands on the board's working style (Huse M. , 2007). Moreover, directors should collaborate, work as a team and share their skills and knowledge in a productive setting to enrich their collective efforts and decision-making capabilities (Huse M. , 2018),

Huse (2007) defines board members' personalities and personal characteristics as the fifth type of competence. He also states that this kind of competence is actually the ability of board members to think creatively, analytically and critically. For the purpose of this dissertation, only the creative personality of each board member is measured by assessing his or her creative thinking and behaviors. Furthermore, diverse board members with different backgrounds and personalities will vary in the domains in which they have knowledge, the problems they have been exposed to and the problem-solving skills they have developed (Rindova, 1999). These conditions will, in turn, bring greater variety to the problems that the board identifies, the solutions it develops, and the decisions it takes.

Besides, as Carter, Simkins, and Simpson (2003) state some of the benefits of board diversity cover effective problem solving, increased innovation and creativity, and all of which are important for this thesis. Some recent studies conducted by Rindova (1999), Forbes and Milliken (1999), and Robinson and Dechant (1997) have indicated that to understand the impact of diversity, it is very essential to study boards as decision-making groups. This is the reason why the purpose of this thesis is to study diversity of corporate boards as decision-making groups and the effects of board diversity on board creativity. In other words, the relationship between board diversity and board creativity is explored.

Most research into how boards contribute to strategy has been related to how boards deal with the conflict resulting from divergent preferences of principals and agents. How cognitive perspectives influence the board strategy contribution has received inadequate attention hitherto according to Rindova, so she makes a contribution to the investigation of the relationship between corporate boards and strategy from diversity and cognitive perspectives (Rindova, 1999).

She shows that board's contribution to strategy involves resolving conflict, complexity and uncertainty. Firstly, conflict comes from diverging interests among the various actors. Secondly, complexity is related to interactions among multiple actors and events, and finally uncertainty comes from information asymmetry between the various actors, and from inadequate information about the future impact of some factors such as social, technological and economic (Rindova, 1999).

From a cognitive outlook, Rindova (1999) predicts that both board involvement and diversity in knowledge among board members will increase as complexity and uncertainty increase. The study in this thesis is actually testing Rindova's prediction. The main idea in this thesis is that with the rapid increase of turbulence and complexity in the external environment, corporate boards have to become even more diverse in terms of unobservable diversity factors such as knowledge and competencies, and directors should be continuously involved in startegic decision-making by using their creativity that should support and enrich board creativity.

2.6 Value Creating Boards

2.6.1 Value Creation Theories

The theories which view corporate boards as strategic resources of an organization that create value are the Resource-Based View Theory (RBV) and Resource Dependence Theory (RDT). The RDT focuses externally because it underlines the relational resources or the social capital of board members. However, the RBV theory focuses internally on the knowledge, skills and competence of directors, and this theory is of primary importance for the present thesis as a context for value creation since the RBV theory is suggested as a realistic approach for understanding boards of directors which are the unit of analysis in this thesis.

The two basic suppositions in the RBV theory are as follow. The first one is that there is a heterogeneous distribution of resources across organizations. The second supposition is that these resources are not transferred without cost. Based on these suppositions, it is claimed that resources are both valuable and rare, and they can produce sustainable competitive advantage if they are not imitable, substitutable and transferrable. Resources which are instantaneously valuable, rare, inimitable, non-transferable and non-substitutable will create lasting competitive advantage (Huse M. , 2007). Consequently, corporate boards or board members are resources that have the above stated characteristics, and that is why they are explored in this thesis.

Teece, Pisano and Shuen (1997), and Barney (1991) write that according to the RBV Theory, organizations possess a unique or inimitable bundle of resources. These unique bundles are complex, dynamic and intangible. According to them, one subset of unique bundles aids organizations to attain competitive advantage. Consequently, a further subset of such bundles results in excellent lasting performance. Shortly, the complex dynamic and intangible resources in the form of

unique bundles are critically important for organizational performance and competativeness.

As Barroso, Villegas and Perez-Calero (2011) state the board performs a service and strategic role that can be explained from the RBV Theory perspective. In other words, board directors' knowledge, experience and expertise can be a resource which is combined with organizational strategies in modes which produce positive performance outcomes. This is exactly the main focus in this thesis. Actually, from the RBV Theory perspective director's creativity is linked with innovation ambidexterity which leads to organizational results like short-term profitability and long-term sustainability.

The RBV Theory and RBV-based corporate governance literature openly identify board human resources and strategies which can help organizations to innovate and accomplish a competitive edge. According to Shaukat, Qiu and Trojanowski (2016), based on the RBV Theory the corporate board is viewed as tacit which means invisible and socially complex because the board is based on team effort, and according to Hart (1995) the board is accepted as an internal resource. Moreover, the RBV perspective is used to underline how board relationship as crucial and internal ability may be a foundation for competitive advantage (Erakovic & Goel, 2008).

Barney (1991) explaines that a resource can deliver a sustainable competitive advantage under three criteria. Firstly, the resource has to be valuable that means it should engender high financial value to organizations. Secondly, the resource has to be rare. This means that it should not be possessed by numerous other organizations within the same industry. Lastly, to guarantee sustainable competitive advantage, it must be challenging for a resource to be imitated by an organization's competitors.

Stated differently, all tangible resources are open to be easily imitated by other organizations. Only intangible resources like human resources are difficult to be copied (Barney J. , 1991). As a result, the board as an internal, intangible, tacit and social complex resource is very important resource with sustainable competitive advantage because of the three criteria discussed.

From the RBV perspective, Carney (2005), Castanias and Helfat (2001), and Gadhoum (1998) argue that specific features of corporate governance systems may have the vital capability which produces a competitive advantage that is sustainable for an organization when the three criteria stated above are met. Firstly, the network role of boards is expected to generate organizational economic value when directors have superior connections with main resource providers like financial institutions, potential and current investors, government agencies and suppliers. Next, the governance practices of different organzations may display some variations due to three factors. The first factor is sustainability, reciprocity and firmness of effective director relationships. The second one is values, knowledge, behavior and reputation of executive directors and independent nonexecutive directors. The third and the last factor is the wider institutional context where the organization functions.

The relationships among board members are rooted individually, and they comprise the tacit knowledge which is a distinctive resource. Leonard and Sensiper (1998) state that the RBV outlook highlights “path dependency” which means that rare resources are advanced gradually through occasion that do not repeat. For instance, main organizational transitions triggered by important business growth or downturn can both have positive impacts on the development of directors’ relationships which frequently advance into unique capabilities. Also, corporate

governance practices entrenched in close relationships with suppliers and customers can create “path dependancy” which might be difficult to immitate.

The complexity of interpersonal chemistry also prevents resource imitation, so this makes the board relationships dynamics a socially complex resource (Erakovic & Goel, 2008). Despite the fact that there are numerous studies in the literature such as Carter and Lorsch (2004), Finkelstein and Mooney (2003), and Demb and Neubauer (1992) which examine the effective board functioning, the techniques for growing close board relationships and initiating team-work between independent and strong individual directors still remains very ambiguous. Developing effective relationships on corporate boards is frequently a complicated social interaction process which reflects limitations of individual values and efforts, and institutionalized norms. This socially intricate resource surges the challenge to be imitated by competitors. This socially complex resource is indeed the most important added value of the social capital within the boardroom.

The second value creating theory that needs to be discussed is the Resource Dependence Theory (RDT). Under this theory, the board is an observable linkage between the organization and its environment (Pfeffer & Salancik, 1978). According to Shaukat, Qiu and Trojanowski (2016), in the RDT some directors, especially outside directors, play resource dependence role when they serve on a board (Pfeffer & Salancik, 1978). They play this resource dependence role by providing crucial resources to an organization, or by supporting the organization to guarantee these resources through some relations with its environment as discussed by Hillman, Cannella and Paetzold (2000), and Pfeffer (1973).

Studies such as Geletkanycz and Hambrick (1997), Boeker and Goodstein (1991) and Boyd (1990) show that RDT is one of the typical approaches for

scrutinizing corporate board behavior. This viewpoint is related with the inclination of organizations to co-opt the sources of uncertainty or to form collaborative contacts so as to rise their control over the exernal environment. According to the RDT viewpoint, board members as the primary decision makers are given a vital role in searching for alternative resources and reducing the uncertainty in the external environments (Pfeffer J. , 1972), and in developing numerous relations with different organizations (Pfeffer & Salancik, 1978).

As Erakovic and Goel (2008) state proponents of RDT perspective evaluate the board of directors as a main entity which could make available critical resources for the organization, shield it from the environmental uncertainties and lessen the transaction costs in handling external relationships debated by Huse (2005) and Lynall, Golden and Hillman (2003). Particularly, outside or independent non-executive directors provide specific resources like financial funds and information. They also provide access to some external institutions and powerful organizations such as consulting firms, regulatory bodies and international organizations. Moreover, they provide legitimacy and professional knowledge and advice (Hillman, Cannella, & Paetzold, 2000).

Consequently, it can be shortly stated that according to RBV and RDT standpoints, internal and external organizational processes are affected by the significance of resources for an organization (Erakovic & Goel, 2008). Similarly, the corporate board from the RDT (Pfeffer & Salancik, 1978) standpoint is useful as an external resource, and from RBV (Barney J. , 1991) standpoint the corporate board is useful as an internal resource. This multi-theory approach in this thesis proposes a much better and convincing description of the various aspects of board processes, behaviors and decisions. The board's creativity and decision-making processes are

investigated and the value creation of board members is discussed from the RBV perspective.

2.6.2 Board Value Creation

The obligation of boards is to protect wealth as well as to create wealth (Tricker R. I., 1984), so different board tasks relate to and influence the various elements in the value chain (Huse, Gabrielsson, & Minichilli, 2009). Recently, some researchers study boards' tasks not only in the last value distribution part of the value chain but in the entire corporate value chain.

Taylor (2001) states that instead of enhancing business prosperity throughout the entire value chain, great concentration is on value distribution due to the determination to get short-term profits. In the second part of Taylor's argument it is emphasised that great concentration is on value distribution due to short-term profits, and this is the main reason for board decision making which guarantees short-range value creation in the form of financial profits. That is why exploitative innovation is needed and board members should make decisions for exploitative innovation which can bring short-term financial gains.

The first part of Taylor's argument is instead of enhancing business prosperity throughout the entire value chain, and this is possible by implementing exploratory innovation, so boards have to make decisions for this kind of innovation as well. However, in this thesis the main idea is that board members or corporate boards create value throughout the corporate value chain by making decisions for innovation ambidexterity which balances short-term value creation through exploitative innovation and long-term value creation through exploratory innovation.

When evaluating value creation, a time perspective must be included so that a distinction between long-term value creation and short-term value creation may be made. Huse's emphasis on board value creation is more long-term than short-term. His corporate governance definition indicates that value creation can be assessed in relation to how it optimizes value for groups of actors or certain individual actors, yet value creation can also be assessed in relation to the organization itself (Huse M. , 2007).

Similar to Huse's proposal, in this thesis a clear distinction is made between short-term value creation through board's decisions for exploitative innovation and long-term value creation through board's decisions for exploratory innovation. However, unlike Huse's emphasis on more long-term value creation than short-term, in this thesis a more balanced value creation for innovation ambidexterity is proposed since it seems to be the only strategy for short-term value creation and long-term value creation in complex environments characterized by technological and market turbulance and competitive intensity.

Boards have to be involved in conditions that they create the most value (Huse M. , 2018). Stated differently, board performance should be measured by its value creation not by its task involvement. He states that there has to be an alignment among the use of resources, tasks and value creation, and this can be achieved by implementing some strategic terms such as value chain and resource approaches so that value creating tasks and capabilities are identified.

There are two sides in Huse's value creation perspective. The first side is from strategic management, and it states that the corporate board should add value by creating long-term sustainable and competitive advantage for the company. The

second side is broader, and it is about the creation of a positive and sustainable society, and how boards can add value to these. Nowadays, most organizations use an old-fashioned approach to value creation (Porter & Kramer, 2011) because during the past decades, optimizing short-term financial performance has been accepted as value creation. However, the new long-term perspective for value creation is that organizations have to be in relation to all stakeholders so that all of them can make each other better (Huse M. , 2018).

Huse (2018) disusses the value-chain approach to boards' value creation, and he writes that this approach has proved to be useful for communicating how values are created. The most important argument is that boards have to be involved where they add the most value. In the value-chain approach, directors who serve on corporate boards need to reflect on the values the organization creates, and they also have to think about which tasks they are involved in so that they can contribute to the sustainability of those values. The board value-chain perspective and the value-chain framework have been applied in various contexts, and all these have been discussed in some articles written by Gabrielsson, Calabro and Huse (2016), Huse and Gabrielsson (2012), Huse, Gabrielsson and Minichilli (2009), and Huse (2003).

The value-chain framework appeared for the first time in 2005, and it has been used as a board evaluation tool since then. Through theoretical reflections and empirical data, the value-chain framework has been developed further. Huse (2018) writes that theoretically this framework has been used for classifying theories about boards and board tasks. He also summarizes the value-chain approach to value-creating-boards, and it has to be considered very seriously for the purpose of this thesis. Especially, the value creation for innovation is extremely important for this

study. The task of the board is strategic management and collaboration, and only this task is examined here. Diversity of directors is the resource, and it is tested in the present research. Finally, the group effectivenes is characterized by creativity, preparation, cognitive conflicts and cohesiveness (Huse M. , 2018), but for the purpose of this thesis only board creativity is explored.

There is the need for making a distinction between numerous internal and external value creation measures and considerations. Still, value or wealth creation may contain doing what is best for the organization. Thus, Huse (2007) considers value creation throughout the entire corporate value chain. Corporate board's duty comprises balancing the distribution of value to many different stakeholders who can have different value creation preferences as shown by the struggling between ideologies, and also by the strategizing among several actors or groups of actors. Contingency perspectives have to be taken into account to comprehend value creation since innumerable contextual factors impact the perception of value creation. Consequently, what is considered as value creation in some contexts may not be considered as value creation in other contexts.

Huse (2007) uses the value chain approach for board evaluation purposes. The dimension of knowledge is emphasised through the requirement that directors have to use their knowledge and skills to sustain value creation effectively and unceasingly. Inbound logistics is the first phase, and it is about securing and providing resources because a company depends on many different types of resources. These resources are controlled by the external environment. As a result, board networking tasks which involve managing all kinds of resource dependencies, can be of certain importance in this phase.

Operations is the second phase which containes general management, finance, sales and marketing, production and law. That is why, board advisory or consultancy tasks are of a great significance in this phase. Innovation is the third phase. It is the development of the organization itself, its processes, markets and products, so the board strategy involvement through mentoring and collaboration is very important in this phase (Huse M. , 2007), and that is why board strategy involvement for innovation is examined in this thesis.

The fourth phase is resource allocation. Resource allocation and decision-making involve making decisions which are vital for long-term organizational development. In this phase, corporate boards have a very critical decision ratification and control task. The fifth phase is implementation, in which boards of directors have a behavioral control task, including hiring, compensating and firing of the CEO. The sixth and final phase is value distribution that containes decisions on how company assets should be allocated to different stakeholders. In this phase, board output control tasks and negotiations are imperative (Huse M. , 2007).

Comprehending board tasks from the value chain outlook helps to comprehend that boards have several tasks going on simultaneously, and all of them can contribute to value creation. This is far beyond the arguments that corporate board tasks depend primarily on contexts like organizational life cycle, size, ownership structure, type and dispersion, CEO tenure and characteristics, industry, geographical, national and cultural differences.

The context may have an effect on how the contribution in different phases must be balanced (Huse M. , 2007). That is why the organizational context or the external environment where an organization operates should be considered when

boards make decisions since this affects board value contribution. The board value chain approach is still novel, and there is a need for conceptual development and empirical investigations, so the empirical analysis in this thesis can contrubute to the board value chain approach from the innovation ambidexterity standpoint.

Nevertheless, corporate boards can realize their complete potential value-creating only by cooperatively ensuring that all these roles are enacted at once. The resource providers and liaison facilitators have different networking tasks like contacting, ensuring legitimacy and lobbying. The features of the resource providers are discussed in the literature in terms of RDT (Hillman, Cannella, & Paetzold, 2000). The directors who are resource providers must have big networks among the groups that are the most significant for the organization, and they need to possess credibility within these groups. For some organization, sometimes it might be critical for resource providers to relate to banks, public authorities, politicians, competitors, suppliers and customers (Huse M. , 2007).

The knowledge that is needed is more related to who the board directors are than to what they do. For example, the resource provision tasks may be obtained by consultants who are external to the organization. Moreover, it gives more commitment and credibility when the resourse provision competency is possessed by some directors who serve on the board. Shortly, from a knowledge-based or resource-based viewpoint, directors on corporate boards are valuable resources for their organizations because of their intangible competencies.

There could be some other ways for an organization to obtain these resources. For instance, through external consultants, yet sometimes board membership may be the only way of providing certain resources that are inimitable, rare, non-substitutable

and valuable so that long-term organizational competitive advantage is guaranteed. Board members may play mentoring roles for the organization, as well as the CEO, by helping the CEO to become a discussion partner in board meetings. This involves independent directors who can contribute through their openness and generosity, and who share their time, knowledge, experiences with the CEO (Huse M. , 2007).

Directors who have diverse features and backgrounds should participate in creative processes leading to innovation in the organization, and its markets, products and processes. They may in this way contribute to the formulation and formation of the context and content of strategic decisions. Directors are decision-makers and analysts, and they have to comprehend the consequences of the decisions they approve. The main task of corporate boards and directors is usually to make decisions on issues which are critical for the size of and consequences for the organization. Therefore, there is a need for directors who combine maturity, responsibility, risk-taking and integrity on the side of stakeholders with both long- and short-term perspectives.

The behavioral control tasks involve board members taking evaluator and controller roles and having sufficient independence, knowledge and time to measure managerial performance. For independent directors, who often have less than full-time involvement with the corporate board and organization, it might be challenging to be sufficiently informed. Though, routines like ethical standards and accounting, should be developed in a way which can allow board decisions and some other external duties to be followed up. Directors should dedicate time in order to learn and get familiar with the organizational culture, market situation, major risks, main

products and activities of the organization, etc. They should also spare some time and opportunity to meet with the top management team on regular bases (Huse M. , 2007).

Board value creation approach which is discussed in terms of creativity and the contextual approach in which corporate boards are discussed as CASs are combined in this thesis, in order to explain how corporate boards have to be concurrently involved in innovation ambidexterity by making simultaneous decisions for exploitative innovation as well as exploratory innovation. Besides these two, some more theories are discussed in order to explain and explore the dynamics and behaviors of corporate boards. As a result, this multi-theory approach in the present thesis proposes a much better and convincing description of the various aspects of board creativity and board decision-making processes, behaviors and decisions.

2.7 Board Value Creation Through Creativity

A few recent studies such as Gabrielson and Winlund (2000), McNulty and Pettigrew (1999), Pettigrew and McNulty (1998) and Huse (1998) explore value creating board culture, and more specifically they investigate how competence, creativity and cognitive conflicts among board members may influence board behavior. The value creation perspective related to the goal and experience aspects is actually linked to the value of process-oriented board dynamics (Huse, Minichilli, & Schøning, 2005). Since this type of research is rare, there is a need for more research in this area. Consequently, the aim of the study in this thesis is to investigate directors' creativity, board's settings and climate for creativity and board's creativity and how all of these influence board's decision making behavior and its contribution to board's value creation.

In this thesis it is proposed that value creation through board member's creativity and board's creativity should be the primary function of every board member and the corporate board. That is why, it is time to explore the relationships among the settings and climate for creativity, the creativity of board members and the creativity of the board which is a decision making team, and its decisions for exploratory and exploitative innovation. It is time to prove that just like knowledge and competencies, creativity is very important for board value creation. That is why the creativity on corporate boards and the value creation of the board through creativity are explored in this thesis.

Before discussing some creativity theories in relation to the main purpose of the present thesis, it is a good idea to define creativity first. Runco and Jaeger (2012) deliberate the standard definition of creativity. According to them, this definition is bipartite which means that it has two parts. These two parts are originality and effectiveness, and creativity requires both of them. Runco and Jaeger (2012) highlight that these two criteria are essential. Originality is frequently labeled as novelty since if something is not unique or new, it is normal or ordinary. In other words, it is not original, and hence it is not creative. Shortly stated, originality is imperative for creativity, yet it is insufficient because products and ideas which are only original may not be useful.

The second part in the standard definition of creativity is also very essential because original things have to be effective so that they can be accepted as creative. Similarly, effectiveness takes various forms and labels such as usefulness or appropriateness. The standard definition that has been used in the published research on creativity is

> "Originality is vital, but must be balanced with fit and appropriateness" (Runco,M.A. , 1988, p. 4).

In studies conducted by Rubenson (1991), Sternberg and Lubart (1991), and Rubenson and Runco (1992) and (1995) effectiveness in the form of value is used in the economic research of creativity. In other words, these studies show that valuable and original ideas and products are determined by the current market, and particularly on the benefits and costs of contrarianism. The other ingrediants are board settings and climate for creativity, board member's creativity and board creativity all of which have to be harnessed in the internal "black box" of the corporate board in order to be used to handle the turbulance and complexity in the external environment.

Kozbelt, Beghetto and Runco (2010) review major contemporary theories of creativity with moderation approach in order to "understand creativity in all of its richness". According to them,

> "no one theoretical perspective is emphasized at the expense of others" (Kozbelt, Beghetto, & Runco, 2010, p. 20).

Stated differently, Kozbelt, Beghetto and Runco (2010), accept pluralism or a collection of theoretical standpoints that have diverse postulations, methods and levels of analysis so that all of these contribute to the better understanding of human creativity. Similarly, in this thesis the pluralism or the collection of theoretical perspectives with different assumptions are integrated to study the creativity of board directors and corporate boards. Reviewing creativity theories is challenging, and it is helpful to compare them because they are not similar since, they have dissimilar views because of the fruitfulness of creativity.

In its thesis, creativity encompasss a broad variety of definitions, disciplines and domains. Also, there are empirical methods and levels of analysis, and also basic and applied study types. Because of this wide collection of different perspectives, Kozbelt, Beghetto and Runco (2010) compare and contrast creativity theories in order to underline some important differences. They list ten main groupings of theories. These are Stage and Componential Process, Cognitive, Psychometric, Developmental, Problem Solving and Expertise-Based, Problem Finding, Evolutionary, Economic, Typological and Systems (Kozbelt, Beghetto, & Runco, 2010). However, only creativity theories related with the purpose of this thesis are going to be taken into consideration. These theories are The Four P's (or the Six P's) of Creativity, Cognitive Theory of Creativity and Systems Theory of Creativity.

2.7.1 The Six P's of Creativity

Runco (2004) and Rhodes (1961) write that theoretical approaches for exploring creativity can be discussed in relation to the aspects of creativity they emphasize. These aspects are "the four P's of creativity". They are process, product, person and place. Later two more p's have been added. These are persuasion (Simonton, 1990) and potential (Runco, 2003). As a result, the current versions of this framework (Runco, 2007) stretched it to six p's. For the purpose of the present dissertation each "p" is going to be discussed separately and in detail because all of them are related with the creativity of board members and corporate boards.

First of all, theories that focus on the first "p" which is the creative process should be considered. Their objective is to explain the essence of the mental processes

that occur when an individual is involved in creative activity or thinking. The creativity theories proposed by Mace and Ward (2002), Ward, Smith and Finke (1999), Simonton (1984), and Wallas (1926) are process theories which specify different stages of processing. Still other process theories developed by Mumford, Baughman, Maher, Costanza, and Supinski, (1997), Mumford, Baughman, Threlfall, Supinski and Costanza (1996) and Mumford, Mobley, Uhlman, Reiter-Palmon, and Doares (1991), explain the mechanisms of the components of creative thought.

Firstly, the stochastic processes relative or the contributions of chance, in comparison with more guided and controlled processes are some main questions in the study of the the first "p" for the process of creation. Other issues are the reliability and essence of evaluative processes during the creative process. Still other examples for key issues are the extent to which creative thinking includes identical cognitive mechanisms that are present in noncreative thinking, and the comparative roles of unconscious processes in contrast to conscious ones (Kozbelt, Beghetto, & Runco, 2010).

Secondly, the most unbiased method to studying creativity focuses on the second "p" which stands for products such as art works, musical compositions, publications, inventions etc. Considerable quantitative objectivity is possible because creative products can be counted. Besides, viewing or evaluating them is also possible since they are usually available. As a result, interrater reliability may be regulated by two more substantial benefits. Firstly, when investigating a product, little may be said about the creator's personality or the creative process leading to the creation of the product. That is why interpretations are needed to inform the creative person or process. Moreover, clearly creative products are created by creative individuals.

Therefore, studying creative products can explain the exceedingly creative people, yet they are insufficient when explaining creative potential (Runco, 1996).

The next ‘p’ for studying creativity is person or personality. It is one of the oldest perspectives that has been researched and compared different professionals like mathematicians, architects, writers etc. Also, still other groups of people have been studied by investigating their traits which can be contraindicative or indicative of creative personality or creative potential. Studies conducted by Barron (1995) and Helson (1972) explored quite a few traits that bisect different domains. Some instances fo such traits are wide interests, intrinsic motivation, openness to experience and autonomy. Also, Feist and Barron (2003) view personality as an impact on creative behavior, instead of a complete explanation.

Another “p” is “places”, or it also refers to “press” features that derive from pressures in the environment since the personality expression generally rely upon the settings where an individual resides. The study of the third “p” that stands for “places” is particularly beneficial for describing the interplays between environments and individuals. There are some accepted tendencies, and also some individual dissimilarities in terms of favored environments. Amabile (1990), and Witt and Boerkem (1989) state that creativity tends to flourish under two conditions. One is when there are chances for autonomous work and exploration, and the second one is when originality is appreciated and reinforced.

Another perspective of creativity as “persuasion” is the “p” that occurs when creative people persuade, or they alter the thinking style of others. As a result, they have to be persuasive in order to be acknowledged as creative (Simonton, 1990). Moreover, this idea of creativity as persuasion shares assumptions with other theories.

These can be listed as Csikszentmihalyi's (1988) Systems Model Theory, Amabile's (1990) Social Perspective Theory, and Kasof's (1995) Attributional Theory of Creativity.

The sixth and last "p" is the "potential" of creative people, and it can be systematized into a hierarchy which begins with theories of creative performances as opposed to creative potentials (Runco, 2008). The prior is separated into persuasion and products theories, and any other outlook which emphases the demonstration of creative behavior. The last is separated into places and creative personality, and any other outlook which values subjective processes and likelihoods. This hierarchical framework takes the former repetitive structure, yet it also permits examination of everyday creativity as well as the creative potentials of people who might possess the most of what it takes. However, these entail educational chances or other forms of support before these people may display creativity (Kozbelt, Beghetto, & Runco, 2010).

2.7.2 Board Settings and Climate for Creativity

The boardroom represents the settings and climate of a corporate board. In other words, it is the "p" for "places" or "press". As discussed above, the enquiry on "press" or "place" is particularly beneficial for defining the interractions between board members and board environment. Consequently, the settings and climate on the corporate board are essential for creativity. They should support creativity because creativity tends to emerge under the two conditions proposed by Amabile (1990), and Witt and Boerkem (1989) as they have been already stated above. These same

conditions are also essential for corporate boards. The availability of opportunities for exploration and independent work form the first condition, and it is a condition that is so common for the corporate board since board members are very independent and autonomous. The second one is when originality is supported and valued on corporate boards. For the purpose of this thesis, boards are examined in terms of board's settings and climate for creativity.

2.7.3 Cognitive Theories of Creativity

There are these two assumptions that cognition is the basis for creative achievements or performances, and creative people possess some superior cognitive abilities. Suppositions like these might not be correct, yet there are some signs that some cognitive differences can be determining factors in creativity. Two of the above discussed six "p's" that are "process" and "person" are critical for the Cognitive Theories of creativity. The first "p" that stands for "process" describes the creative process or the cognitive mechanisms which are the basis for creative thought. The second "p" that stands for creative "person" actually explains the individual differences in these cognitive mechanisms (Kozbelt, Beghetto, & Runco, 2010). Consequently, for the purpose of the present thesis, creativity in corporate governance is explained by studying board's creativity with its relation to cognitive mechanisms such as decisions for exploitative and exploratory innovation, and secondly by exploring the creativity of board members.

There is a great variety in the Cognitive Theories of Creativity. Some of them concentrate on universal abilities such as memory or attention. Some other theories put emphasis on individual differences that are indexed by tasks related to divergent

thinking. Still some other theories concentrate on conscious operations such as tactics, yet other theories indicate implicit, preconscious or unintended processes. There are also other theories which state that creativity is a sort of problem solving. Besides, there are other creativity theories which include cognitive processes like problem finding which is relatively independent from problem solving (Kozbelt, Beghetto, & Runco, 2010). However, none of these directly explains the way creativity is explored in the study of this thesis.

Another Cognitive Theory explains that creative insights may arise from associative processes. Ideas follow one after another like a chain, and at the end remote associates have the tendency to be original (Mednick S. A., 1962). There are many causes for forming associations among ideas. For example, one reason is that ideas can be functionally related. Obviously, some people are inclined to move swiftly from apparent associates to remote ones.

According to this lookout, more creative people have the tendency to possess flatter hierarchies of associations in contrast to less creative people. Stated differently, more creative people possess a much greater number of comparatively robust associates for a specified concept, instead of only a very small number that is believed to make available a larger scope for the real-time initiation of widespread depictions (Kozbelt, Beghetto, & Runco, 2010).

Another Cognitive Theory which counts on the idea as the cognition unit is Guilford's (1968) model, that in the beginning included 80 unalike types of cognition. Far along, Guilford categorized 120 unalike types of cognition. Only just before his death, Guilford propositioned 180 "cells" or different types of cognition in his model (Guilford, 1980) despite the fact that his statistical methods were debatable.

Nonetheless, it is Guilford's division of convergent and divergent thinking which is often preffered in the researches about creative cognition.

In studies conducted by Torrance (1995) and Mednick (1962), it is stated that divergent thinking happens when associations and ideas progress in wide-ranging routes, so new and original ideas may be discovered. Conversely, convergent thinking arises when cognition is applied to find out only one accurate or traditional answer. As Cropley (2006) writes both convergenet and divergent thinking are applied for creative endeavors because this consent to the production of ideas which are not only innovative but also adequate.

Cognitive research may control what happens earlier than creative ideas are considered. The analysis unit is an auspicious research line, and concepts may be regarded as flexible cognitive structures. Studies conducted by Estes and Ward (2002), Ward, Smith, and Finke (1999), Sternberg and Lubart (1995), and Mobley, Doares and Mumford (1992) suggest that merging two dissimilar information sets together or the so-called conceptual combination is frequently comprised in creative problem solving and ideation. Actually, Estes and Ward (2002) explain how insights and emergent features develop, and how original insights are more possible to arise when two dissimilar characteristics are combined. Besides, they describe how relationships between these notions can be understood merely at an extreme abstraction level.

This thinking type is labeled as metaphoric logical which in combination with conceptual thinking results in creative alternatives. Another contemporary view of creativity is the "creative cognition approach" tradition. Studies like Ward et al., (1999), and Finke et al., (1992) highlight concepts taken from cognitive psychology.

These ideas are creative imaginings and metaphors, and theoretical blend and growth, and they are helpful for comprehending how people produce ideas and discover their implementations in design tasks and lab-based invention. Creating ideas and discovering their implementations are two basic regimes of thought, and they are common in the above stated processes.

Metacognitive processes, which are entirely under conscious control, are often related to creative thinking. One example for metacognitive process is tactical thinking that can be explained as recommending many tactics for growing the likelihood of creative problem solving. These can be listed as “thinking backwards”, “questioning assumptions”, “shifting perspective”, “turning the situation upside down” and “putting the problem aside”. As Davis (1999) writes tactical thinking processes are beneficial for assisting the process of creative problem solving exactly due to the fact that they are an action of conscious decisions, and they may be implemented when the necessity ascends.

2.7.4 Board Member Creativity

In order to explain the creativity of board members, the “p” which stands for person or personality should be considered. Board members are a team of professionals, and they posses some features which will be indicative or contraindicative of creative personality or potential. According to the above discussed Cognitive Theories of Creativity, creativity is related with some cognitive mechanisms. These are further researched and debated as domain-specific and domain-general (An & Runco, 2016).

There are two opposing interpretations of creativity. The first interprepation is the presence of a talent or general creative capacity, and the second one is the presence of domain-specific creativity. Plucker (1998) supports the domain-general side of the debate. He states that there is a propensity to researching creativity with a generality assumption by giving the examples of Torrance (1974) and Guilford (1967). Measures such as activity check lists of creativity and creative performance within specific domains indicate significant intercorrelations, and this is the main evidence for the position that the essence of creativity is general. Similarly, Runco's (1987) and Hocevar's (1976) studies back the hypothesis that creativity is domain-general but not domain-specific.

One critical distinctness between the domain-specific and domain-general views of creativity is actually the contributions of personality and knowledge. Firstly, theories of domain-specific creativity underline domain-specific knowledge, and some studies such as Weisberg (2006) and Vincent, Decker and Mumford (2002) support these ideas. Secondly, research conducted by An, Song and Carr (2016) and Amabile (1990) found that domain-specific knowledge affects domain-specific creative performances. Thirdly, Feist (1999) and (1998) report that domain-specific creativity is linked to personality, and different domains have different profiles of contributing traits.

For the purpose of this thesis, a board member's domain-general creative performance associated with personality, motivation and knowledge (An & Runco, 2016) is studied. The domain-general creative performance of a board member at work or on the corporate board is assessed.

2.7.5 Systems Theories of Creativity

Systems theories of creativity are some of the most striving and comprehensive theories of creativity. They conceptualize creativity as evolving from an intricate system with interrelating subcomponents, but not as a solitary entity. In other words, accurate and worthwhile comprehending of creativity is possible only when all of these interacting subcomponents are taken into consideration. Contrary to the theories discussed above, the Systems Theories of Creativity has a very wide and rather qualitative contextual standpoint. Several such theories have been proposed. One common element among almost all of them is that they study each "p". However, one important difference is that each theory stresses different "p", contingent to the creative importance level.

The first important Systems Theory of Creativity is Gruber's (1981) and Gruber and Wallace (1999) who found the evolving systems approach to studying creativity. This approach is largely implemented to comprehending the unique features of a creative individual. Some examples of studies using this approach are Darwin's detailed archival case in Gruber (1981) and others such as Wallace and Gruber (1989) and Gruber (1996). For instance, Gruber and Wallace (1999) state that the evolving systems approach is mainly the justification of creators' deeds.

This approach highlights the processes that are dynamic and developmental, and they play out in complex contexts and ways over different time periods. Gruber (1978) introduces several foundational concepts so as to offer a framework for grasping creative people in the middle of such complexity. For instance, great creators most probably use a group of metaphors in their thinking, that portray a progress resulting in creative meaning making. They do not rely solely on one dominant

metaphor. Many researchers have this assumption while trying to explain these subjects.

A network of enterprises is another main idea. It is a system of goals which designates how a renowned creator can work on apparently dissimilar issues or projects, successively or concomitantly, and ceaselessly advance a sense of the connections between them. As Weisberg (1999) writes, the analysis level of an enterprise is more wide-ranging than that of solo projects. This kind of analysis puts an excessive deal of explanatory pressure on scholars who use the evolving systems approach. Mostly, when they absorb the characteristics and elements of a big quantity of material and reflect on prejudiced conclusions about a creator's whole career that perhaps does not depict the creator's thinking style at any assumed point during his or her career. Nonetheless, if used carefully, the evolving systems approach possess the possibilities to notify the vast portrait of a creator, and also it can inform it in an active manner with a qualitative fruitfulness and thoroughness which is supreme compared to other academic methods.

Csikszentmihalyi (1994) and (1988) develops a different Systems Theory of Creativity which has influenced many academics such as Sawyer (2006), Simonton (2004) and Gardner (1993). Csikszentmihalyi's theory or model is in a smaller amount focused on the creative individual than on the evolving systems approach. Similarly, his model encompasses multiple aspects. However, it requires a more comprehensive outlook of the creativity phenomenon than Gruber's model. In comparison to any other creativity theory, Csikszentmihalyi's systems model stresses the omnipresent role of the "p" which stands for "place". His theory expends the

nature of the “p” that stands for the creative “person” by studying how people other than the creator or the creative person back the surfacing of creativity.

By reframing the fundamental questions of “What is creativity?” to “Where is creativity?”, Csikszentmihalyi (1988) forms his Systems Theory of Creativity. Instead of regarding creativity as an inherent feature of certain items, Csikszentmihalyi states that creativity emerges by means of three interrelating constituents. The first constituent is the domain of knowledge which exists in a given discipline at a given time. The next constituent is the individual who obtains domain knowledge and constructs variations on the present knowledge. The last constituent is the field. It is comprised of other experts of the discipline. They choose which novelties generated by all experts in that particular discipline are worth conserving for the next generation. Everyone of these experts has an opinion about what is evaluated as creative.

Csikszentmihalyi’s Systems Theory of Creativity has countless benefits, especially in its conceptual richness. However, it also has some probable restraints. Firstly, his theory recognizes the huge significance of extra personal or sociocultural factors in creativity. According to Csikszentmihalyi (1994), his theory may be used to making specific hypotheses about how the field and a person or his personal background, culture and society in general affect creativity. In principle, this type of questions is responsive to empirical research, but the qualitative nature of several parts of this model can make it more difficult to assess hypotheses unmistakably.

Furthermore, Csikszentmihalyi’s model aspiringly streches over numerous analysis levels. This may cause issues in multidisciplinary crosstalk, mainly as his model is less based in methodological details than the approach developed by Gruber

(1981). Nevertheless, this appears to be an essential risk. For the complete comprehending of creativity, many more levels and variables of analysis have to be taken into account together with the empirical and quantitative approach to studying personal traits, that results in a narrow understanding of creativity (Csikszentmihalyi, 1994). That is why, creativity in this thesis is explored in two levels and three variables. The two levels are the individual board member's creativity and team level which is the board's creativity. The three varialbles are the settings and climate for creativity, board member creativity and board creativity.

2.7.6 Board Creativity

Aspects of team dynamics are cognitive perspectives and dimensions of the boardroom culture. The core concepts that Huse (2007) discusses are cognitive conflicts and diversity, criticality and independence, creativity, cohesiveness and commitment. From all of these cognition, diversity and creativity are considered in detail in this thesis because they are related with the objectives of the study of boards as decision making groups which use their creativity to make decisions for innovation ambidexterity.

Boards are presented as strategic decision-making groups by Forbes and Milliken (1999). These two academics draw on small-group decision-making literature, and they discuss criteria that may distinguish effective boards from ineffective ones. Boards can be seen as

> "large, elite and episodic decision-making groups that face complex tasks pertaining to strategic processes" (Forbes & Milliken, 1999, p. 492).

Forbes and Milliken (1999) claim that the result which corporate boards generate is absolutely cognitive since they are not involved in execution. Likewise, this perspective is also taken into account in this study and added to the academic literature by stating that boards output should be creative because only creative decisions for innovation ambidexterity in the turbulent and complex external environment can be useful for value creation.

Forbes and Milliken (1999) also state that boards of directors are notably defenseless to process losses. Process losses are the interaction challenges which avert groups or boards from attaining their full potential. Therefore, board effectiveness is densely reliant on socio-psychological processes, and specifically those referring to group interaction and participation, impotant discussions and information exchange. Similarly, in this PhD theis, the socio-psychological processes on corporate boards are examined by testing director's or board member's creativity from the psychological perspective, and also by testing the board's creativity from the socilogical perspective.

A team is more than the sum of its members, and understanding effective boardroom dynamics involves looking into the decision-making culture among the different board members. Lessons from psychology may be useful for comprehending the corporate board as a team. The board of directors can be unlike other teams or small decision-making groups. Investigating the dissimilarity of boards to other small decision-making groups is a major challenge in corporate governance research. By discussing concepts such as the usage of knowledge and skills, cohesiveness, cognitive conflicts and effort norms, Forbes and Milliken (1999) summarize innumerable facets of board decision-making culture.

Commitment, care, criticality, consensus and creativity are the other concepts used to illustrate the decision-making culture of corporate boards. Some of the concepts most widely used are criticality, creativity, cognitive conflicts, cohesion and commitment. However, only creativity has not been researched seperately yet, so it is time to research the role of creativity in the decision making of boards, so this study explores creativity from three different perspectives as three constructs that are the creativity of the board member, the creativity of the board, and settings and climate for creativity on the board.

Forbes and Milliken (1999) introduce a model of board processes. Effort norms, cohesiveness, the use of knowledge and skills, cognitive conflicts and cohensiveness are chief components in their model. These components denote to board processes which represent different facets of the board decision-making culture, and they mediate the connections between board level results, board demography and structures, and they also have an influence on board effectiveness.

In “value-creating board” surveys, Huse and his colleagues used various operationalizations suggested in the existing board literature to measure the boardroom culture and investigated various underlying concepts and the relationships between them. The various measures could be sorted under headings such as critical attitudes and independence, creativity, preparations and involvement, openness and generosity and cognitive conflicts. Creativity is related to critical attitudes, and creativity is also related to openness and generosity (Huse M. , 2007). As a result, in this thesis board creativity and oppenness and generosity are combined as a single construct to explore board creativity.

Measured at the team level, the team process variables are more powerfully correlated to creativity and innovation in contrast to the processes measured at the individual level. West (2002) argues that teams which are better managed by social comparison processes that make a comparison standard and feedback on individual or team performance available, team members are inspired to perform at higher creativity levels. Besides, as Beer and Eisenstat (2000) conclude team communication, conflict resolution and team cooperation are vital in teams which have innovation expectations.

Therefore, a teamwork design is critical for distributing specialized knowledge throughout the organization. The cross-fertilization of standpoints may yield creativity, and innovation is more prospective to ensue when there is too much interaction among team members. That is why today teamwork on every level and evenmore on corporate board level is so much emphasized because the interactions among directors can result in cross-fertilization of views that can form the collective creativity on corporate boards that is very essential for creative decision making.

Creativity in the boardroom has two main aspects. The first one is that the creativity and curiosity of the individual board members are stimulated and used. The second aspect is that creative processes exist in the boardroom. Creative processes go beyond the creativity of each individual director. Creativity in the boardroom is about how creativity is stimulated and takes place in the interactions among directors, and among the directors and management. Directors present issues or solutions that by themselves might not be creative, but they can be an input for the thinking, imagination and comprehension of others so as to activate creativity (Huse M. , 2007).

There may be processes in the boardroom that result in creative offers and solutions to many problems. A creative boardroom culture will generally require aspects of openness and generosity, cognitive conflicts, diversity and questioning. Curiosity and creativity may be best mirrored when individuals with diverse perceptions and qualifications are all at once in a location where they enthusiastically help each other without the scare of damaging their own prominence or the results of what they are undertaking or expressing. Creativity is even further supported when this culture also encourages critical and independent questioning. Creativity may be a result of impulsive decision-making, but impulsiveness and speed may be the opposite of creative processes and process orientation (Huse M. , 2007).

Openness and generosity are concerned with the usage of skills and knowledge. Both of them are helpful for answering the question of how directors can recognize and accept that they might be incorrect in their considerations, and how they eagerly advise by using their private ideas, knowledge and outlooks. Furthermore, openness and generosity relate to how board members liberally and honestly communicate individual concerns and desires. Due to the fact that openness and generosity are also about the usage of knowledge and skills, it is of little value to appoint such knowledgeable and skilled directors if they do not use them. Generosity and openness are vital for applying directors' skills and knowledge. On the one hand, openness and generosity are echoed in the fact that directors know and use one another's competence (Huse M. , 2007).

Huse, Minichilli and Schøning (2005) state that creativity is stimulated through the variety in the personalities of the board members and various task related conflicts. They also observed the variation in contributions among the board members. Based on the similar perspective, board's creativity is stimulated by

member's creativity, and the study in this PhD thesis explores how the creativity of directors relates to the creativity of the whole board. Actually, identifying the existance of a relationship between board member's creativity and board's creativity is studied in this thesis.

2.8 Innovation Ambidexterity

2.8.1 Innovation

Innovation can only be achieved by the steering role of the corporate board. In other words, all board members have to know that formulating strategies for innovation is essential for the survival and success of their organization. That is why they have to engage in decision-making processes that are fruitful for long-term product, process, organization and market innovation. In other words, the board of directors have to make decisions and formulate strategies as a team by building mutual trust among all board members.

Internal innovation is defined as an organization's commitment to creating and introducing new organizational systems, goods and production processes (Zahra, Neubaum, & Huse, 2000). Innovation is an important outcome of organizational processes, and is one aspect of internal value creation in an organization. It is critical for organizational performance. Various studies have explored how innovation relates to corporate financial performance. Researchers have also tried to look into how corporate boards or boards of directors may impact innovation. However, innovation often requires investors and owners to adopt a long-term and patient approach. The implementation of innovation may be very complex, and innovation will therefore be very dependent on managerial involvement.

The highest degree of corporate board contribution to internal innovation is thus expected to be through its strategy involvement. In a study of medium-sized US companies, Zahra, Neubaum and Huse (2000) look at the impact of corporate governance on five types of corporate innovation. These are product innovation, process innovation, organizational innovation, domestic market venturing and foreign market venturing. They find some correlations between the types of innovation and the "usual suspects". They find an inverse U-formed relationship between the each of the types of innovation and the number of board directors. Neither large nor small boards are positively related to innovation. The outsider ratio is negatively related to all types of innovation. They also find that there are significant relationships between corporate innovation and board strategy involvement. Besides, board-management collaboration seems to influence corporate innovation. There are strong positive correlations between innovation and the board's strategy involvement (Huse M. , 2007). Consequently, this strong positive relationship is investigated in more detail here by exploring board's strategic decisions for innovation ambidexterity.

The mainstream innovation research like Tilebein (2006), and Brown and Eisenhardt (1997) is disapproved because of its linear or sequential paradigms for comprehending innovation dynamics because it does not take into account the uncertain, complex and dynamic nature of innovation. One theory that overtly integrates time dimension in its theoretic paradigm is the previously discussed CAS Theory which would enhance the mainstream innovation research in studying nonlinear and dynamic actions (Steyaert, 2007). Consequently, in this thesis the CAS Theory is considered as the theoretical framework for explaining the dynamic action of board strategic decision making for innovation in today's turbulent and complex environment.

In order to clarify the patterns under which an organization goes through the transformative change, Lichtenstein (2000) proposes a self-organization model. According to his model, there are typically three stages in the transformative changes of an organization. In the first stage, the organization undertakes two kinds of increase which are an increase of organizing and accumulative increase of resources. This resource expansion in the first stage is inhibited by organization's early configuration up until the strain between expected performance and the real one upsurges above a threshold which marks the second stage in Lichtenstein's self-organizing model. In the third stage, a new organizational configuration appears, or another result will be an organizational failure. The described process of self-organization is the archetypal reply of a CAS which encounteres transformative changes (Lichtenstein, 2000).

As Prigogine and Stengers (1984) write the drastic shift from one system position to a basically different one leads to system instability and nonequilibrium where innovation generates and begins. Accorging to Goldstein, Hazy and Lichtenstein (2010), this system's nonequilibrium triggers innovation and makes it probable, and they also explain this shift or transition as converting from one attractor to alternative attractor regime. Correspondingly, Eoyang (2009) argues that human dynamic systems vigorously advance from one attractor to a different one, and as discussed in this thesis corporate boards are also human dynamic systems or Complex Adaptive Systems (CASs) that have to go from one atractor to another.

According to Cheng and Van de Ven (1996), attractor's type amends at different time periods. This alteration between the two different kinds of attractors ensues when a serious threshold is reached, and it is also detected as a recombination of existing social constituents. In other words, attractors regulate and coerce the pattern within a CAS, so innovation patterns are formed by diverse attractors. For the

purpose of the present study, when discussing the corporate board as CAS, and explaining its adaptive ability as self-organization, the following can be stated. On boards, directors have to be innovation agents who should behave beyond the regime of one attractor such as opportunity-seeking behavior for innovation to another atractor like advantage-seeking behavior for innovation.

CASs continually try to become accustomed to the environmental conditions where they find themselves. Hence, they possess the capability to take on short-term exploitation actions when needed, and also, they can invest in longer-term exploration when required. From the CAS perspective the corporate board being a CAS should also do the same. These actions are determined by the states in which a CAS finds itself, so it replies in a self-organizing response. In other words, a CAS just self-organizes fittingly because it does not distinguish the long and short terms. A CAS participates in several different kinds of actions. From the organizationl perspective, the lesson here is that organizations should not take very stiff stance in approaching innovation, yet they should respond flexibly as external as well as internal environments demand. That is why, it has to be proposed that the exploitative and exploratory approaches to innovation are essential for the corpoarate board.

Barnett and Hansen (1996) write that competitive advantages in organizations are sustainable in turbulent environments under one condition or when adaptive rates rise. For instance, sustaining short-term performance means increasing the speed of incremental change. Another example is that safeguarding long-term survival means synchronized radical innovation. That is why, organizations must keep internal variance in its departments and units, with some of them concentrating on quicker incremental innovation, and others focusing on more radical one. Similarly, for the purpose of this thesis, the most important organizational unit namely the corporate

board should be able to engage in some decisions for incremental changes in the form of exploitative innovation and some other decisions for more radical or exploratory innovation.

According to Woodman (1995) and Amabile (1988), the well-known research on innovation and creativity proposes that hierarchical controls, bureaucratic regulations and rigid procedures hinder creativity and open communications. In contrast, when internal environments are very unsystematic and unstable, they risk breakdown. That is why, management cultures and processes are required to empower organizations to function within the nascent complexity zone. The meaning of this is emulating a Complex Adaptive System (CAS) by continuously learning from experiences, adjusting to this learning and to external and internal environmental changes.

This requires receptive and flexible frameworks and advantage-seeking and opportunity-seeking processes which in the presnt PhD thesis are studied as exploratory innovation and explitative innovation. Eckval (1996) states that evidence indicates incremental innovation as more probable to arise when organizational control mechanisms move to the rigid end direction of bureaucratic conditions, and on the contrary, radical innovation is more prospective to happen in slacker and less firmly controlled states.

Stacey (1995) explains that some complex organizations which prioritize innovation would function close to “the edge of stability”. Consequently, some of these would be efficacious in evolving significant strategic results by incremental means, yet some other would be ineffective and diminished by competitive selection. Stated differently, some organizations which function close to inconstancy and chaos might fail due to unbalanced decomposing forces, and others might thrive in radical

innovation by operating on the edge of extremes or dancing at “the edge of chaos”. That is why in this thesis it is discussed that corporate boards are responsible for making decisions that balance their organizations to be at “the edge of stability” and at “the edge of chaos”.

What about corporate boards? How should they operate in making effective and creative decisions and formulating strategies for innovation? The answer is that board members should be able to balance the opportunity-seeking and advantage-seeking activities for exploratory and exploitative innovation. Kauffman (1995) proposes an organizational metaphor that is patchwork quilts, made up of linked patches, when he explains the complexity zone and its states offering “order for free”. These quilt patches have to act egotistically in relation to each another, yet they also should be able to communicate and interact. For example, problem solutions practical for a patch can affect the problems met by others. As a result, in this patchwork system, the patches or its parts will progress together within the environment where they function.

Board members are not quilt patches, but they are like “patch makers”. When this framework is applied for the purpose of the present study, boards in which self-organization is a natural fenomenon, they are expected to consist of “patch makers” who should act between stability and chaos, especially in the modern business environment characterized with change, uncertainty, complexity and turbulance. For instance, in “the edge of chaos” rule controls are kept at the lowest level, and agents in this case board members are autonomous, so they have the widest scope to self-organize into “cells” and to network. Though, when accomplishment in incremental innovation is imperative if not more imperative than radical innovation, directors’ freedom may be a restraining factor. Szulanski and Amin (2001) write that in human

organizations excessive freedom can be challenging because it may cause countless ideas, a sense of chaos, and even this might result in an organization which loses touch with reality.

2.8.2 Ambidexterity

Ambidexterity is a term that is used to describe a human skill. It literally describes an individual's ability of using right and left hand equally well. Recently ambidexterity has been used in organizational research to describe the capability of an organization to deal with two different things at once and to reach equilibrium by assessing and balancing two unalike behaviors (Li & Gao, 2017). Scholars, namely Gupta, Smith and Shalley (2006), O'Reilly and Tushman (2004), and Benner and Tushman (2003) write that ambidexterity denotes organizational ability to be good at exploring new proficiencies and exploiting prevailing competences simultaneously. Patel, Messersmith and Lepak (2013) emphasize that despite the fact that the concept of "ambidextrous organization" is not novel, its significance has been remarked across many academic arenas such as organizational theory, strategic and innovation management, organizational behavior and organizational learning and adaptation.

According to Duncan (1976), associated studiess advise multiple paths to ambidexterity because organizational ambidexterity implies organizations' capacity to manage the tensions of exploitation and exploration. March (1991) writes that over-stress on exploration will lessen an organization's capability to augment its standing capability, possibly even disrupting its success architype. According to Siggelkow and Levinthal (2003), the research designates that both exploitation and exploration must function alternately. Raisch and Birkinshaw (2008) state that organizations have

turned to use ambidexterity as their strategy, that is, they have combined and integrated exploration and exploitation in a well-adjusted style so as to handle the twofold challenges in a worldwide market and these strategic dilemmas.

Actually, exploitative and explorative actions demand changed mentality. For explorative actions are allied not only to a reduced amount of certainties and higher risk failure, but also with the probability for higher success. That is why, the administration of these actions' prerequisites more freedom for the individual and less-structured processes, and subsequently a more open organizational culture. On one hand, exploitation is about growing productivity, certainty and variance reduction, efficiency and control, or it is actually organizations becoming more efficient in what they already know. On the other hand, exploration is about increasing variation, search, autonomy, discovery and innovation, or it is more detached in time, more ambiguous, and it occasionally embodies a threat to prevailing organizational units. Shortly,

> "Ambidexterity is about doing both" (O'Reilly & Tushman, 2007, p. 10).

Astoundingly diminutive attention both theoretically and empirically has been given to individual ambidexterity. Some first efforts to theorize and operationalize individual ambidexterity have occured very lately. Mom, Van Den Bosch and Volberda (2007) hypothesize and study ambidextrous behavior of individual managers. They define managers' explorative behavior as

> "searching for, discovering, creating and experimenting with new opportunities" (Mom, Van Den Bosch, & Volberda, 2007, p. 910).

Besides, they define managers' exploitative behavior as

> "selecting, implementing, improving and refining existing certainties" (Mom, Van Den Bosch, & Volberda, 2007, p. 910).

When idividuals engage in exploring, they stray from customs, test something novel, and they do not count on conventional knowledge. On the contrary, exploitation involves relying on preceding experience, activating things and incrementally cultivating well-learned acts. Stated differently, exploitation encompasses doing things in the same manner as they have at all times been done and banking on standing rules and routines. At heart, exploration indicates that individuals rise the changeability of their act repertoire, whereas exploitation denotes behaviors which reduse the individual actions variability (Rosing, Frese, & Bausch, 2011). Mom, Van Den Bosch and Volberda (2009) posit individual ambidexterity as the amalgamation of individual exploitation and exploration.

According to He and Wong (2004), and Benner and Tushman (2002) the theory supporters believe that exploitation and exploration are indivisible from learning and innovation, and they also claim that both of them are categorized by learning processes each one of a different nature. Later, Tushman and O'Reilly (2007) conclude that ambidexterity is a specific competence embodied in top leadership's learning, and ambidexterity is expressed through their capability to reconstruct the prevailing organizational competencies and assets in a reputable technique so as to adjust to fluctuating conditions.

These two scholars give some advice on successful ambidextrous organization by stating that senior management should be cognizant that the ambidextrous organizational model is essential for organizational survival, and consequently they should have a clear strategic intent to implement it. Shortly stated, the senior team

have to be lined up and pliable to bring about ambidexterity (O'Reilly & Tushman, 2007), and the senior team in the case of the present thesis is the corporate board, so board members should have the clear strategic intent to ensure organizational ambidexterity by making decisions for exploitative and exploratory innovation.

Good and Michel (2013) apprehend individual ambidexterity as a cognitive concept which embraces divergent thinking that is exploration, focused attention that is exploitation, and cognitive flexibility that is swapping between exploration and exploitation. Building on O'Reilly's and Tushman's (2007) emphasis on top management's necessity to use ambidexterious skills, and Good's and Michel's (2013) ideas for cognitive ambidexterity, in this thesis it is argued that the board of directors with their ambidexterious thinking skills and decisions for innovation ambidexterity play a vital role in the temporary innovation for financial profitability and the lasting innovation for business sustainability.

2.9 Board Decision Making

Under the general heading of the evolving behavioral standpoints on corporate boards and governance made by Erakovic and Goel (2008), Useem (2003), Huse (2003) and (2005), Rindova (1999), and McNulty and Pettigrew (1999) the purpose of this thesis is to explore the internal dynamics of corporate boards and board members' or directors' decision making. As it has been already emphasized above, boards' strategic role is of principal importance for the present study. Boards' strategic role is actually related with strategic decision making, and it can only be realized with the help of some board processes that occur on corporate boards. Shortly, board processes

that are closely related with creativity and decision making are central for this thesis. Moreover, some constructs are also critically important for decision making.

For the purpose of this thesis, board decision making processes are discussed from socio-psychological or socio-cognive perspective. Walsh (1995) writes that the socio-cognitive outlook on organizational decision making recommends that people tackle complex decision-making tasks by counting on some "knowledge structures" or schema which they develop about their environment. According to Ocasio (1997), people lean towards following a theory-driven or top-down method for decision making when complete information is absent or when there is some uncertainty concerning the relevance of different bits of information, instead of following a data-driven or bottom-up method which is grounded on extant information. Lorsch and MacIver (1989) state that given the intense information complexity which directors face when they appraise strategic decisions, they profoundly trust the implicit theories they have developed concerning competitive environment and corporate strategy.

The human interactions between many internal and external actors on corporate boards, are central in understanding the human side of corporate governance, or stated differently in understanding boards of directors as Huse (2007) underlines. A behavioral theory will focus on strategizing more than on objective alignments. It will result in decisions taking place through satisficing and problematic search rather than through rational decision-making. Then, it will allow boards to create value through deploying knowledge instead of controling managerial behavior, and finally it will focus on norms and learning processes instead of structures and outcome (Huse M. , 2007).

The Behavioral Theory has been established as the key viewpoint for understanding organizational decision-making. In parallel to the necessities for better capturing of behavioral dynamics and processes in the boardroom and around it, research has gradually emphasized the requirement to use some theoretical notions from the Behavioral Theory, so Huse (2007) discusses the four core concepts from this theory. These are bounded rationality (Osterloh, Frey, & Frost , 2001), satisficing behavior (Hendry J. , 2005) organizational routines (Zahra & Filatotchev, 2004), and bargaining between coalitions of actors (Huse & Rindova , 2001).

Bounded rationality and satisficing behavior are considered as very important in this thesis due to the creativity and decision making of corporate boards. The current corporate governance and board of directors research has discussed the topic of bounded rationality, which denotes the definite complexity of decision-making in organizations as stated by Cyert and March (1963), March and Simon (1958), and Simon (1955). Later, Hendry (2005) writes that in reality agents do not attempt to maximize utility since they are not capable to do so because of their bounded rationality. The business environment is complex and turbulent, and results in individuals being unable to grasp all the links among the many variables around them. Accordingly, the bounded rationality emphasizes the fact that organizational actors and in this study the board members cannot completely comprehend the world they live in, and even more so today in the 21st Century which is a century of cumulative turbulance and complexity.

Specifically, this has two consequences. First of all, decisions cannot be viewed as optimum solutions to problems. All they can do is mirroring solutions in order to satisfy particular levels of aspiration (Levinthal & March, 1993). Social

environment and history are the two determining factors for these aspiration levels. The social environment aspiration level is determined by referencing significant reference groups, whereas the historical aspiration level is determined as the function of an organization's past performance.

Secondly, and in contrast to the general economic theorizing that stresses the rational act of individuals when information is asymmetric and incomplete (Eisenhardt, 1989), the behavioral approach explains ineffective and inefficient decision-making by focusing on subjective factors like incompetence and cognitive biases (Foss, 2001). Organizational actors' cognitive bias permits barely flawed aligning of the decision-making setting and discerning, restricted and imprecise information processing.

Seen from this standpoint, it may well be that organizational actors' partial competence and incomplete knowledge represent the possible causes of organizational inefficiencies and failures than straight forward opportunism, which presumes that actors are aware of the obtainable opportunities. "Truly bounded rationality" is the term for the above described bounded rationality (Radner, 1996).

"Satisficing" is a well discussed topic in current boards and governance research (Hendry J. , 2005). It refers to individuals' inclination to accept options which are "good enough" based on their most recent and critical needs, instead of searching for optimum solutions. This satisficing behavior rests on "problemistic search" which is the decision-makers' concerns about instantaneous problems and short-term solutions (Cyert & March, 1963). Problems are recognized when organizations fail to satisfy their present and near future self-imposed goals. This problem recognition behavior is chiefly compelled by selection biases and attention

allocation. When decision makers come across a problem, they use basic heuristics or rules in their search for solutions.

A problem is viewed as solved when an alternate which satisfies existing goals is found, or it is considered as solved when goals are revised to a level which makes accessible solutions adequate. A satisficing behavior possibly lessen the benefits from behaving opportunistically in comparison to an optimizing behavior. In the Behavioral Theory, decision-making is thereupon regarded as an experiential learning process, whereby organizations gradually adapt to their altering surroundings through experimentation and learning. Trail and error is the learning style of decision-makers, and they adjust their aims, search and attention rules appropriately (Huse M. , 2007). That is why, board members have to possess some cognitive ambidexterity for making decisions for exploitative innovation and making decisions for exploratory innovation. Consequently, these are tesed in the present study.

A third concept that has come to prominence as a result of current research is that directors act on the basis of "routines" which are built up over a period of time (Ocasio, 1999). Routines may be grasped as the organizational codified memory that includes the values, beliefs, capabilities, knowledge and past experience of the organization and its decision-makers (Cyert & March, 1963). Routines mainly entail learning by doing or experiential knowledge that is tacit and difficult to codify. Besides, routines are sources of steadiness and control, both of which empower and inhibit organizational functioning. Routines conserve directors' cognitive abilities and restrict possible conflicts among directors. They also direct the attention of board members to designated facets of identified problem situations. In consequence, routines and rules are not only passive factors in board behavior, but also they serve

as historically and socially constructed programs of action which direct board members' attention to specific aspects of a problematic situation (Huse M. , 2007).

Organizational problems are dealt by applying norms, memorized routines and problem solving heuristics and so as to diminish the decision-making complexity by boundedly rational decision-makers. In order to analyze corporate governance and boards, some distinctions between board's roles in organizational decision-making and the internal decision-making processes that take place within the board should be made. The behavioral perspective on corporate boards and governance underlines issues like the focus on interactions and decision-making, the problemistic search by board members, the analysis of strategizing on and out of the board, and the value creation through knowledge (Huse M. , 2007).

There are some updates of studies which are beyond boards' control or monitoring involvement (Pugliese, et al., 2009). Besides, there is a review of board of directors' participation in strategic decision-making processes (Judge & Talaulicar, 2017). In addition, there is another aticle in which 150 articles published in 23 management journals are analyzed (Pugliese, et al., 2009). All these 150 articles date from three time periods. The frist period is between 1972 and 1989, the second one is between 1990 and 2000 and the last period is between 2001 and 2007. This indicates how research about boards and strategy progressed over time from structural and normative approaches to behavioral and cognitive ones (Huse M. , 2018), and the behavioral and cognitive is important for this thesis because creativity and board's decisions for innovation ambidexterity are examined.

A trend towards more pluralism in the research of board strategy had been found. For example, in the period between 2001 and 2007, empirical papers had

gained some significance. Also, the widely common Agency Theory had been challenged by alternative theories. European and Asian samples had become important, and finally the sources of information had varied in the period between 2001 and 2007 (Huse M. , 2018). This thesis is the continuation of this trend since the research is empirical, many alternative theories are used here, and data from a sample from Turkey is analyzed in order to study board strategies for innovation.

2.9.1 Garbage Can Theory

In their seminal article, Cohen, March and Olsen (1972) propose the so-called Garbage Can Theory. According to them, a decision-making theory must be concerned with a comperatively complex interaction among making problems, employing personnel, generating solutions production and opportunities for choice. Based on these basic ideas, they developed the Garbage Can Model which consists of four basic variable of streams that are a stream of problems, a stream of energy from participants, a stream of choices and a rate of flow of solutions (Cohen, March, & Olsen, 1972). For the purpose of this PhD thesis, the Garbge Can Theory is used in order to better describe and explain boards and their decisions for innovation ambidexterity. More specifically, the Garbage Can Model is applied into the corporate board context in order to closely explain board's ambidexterious decision making processes.

In the Garbage Can Model decisions are made based on streams of actors, arenas, questions and solutions. The actors have bounded rationality, and they make decisions based on satisficing and problemistic search. A solution to a question will be found in "garbage cans", where actors and arenas are found together with

questions and solutions. A Garbage Can Model of boards and governance would imply that efforts should be made to sort streams so that related actors, arenas, questions and problems are kept together. Questions and solutions related to governance and strategic decision-making should be placed in the same garbage can as board members and the arenas where strategic and governance questions should be solved. One way of doing this is to make or require board routines or instructions stipulating the decision-making procedures for the board.

Derived from the ideas of Cohen, March and Olsen (1972), Lai (2003) draws a simplified conceptual diagram of the Garbage Can Model. He also depicts the four streams of elements which indepedantly flow into the organizational system. These are problems, choice opportunities, decision makers and solutions, all of which are thrown into “a garbage can”. A figure (see figure 7) which illustrates the corporate board as “a garbage can” is drawn below because it is very suitable since board members are appointed decision makers. The strategic role of the corporate board requires all board members to be effective decision makers who solve problems by evaluating choice opportunities and finding solutions.

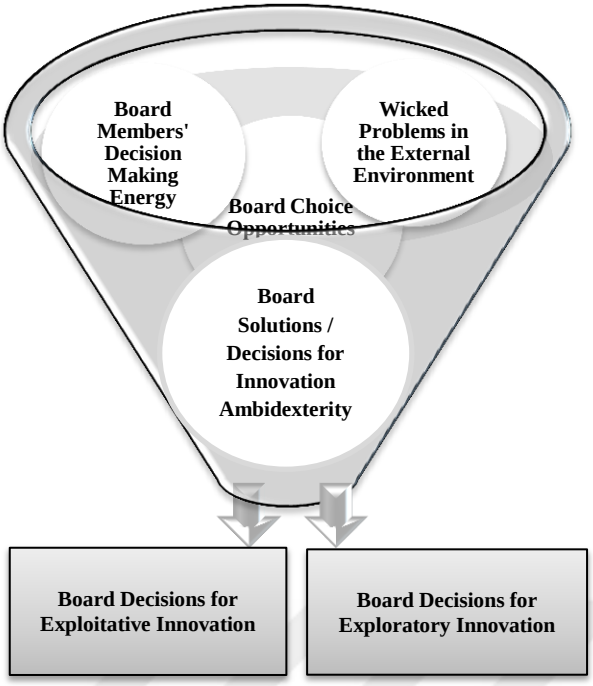

Figure 7. Garbage Can Model and Board Decisions for Innovation Ambidexterity

As illustrated in Figure 7, board members' decision-making energy, the sequences of wicked problems in the complex and chaotic external environment, board choice opportunities and board solutions for innovation ambidexterity are the inputs of the model and board decisions for exploitative and exploratory innovation are the outputs. The corporate board as a Complex Adaptive System (CAS) composed of board directors who are the actual decision makers usually encounters incoming wicked problems, solutions and choice opportunities in time. In an organizational context when these flow into the organizational system unpredictablely and randomly, decision makers, solutions and problems are thrown into garbage cans where decisions may be made or not (Lai, 2003). On the contrary, on the corporate board

decisions have to be made as an output of the CAS. These board decisions are critically important for directing the organization into the future.

According to Boer, Kuhn and Gertsen (2006), innovation becomes the most critical factor for embellishing competitiveness for innovating activities help organizations to be successful in addressing both the present day and future customers' needs. Schreyögg and Sydow (2010) write that organizations must act in answer to expanded complexity and turbulent setting, and in order to be able to do so, attaining organizational flexibility is required as well as in unison, the organization must not lose its current and lucrative business. In other words, this is the innovation ambidexterity discussed in the previous part. Corporate boards and directors serving on them have to in chorus make and balance board strategic decisions for exploitative and exploratory innovation.

Similarly, Raisch and Birkinshaw (2008) highlight that organizational leaders are regarded, and it is empirically proven that they play a vital role in nurturing ambidexterity. Some other researchers like Smith and Tushman (2005), and Gibson and Birkinshaw (2004) recommend that managers and their features are imperative antecedents to exploration and exploitation. Furthermore, Gibson and Birkinshaw stress

> "the important role played by senior executives in making an organization context effective in developing ambidexterity" (2004, p. 223).

Hambrick's and Mason's (1984) upper echelon standpoint is the ground for most of the research relating managers and their features to organizational results in general and ambidexterity specifically.

The foremost postulations are that it is not the environmental forces but the managers regulate organizational results, and that their bounded rationality which is embedded in their cognitions, would be echoed in their decisions and subsequently in organizational results. Smith and Umans (2015) state that one method for examining the connection between managerial characteristics, which are frequently used as proxies for managerial actions, choces and decisions, and organizational results would be to study managerial focus that is related to ambidexterity in particular organizational forms. The concept of managerial focus is drawn from the strategic management theory, and more precisely the idea of strategic choice put forward by Child, who defines strategic choice as

> "a process whereby power-holders in organizations decide upon the courses of action, action that can be directed towards different targets" (1972, p. 45).

The goals about which decisions are made and actions are taken are definite in the above mentioned two concepts of strategic choice and managerial focus. Drawing from the broad spectrum of strategic choice research, these goals are organizational matters which are external and internal (Smith & Umans, 2015). Initial organizational theories underline managers' focus to internal organizational conditions, for instance, to organizational structures and the interrelations among diverse organizational actors as discussed by Peters and Waterman (1982), and Mintzberg (1973). Later organizational theories inspect and stress managers' attention on the external environment (Grønhaug & Lines, 1995), for instance, customers, competitors, regulatory agents, suppliers and other stakeholders as deliberated in studies by Lafferty and Hult (2001), and Ruekert (1992).

In their more recent study, De Jong and Vermeulen (2006) also explore the managers' concentration on innovations, entrepreneurship and other factors which are internal and external to organizations. Hence, this concept of managers' focus includes the complexity of managers' priorities and choices by referencing internal as well as external matters. The direction of managers' focusses to particular matters that might be present within or outside organizations is accordingly the reflection of managers' cognitive schema and their bounded rationality. Counting on Hambirck's and Mason's (1984) quotation given above, managers' focus could be mirrored in the organizational results epitomized by the exploitation and exploration of organizational resources, which is actually the concept of organizational ambidexterity.

March (1991) argues that innovation is one of the main results of ambidexterity in organizations. Raisch and Birkinshaw (2008) state that organizational leaders are regarded, and it is empirically verified that they play an imperative role in fostering ambidexterity. Other researchers, for instance Smith and Tushman (2005), Gibson and Birkinshaw (2004), and Tushman and O'Reilly (1996) also theorize that managers, through their actions and decisions, are central antecedents to exploitation and exploration of organizational resources. Consequently, in this thesis it is proposed that another vital mode for inspecting the relationship between strategic decisions and organizational results is to test board members' ambidexterious decisions for both exploitative innovation and exploratory innovation.

2.9.2 Board Decisions for Exploitative Innovation

March states that exploitation activities embrace

> "such things as refinement, choice, production, efficiency, selection, implementation, and execution" (1991, p. 71).

Later, Greve proposes that exploitative innovation is the

> "use and refinement of existing knowledge, technologies and products" (2007, p. 2),

and Li, Lin and Chu (2008) write that exploitative innovation is synonymous with incremental innovation. In other words, and as Benner and Tushman (2003) write that exploitative innovations are incremental innovations, and they are developed to serve prevailing markets. Abernathy and Clark (1985) give the example which explaines that improving the efficiency of present distribution channels is exploitative innovation.

The objective of exploitative innovation is to shape an organization's existing competitive advantage by efficiently managing the existing organizational resources, capabilities and skills so as to advance the designs of present products and services or to strengthen present customer relationships (Sirén, Kohtamäki, & Kuckertz, 2012). Another research by Lubatkin, Simsek, Ling and Veiga (2006) also confers similar ideas. In this thesis, it is studied how board members' decisions for exploitation innovation have firmer and frequently short-range advantages.

2.9.3 Board Decisions for Exploratory Innovation

March describes exploration activities as

> "things captured by terms such as search, variation, risk taking, experimentation, play, flexibility and discovery" (1991, p. 71),

and Greve recommends that exploratory innovation is the

> "search for new knowledge, use of unfamiliar technologies and creation of products with unknown demand" (2007, p. 2).

Shortly, exploratory innovation is accepted to be synonymous to radical innovation (Li, Lin, & Chu, 2008). Benner and Tushman (2003), and Danneels (2002) write that exploratory innovations are radical innovations due to the fact that they are intended to meet the needs of new markets. According to Abernathy and Clark (1985) one example for exploratory innovation is the development of a distribution channel which is novel to the market.

Benner and Tushman (2002), and Levinthal and March (1993) explain that exploratory innovations necessitates the development of new knowledge. Exploratory innovations empower organizations to capture environmental opportunities and to create competences which are essential for long-standing survival and success as written in a study by Uotila, Maula, Keil and Zahra (2009), and in another study by Ireland, Hitt and Sirmon (2003). Furthermore, Lumpkin and Dess (1996) state that exploratory innovation switches to new markets, processes or products. According to Markides and Charitou (2004), an organization complements market domain by presenting goods or services which are innovative to the market, and consequently expanding markets by appealing to new buyers or developing new distribution channels. Accordingly, board members' decisions for exploration innovation are

studied in this PhD thesis since they are uncertain, and they repeatedly have lasting benefits.

3 METHODOLOGY

3.1 Sampling

3.1.1 Sampling Methods

The research sample for this study has been defined and chosen from board members who serve on corporate boards of companies located in Istanbul. Because of the nature of the sample that is board members who are difficult to access and collect data, two non-probability or non-random sampling methods have been implemented. The two non-probability sampling methods used in this research are the convinience and snowball sampling. The snowball sampling is also known as chain-refferal sampling. Since accessing a great number of board members and asking them to fill in a survey questionnaire would be very challenging, the convenience sampling method has been implemented by using the database of Turkish Assossiation for Corpotrate Governance (TKDY), researcher's personal network and Kamuyu Aydinlatma Platformu (KAP) website. The snowball sampling or the chain-refferal sampling method has been used by the researcher by sending the on-line survey questionnaire to the board members who are in her professional network. She asked them to fill in the questionnaire, and kindly requested to send it to other board members.

3.1.2 Sample Size

The sample size for this research has been estimated as small because of the nature of the sample. Firstly, the sample is naturally small because it is the limited number of board members who serve on corporate boards of companies located in Istanbul. Secondly, the sample size is unsurprisingly small because of

accessing these board members is very challenging. Thirdly, the sample size is obviously small due to the fact the board members are reluctant to share information, so the response rate is very low. Consequently, the sample size has been estimated by implementing two types of PLS-SEM sample size rules. The first type is PLS-SEM sample size rules of thumb or ten times rule (Hair, Ringle, & Sarstedt, 2011). The second type is Sample Size for a Statistical Power of 0.80 (Nitzl, 2016).

According to PLS-SEM sample size rules of thumb or ten times rule, the minimum sample has to be equal to the larger of the following. One, ten times the largest number of formative indicators that are used for measuring a latent construct. This rule has been ignored since in this research the indicators are reflective not formative. As a result, rule two has been applied. According to rule two, ten times the largest number of structural paths directed at a specific latent construct in the structural model (Hair, Ringle, & Sarstedt, 2011) (See figure 8).

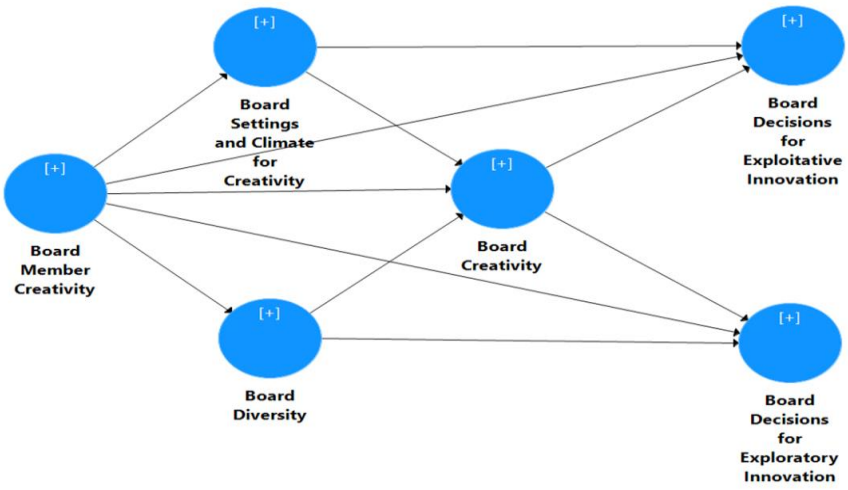

Figure 8. Structural Paths (arrows) directed towards Constructs (circles)

As illustrated in Figure 8, which is taken from the SmartPLS 3.0 statistical analysis of this empirical research, three is the largest number of structural paths directed to the latent constructs board creativity, board decisions for exploitative innovation, and board decisions for exploratory innovation. As a result, n = 10 x 3, so n = 30. In other words, the minimum required sample size for this resaerch is 30 observations, but the collected number for the pilot study is 66 observations, and the final sample size is 153 observations. Shortly, the collected data is more that the required 30 observations.

Nitzl (2016) states that the often-cited generic rule of thumb of 10 is not a reliable rule for determining a necessary sample size for PLS-SEM (Marcoulides & Chin, 2013). Because PLS-SEM essentially builds on OLS regressions, researchers can revert to statistical power analyses for multiple regression models (Cohen J. , 1992) to derive a satisfactory sample size. Statistical power is the probability of accepting an alternative hypothesis when the alternative hypothesis is true.

In other words, it is the ability of a test to detect an effect if an effect actually exists. The statistical power is a function of the effect size (f^2), the sample size (n), the number of predictors and the significance level (Faul, Erdfelder, Lang, & Buchner, 2007). To determine the necessary sample size for PLS-SEM, a management researcher should initially determine the statistical power. For business studies, a statistical power of at least 0.80 at a level of 0.05 is considered acceptable (Hair, Black, Babin, & Anderson, 2010).

The strength is measured using the effect size (f^2), where values of 0.02, 0.15 and 0.35 indicate whether an exogenous variable has a relatively small,

medium or large influence, respectively (Cohen J. , 1988). To calculate the necessary sample size, a PLS-SEM researcher also needs to determine the largest regression in the iteration process (Chin & Newsted, 1999). To do so, the researcher has to identify the variable with the greatest number of predictors, which is the variable in the inner structural model or in the outer measurement model (formative) with the most incoming arrows. The table below illustrates how the sample size depends on the number of predictors, the effect size and the significance level for the statistical power of 0.80 (Nitzl, 2016).

Table 1. *Sample Size for a Statistical Power of 0.80, (Nitzl, 2016)*

	Effect Size								
	0.02			0.15			**0.35**		
	(weak)			(medium)			**(strong)**		
Number of Predictors	Significance Level			Significance Level			**Significance Level**		
	0.01	0.05	0.10	0.01	0.05	0.10	0.01	**0.05**	0.10
1	588	395	311	82	55	43	37	25	20
2	699	485	388	98	68	54	45	31	25
3	779	550	444	109	77	62	51	36	29
4	845	602	489	114	85	69	55	40	32
5	902	647	527	127	92	75	59	43	35
6	953	688	562	135	98	80	63	**46**	38
7	999	725	594	142	103	85	67	49	41
8	1042	759	623	148	109	90	70	52	43
9	1083	791	651	154	114	94	73	54	45
10	1121	822	677	160	118	98	76	57	47

The figure below has been taken from the figures of the statistical results of the software package SmartPLS 3.0, and it depicts the number of predictors which are the arrows pointing towards the yellow boxes. These yellow boxes are predictors, or they are the number of question items for each latent construct. The highest total number is six indicators for board settings and climate for creativity, and board decisions for exploratory innovation, after conducting the calculation of indicator loadings (See figure 9).

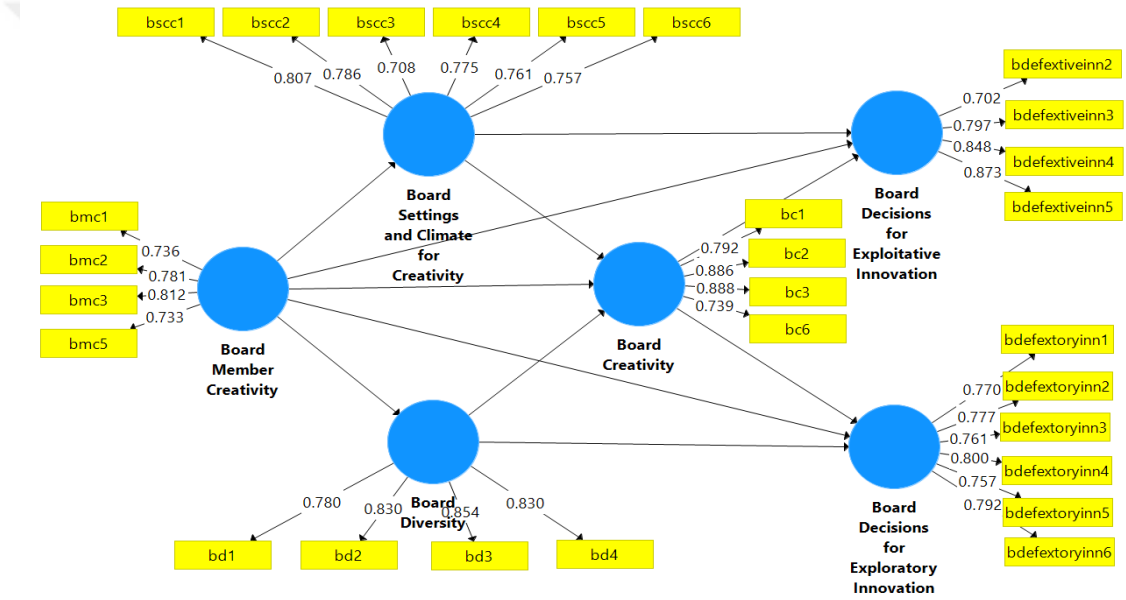

Figure 9. Predictors (arrows) directed towards Indicators (boxes)

To sum up, the sample size for this empirical research has been estimated by using Table 1. and Figure 9. From the SmartPLS 3.0 results of the proposed research model of this study, 3 is the largest number of structural paths directed to the latent constructs in the inner structural model, so the required sample size is 30 observations. The number of predictors is 6, and for strong effect size that is

0.35 and 0.05 significance level, the required sample size is 46 observations. The collected data is 153 that is more that the required sample size of 30 and 46, so the sample size of this study is 153 observations. Stated differently, the two rules for estimating the sample size have been applied, and 153 is the sample size of the empirical research in this PhD thesis.

3.2 Research Design

The research design of the study in this PhD thesis is based on six basic aspects (Sekeran & Bougie, 2013). The first aspect is the purpose of the study. According to it, the study is exploratory and descriptive. It is exploratory research since it relies on secondary research that is the literature review of corporate governance, board of directors, creativity, innovation etc. Besides, this study is descriptive because its purpose is to collect quantitative data so as to describe the characterstics of corporate boards, board members and board processes. This study is also correlational since its objective it to test and describe the relationships among some variables such as board creativity, board diversity, board context, board decisions for innovation etc, so some hypotheses about these relationships are stated, and they are statisticaly tested.

The second aspect is the extent of researcher interference with the study. In this research, there is minimal interference since apart from administering a questionnaire to board members, the researcher has not interfered with the typical functioning of corporate boards. As a result, the study setting is noncontrived since it has been done in the natural settings of boards. This study is also a field study because it is a correlational study completed in noncontrived setting.

Sekaran and Bougie (2013) write that a research design is a blueprint for data collection, measurement and the analysis of the collected data. In terms of the research strategies aspect of research design, the present study is a survey research because it is a system for collecting information from board members about the boards on which they serve. The collection of primary data has been done by administering an on-line survey questionnaire. The units of analysis of the present study are board members and boards as decision making groups. The last aspect of the research design is time horizon. This research is cross-sectional since it has been conducted only once over a period of six months. Lastly, the collected quantitative data is analyzed by implementing statistical methods.

3.3 Proposed Research Model

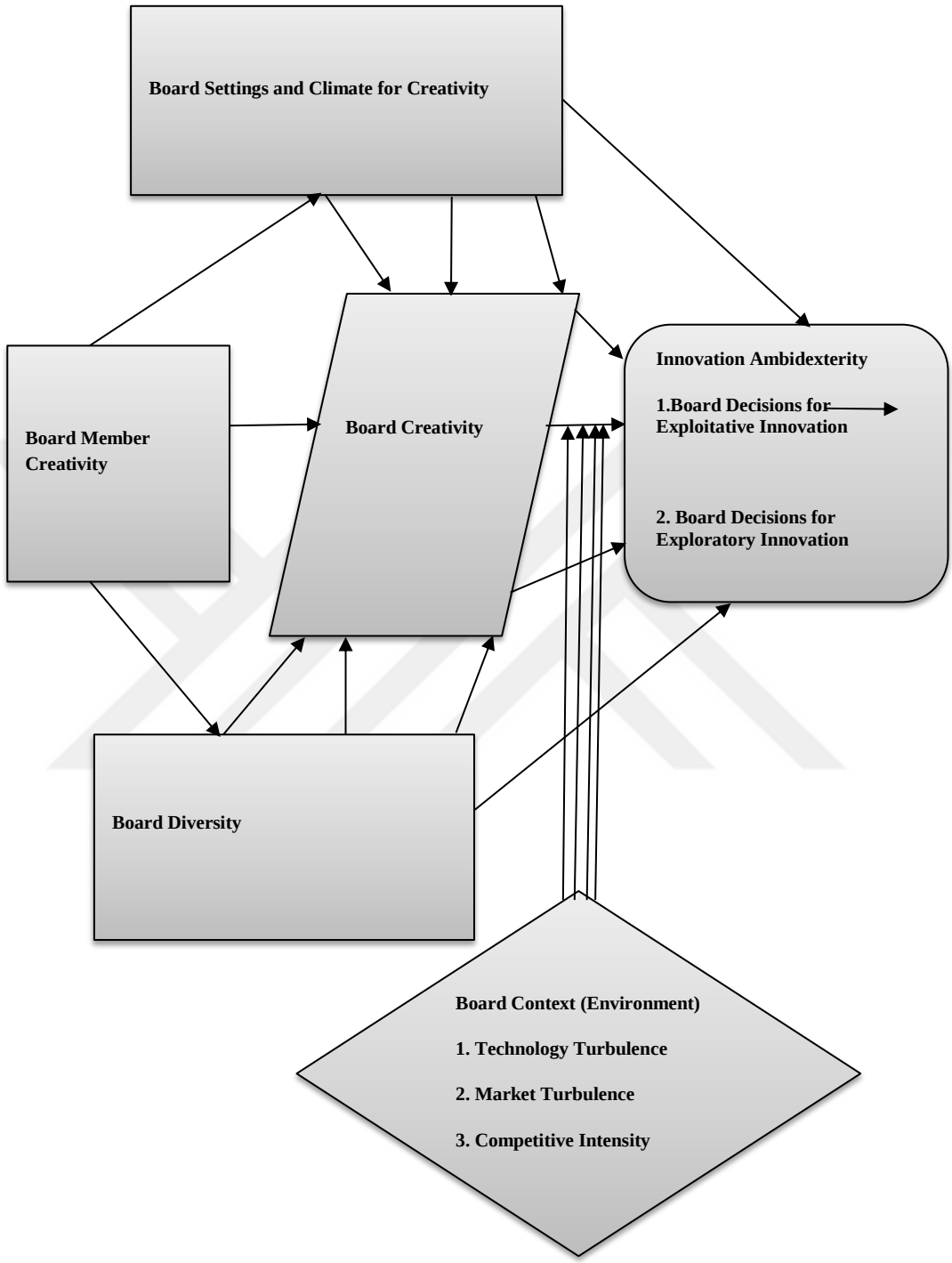

Figure 10. Proposed Research Model

3.4 Hypotheses

3.4.1 Direct Relation Hypotheses

H1: *Board settings and climate for creativity have a direct influence on board creativity.*

H2: *Board member creativity has a direct influence on board creativity.*

H3: *Board diversity has a direct influence on board creativity.*

H4: *Board settings and climate for creativity have a direct influence on board decisions for exploitative innovation.*

H5: *Board diversity has a direct influence on board decisions for exploratory innovation.*

H1: *Board settings and climate for creativity have a direct influence on board creativity.*

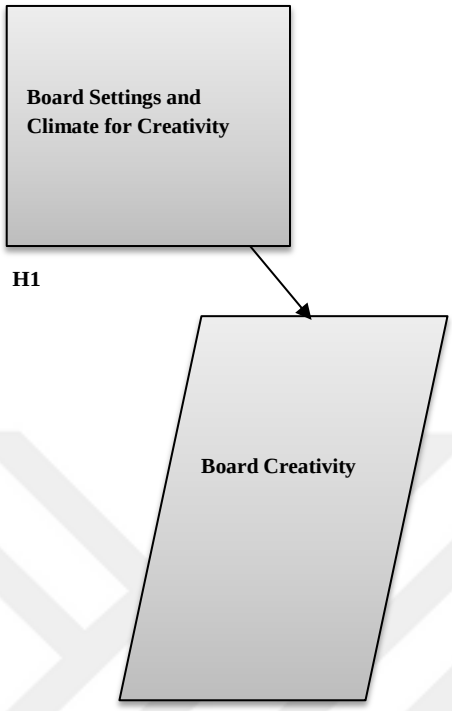

Figure 11. Hypothesis 1

H2: *Board member creativity has a direct influence on board creativity.*

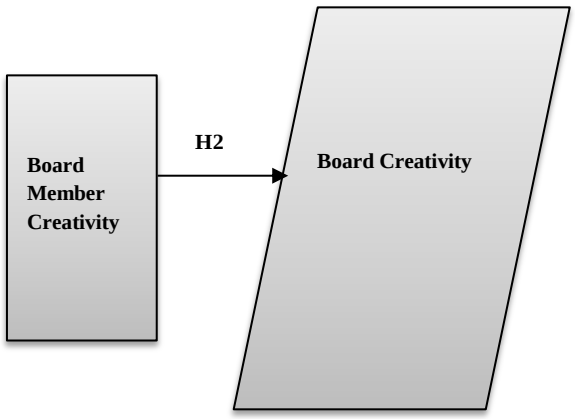

Figure 12. Hypothesis 2

H3: *Board diversity has a direct influence on board creativity.*

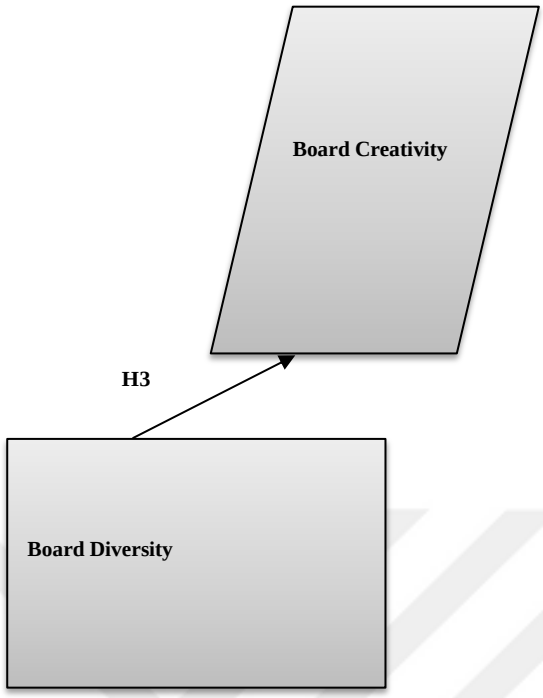

Figure 13. Hypothesis 3

H4: *Board settings and climate for creativity have a direct influence on board decisions for exploitative innovation.*

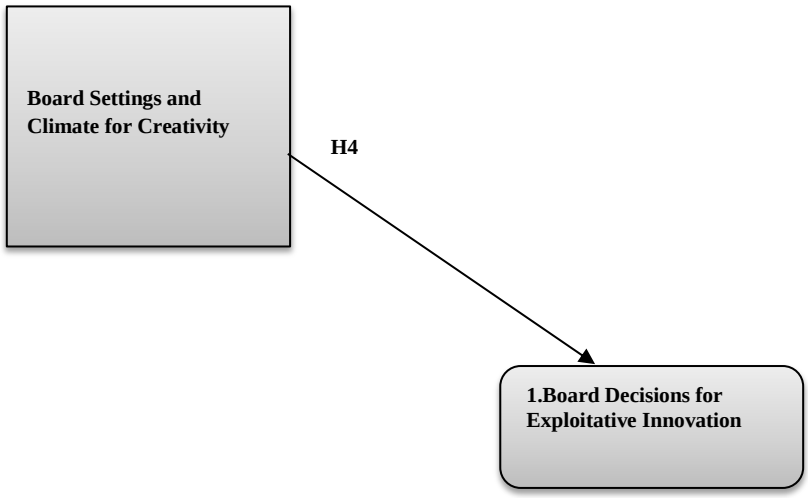

Figure 14. Hypothesis 4

H5: *Board diversity has a direct influence on board decisions for exploratory innovation.*

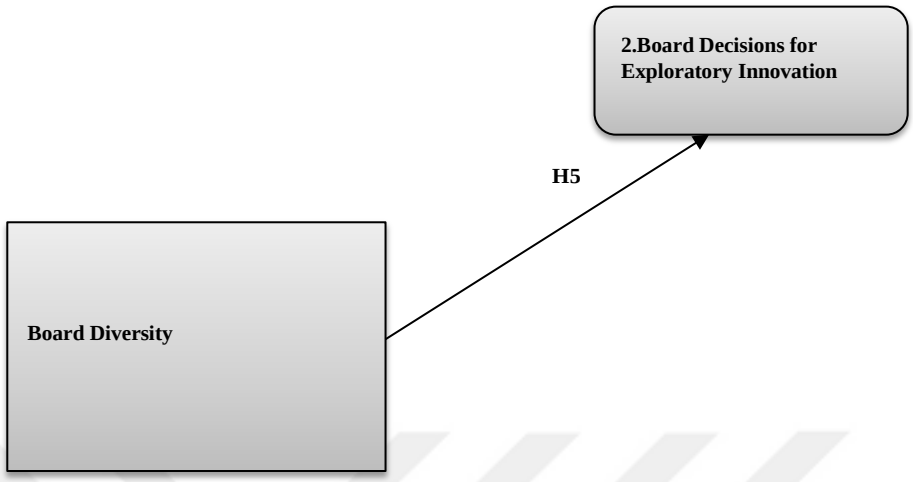

Figure 15. Hypothesis 5

3.4.2 Mediation Hypotheses

H6: *Board settings and climate for creativity mediate the relationship between board member creativity and board creativity.*

H7: *Board creativity mediates the relationship between board member creativity and board decisions for exploitative innovation.*

H8: *Board creativity mediates the relationship between board member creativity and board decisions for exploratory innovation.*

H9: *Board diversity mediates the relationship between board member creativity and board creativity.*

H10: *Board creativity mediates the relationship between board settings and climate for creativity and board decisions for exploitative innovation.*

H11: *Board creativity mediates the relationship between board diversity and board decisions for exploratory innovation.*

H6: *Board settings and climate for creativity mediate the relationship between board member creativity and board creativity.*

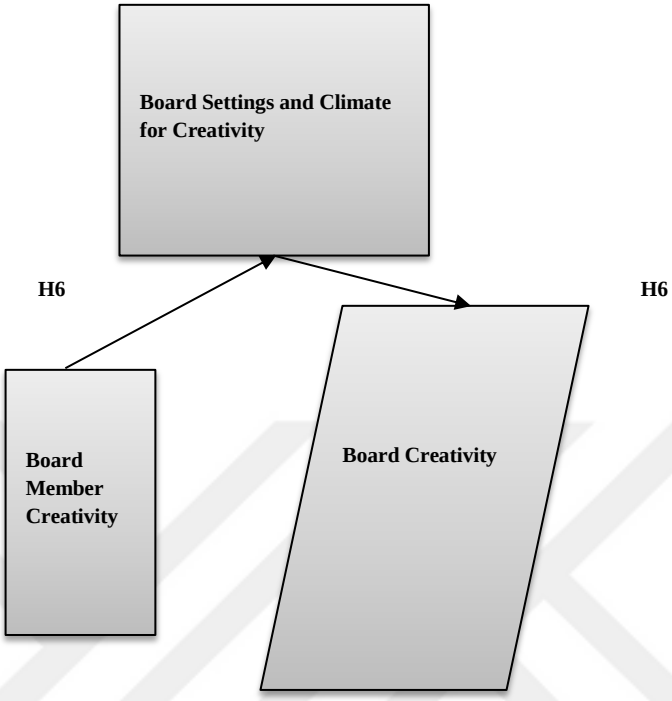

Figure 16. Hypothesis 6

H7: *Board creativity mediates the relationship between board member creativity and board decisions for exploitative innovation.*

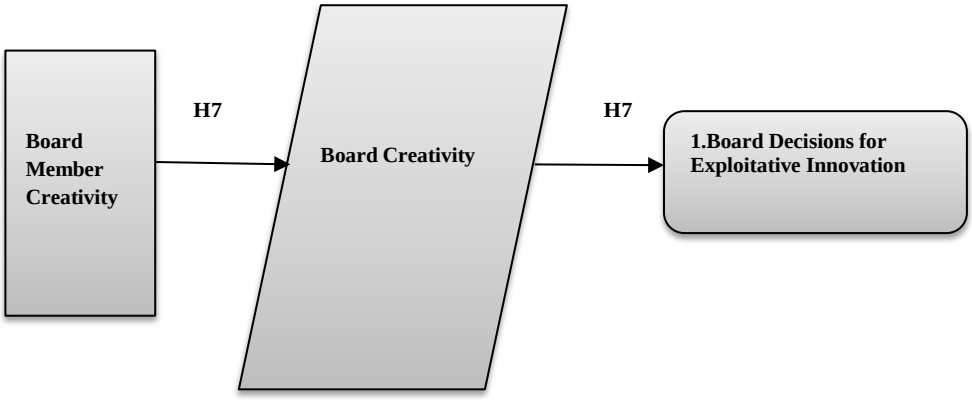

Figure 17. Hypothesis 7

H8: *Board creativity mediates the relationship between board member creativity and board decisions for exploratory innovation.*

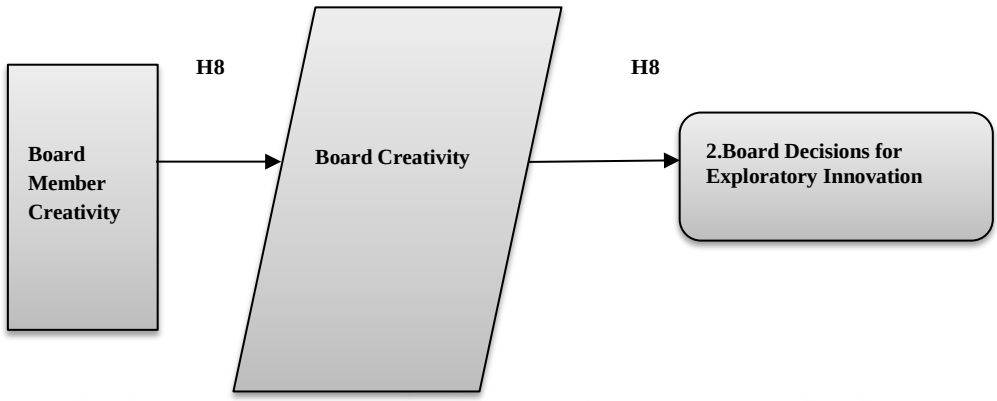

Figure 18. Hypothesis 8

H9: *Board diversity mediates the relationship between board member creativity and board creativity.*

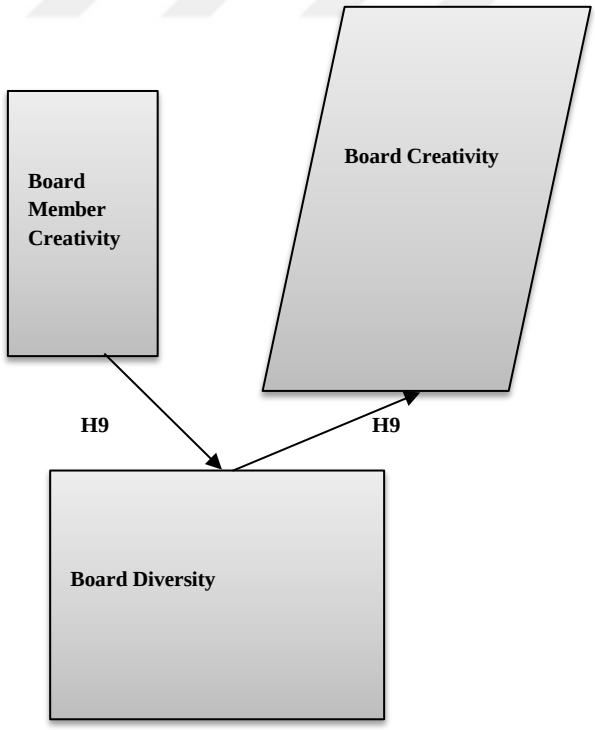

Figure 19. Hypothesis 9

H10: *Board creativity mediates the relationship between board settings and climate for creativity and board decisions for exploitative innovation.*

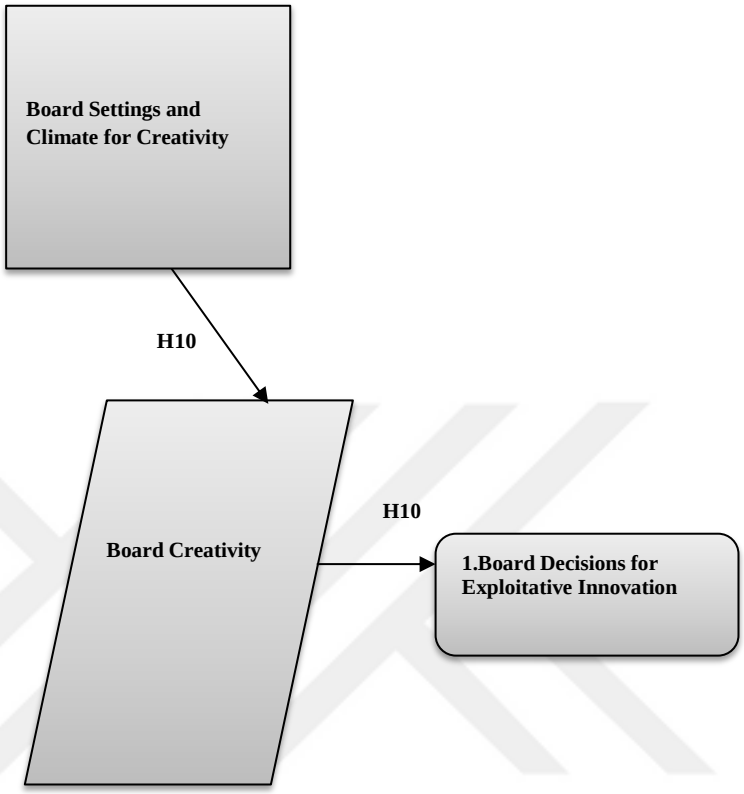

Figure 20. Hypothesis 10

H11: *Board creativity mediates the relationship between board diversity and board decisions for exploratory innovation.*

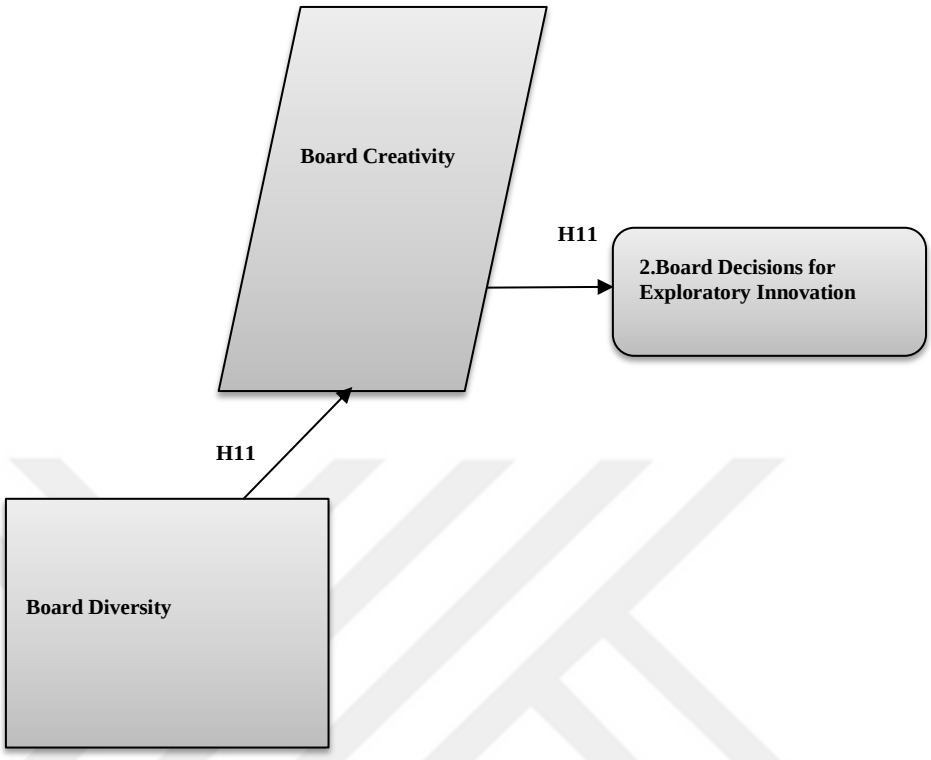

Figure 21. Hypothesis 11

3.4.3 Moderation Hypotheses

H12: *Technology turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.*

H13: *Technology turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.*

H14: *Market turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.*

H15: *Market turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.*

H16: *Competitive intensity moderates the relationship between board creativity and board decisions for exploitative innovation.*

H17: *Competitive intensity moderates the relationship between board creativity and board decisions for exploratory innovation.*

H18: *External environment moderates the relationship between board creativity and board decisions for exploitative innovation.*

H19: *External environment moderates the relationship between board creativity and board decisions for exploratory innovation.*

H12: *Technology turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.*

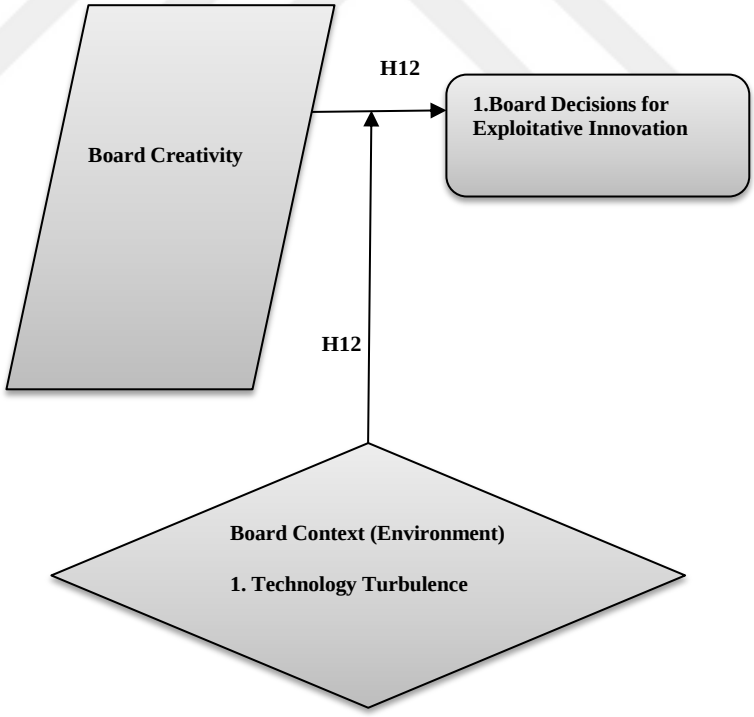

Figure 22. Hypothesis 12

H13: *Technology turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.*

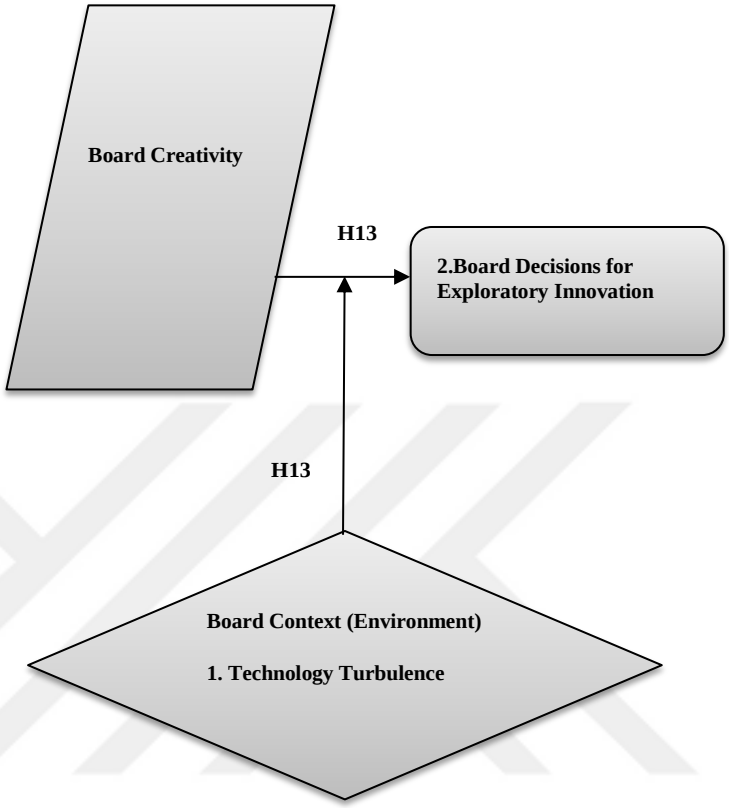

Figure 23. Hypothesis 13

H14: *Market turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.*

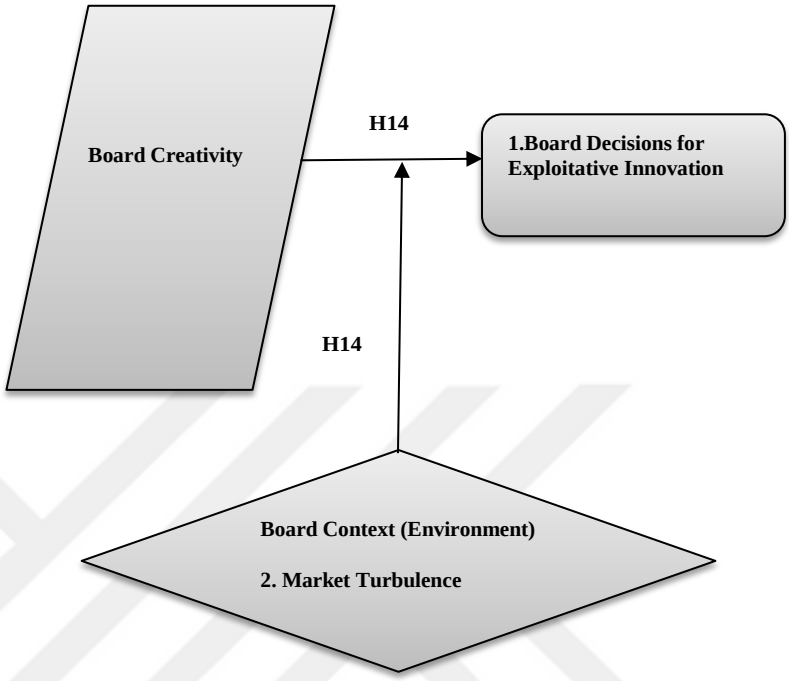

Figure 24. Hypothesis 14

H15: *Market turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.*

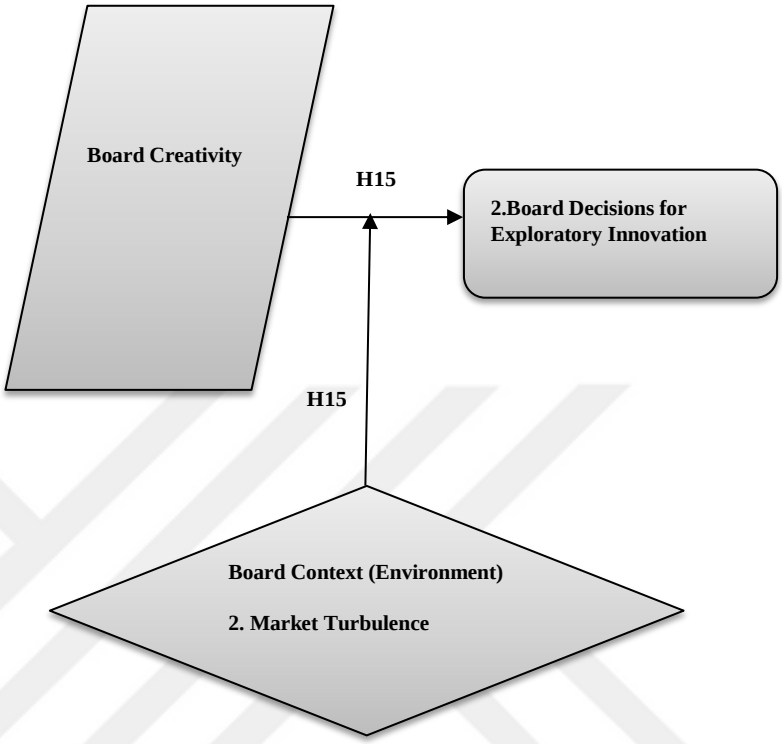

Figure 25. Hypothesis 15

H16: *Competitive intensity moderates the relationship between board creativity and board decisions for exploitative innovation.*

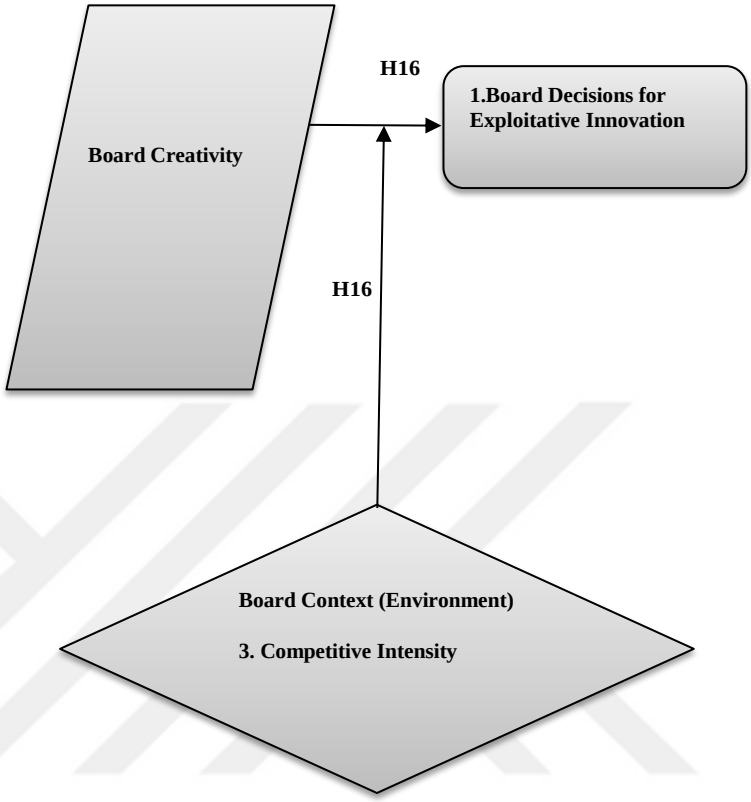

Figure 26. Hypothesis 16

H17: *Competitive intensity moderates the relationship between board creativity and board decisions for exploratory innovation.*

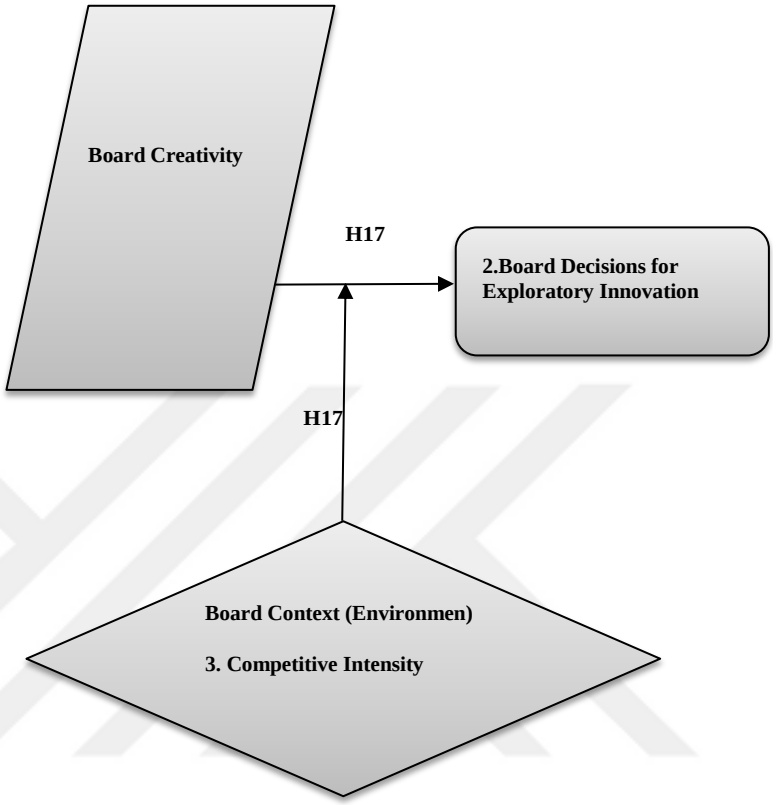

Figure 27. Hypothesis 17

H18: *Board context or environment that is the combination of technology turbulence, market turbulence and competitive intensity moderates the relationship between board creativity and board decisions for exploitative innovation.*

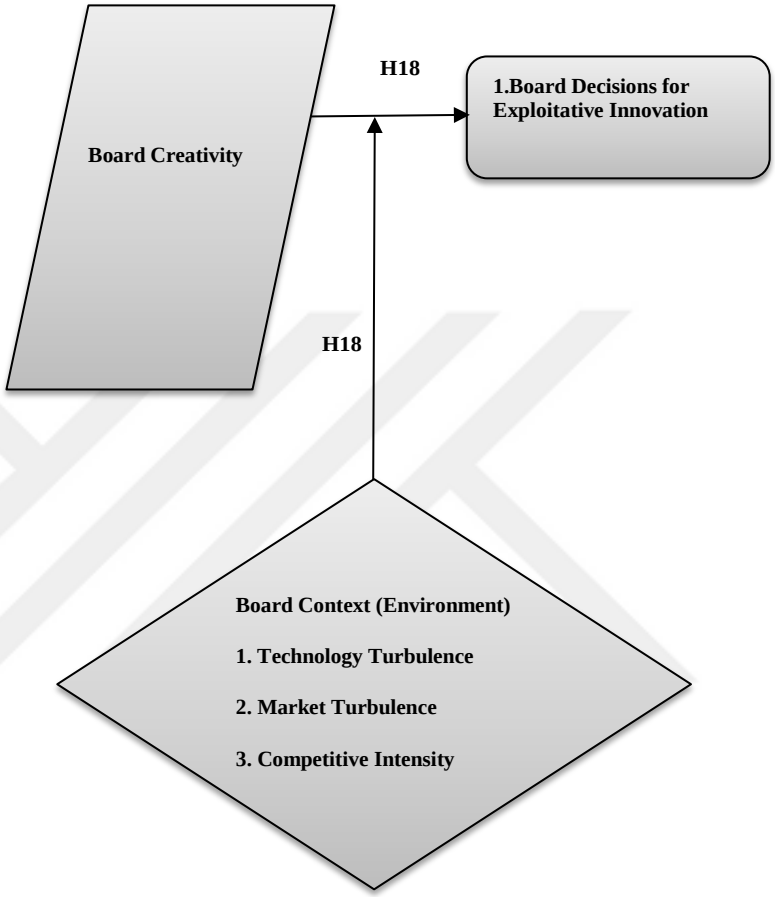

Figure 28. Hypothesis 18

H19: *Board context or environment that is the combination of technology turbulence, market turbulence and competitive intensity moderates the relationship between board creativity and board decisions for exploratory innovation.*

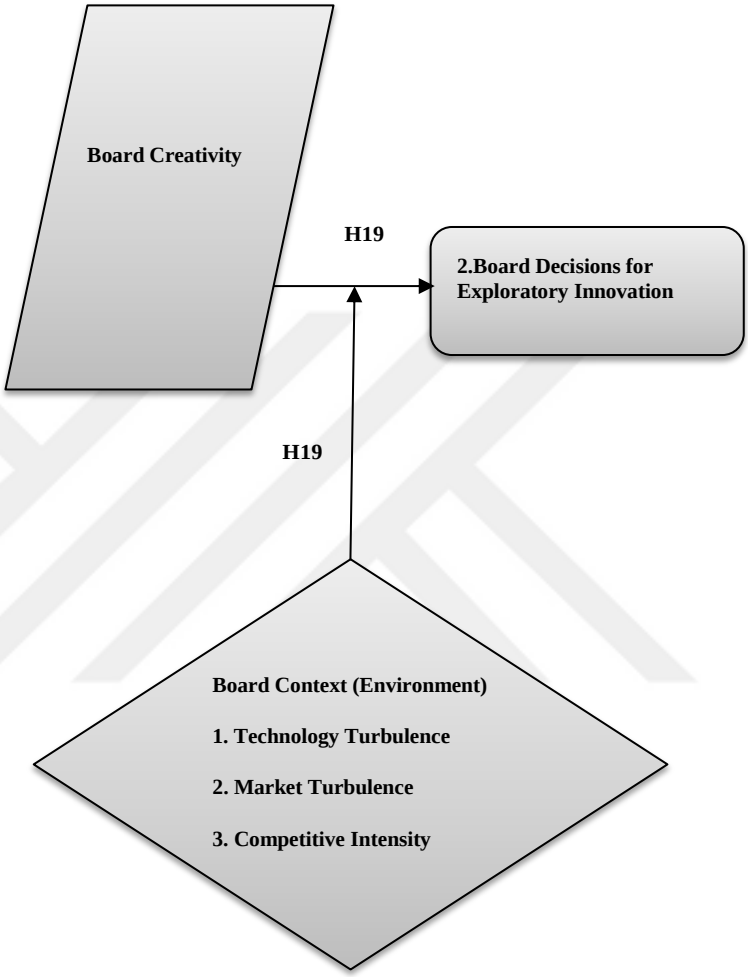

Figure 29. Hypothesis 19

3.5 Procedure

First of all, some survey items have been used for creting the questionnaire in English (see Appendix A). Then, these items have been translated to Turkish. Next, the Turkish version of the questionnaire (see Appendix B) has been finalized. By using SurveyMonkey website, the Turkish version has been prepared as an on-line survey questionnaire. The confidentiality of participation and data management have been explained at the very beginning of this on-line survey questionnaire. Then, the link of the on-line survey questionnaire has been sent as a direct e-mail message (see Appendix C) to board members who serve on the corporate boards of companies located in Istanbul. The time period for administering the questionnaire was six months, from September 13, 2018 to March 13, 2019.

The database of Turkish Assossiation for Corpotrate Governance (TKDY) has been used to reach some board members who are TKDY members. From September 13, 2018 to the end of December 2018, an announcement requesting the completion of the on-line survey questionnaire had been made 5 times, and it was sent to 600 TKDY members. Firstly, this announcement had been made twice in September 2018 and once on October 4, 2018. In this period between September and October 2018, 38 questionnaires were fully completed, but 10 of them had to be deleted because there were unaswered questions.

Since the response rate was not satisfactory, the researcher had to send the on-line questionnaire to the e-mail addresses of 100 board members in her personal network. She also asked them to send the questionnaire to other board members. As a result, 23 questionnaires were filled in, and since 7 of them were

incomplete, they were deleted. On November 7, 2018, 45 fully answered questionnaire were collected.

On November 13, 2018, for the fourth time, TKDY made the announcement and sent the questionnaire to its members. On November 13, 14 and 15, 13 questionnaires were filled in, and the total number of data was 56 questionnaires. On November 25, there were 62 questionnaires from which 3 were deleted, and the remaining 59 questionnaires were fully answered. For the fifth and the last time, on November 30, 2018, TKDY made the announcement and sent the questionnaire to its members. On December 3, 2018, 3 incomplete questionnaires were deleted, and the total number of collected data was 67 questionnaires.

In order to collect more data, the researcher used Kamuyu Aydınlatma Platformu (KAP) website to find information about the companies and their comporate boards, so she had sent the on-line survey questionnaire directly to the e-mail addresses of 788 board members whose names are listed on KAP website. From these 788 board members only 79 answered all survey questions. Also, 22 questionnaires had to be excluded from the data set since they were incomplete.

The administration of this survey research and the collection of primary data can be summerized as follow. In September 2018, 12 fully completed questionnaires were collected. Then, 25 were collected in October 2018, 27 in November 2018, and 3 in December 2018. Finally, 79 questionanires were collected in January 2019 and 7 in February 2019. Shortly, in the period of six months, from September 13, 2018 to March 13, 2019, 153 fully answered questionnaires had been collected.

3.6 Data Collection

The on-line survey questionnaire in the empirical research of this thesis has been created by applying a multiple-item method. Items from validated measurement instruments used before have been chosen and adapted to guarantee the validity of the survey instrument. These items have measured the constructs in the proposed research model depicted in Figure 10. Stated differently, the main constructs have been measured by using items from six previously implemented and validated measurement instruments which are as follow.

Board Settings and Climate for Creativity - Adapted from RESC (rCAB, 2011). The Runco Environment and Settings Climate (RESC) is a creativity instrument from the Runco Creativity Assessment Battery abbreviated as rCAB. The RESC contents and items measure how settings and climate affect creativity (Runco, et al., 2016). It has different versions, and the short version that is specifically for organizational and business settings have been used, and six items from this vesrsion have been adapted for measuring board settings and climate for creativity. Also, it has been changed from 5-point Likert-type to 6-point Likert-type scale.

Board Member's Creativity - Adapted from CAAC (rCAB, 2011). The Creative Activity and Accomplishment Checklist (CAAC) is another creativity measure from the Runco Creativity Assessment Battery or rCAB. It has different versions that measure creativity in different domains such as art, science, leadership etc., and they have focused on measuring the quantity of creative activity by disregarding its quality. Since CAACs are self-report type of instrument, they ask respondents to indicate how many times they have been involved in different creative activities, or how many times they have accomplishd certain creative achievements

(Paek & Runco, 2017). For the purpose of this study, the CAAC at work domain heve been used to measure board member's creativity. Six items from the second part of the short form of CAAC at work heve been adapted in order to measure board members' creativity when they serve as board members on corporate boards. Runco's five point scale has been changed to six point so that it could fit with the scales of the other instruments.

Board Creativity - (Sellevoll, Huse, & Hansen, 2007). Board creativity has been measured with the six items from "Value Creating Board" research instrument used in the Research Report 2/2007 of The Value Creating Board Results from the "Follow-Up Surveys" 2005/2006 in Norwegian firms prepared by Thomas Sellevoll, Morten Huse and Cathrine Hansen (2007) at The Value Creating Board Program Center for Boards and Governance, the Norwegian School of Management BI Department of Innovation and Economic Organization.

Board Diversity - (Sellevoll, Huse, & Hansen, 2007). Similarly, board diversity has been tested by implementing the five items from "Value Creating Board" research instrument used in the Research Report 2/2007 of The Value Creating Board Results from the "Follow-Up Surveys" 2005/2006 in Norwegian firms. The five items measuring board diversity are board members' industrial, functional and educational background, their personality and age.

Board Decisions for Innovation Ambidexterity - Adapted from Jansen, Van Den Bosch and Volberda (2006). From the twelve items, six measure board decisions for exploitative innovation, and the other six measure board decisions for exploratory innovation (Jansen, Van Den Bosch, & Volberda, 2006).

Environment - Adapted from Jaworski and Kohli, (1993). Nine items from this instrument have been adapted in order to test the board context that is the

environment external to it. Three of them measure technology turbulence. Besides, three items measure market turbulance, and the last three measure competitive intensity in the external environment (Jaworski & Kohli, 1993).

All the items from the above-mentioned instruments have been used and quantified by implementing Likert-style scale, so each item has been individually measured on a 6-point Likert scale that ranges from “I strongly disagree” to “I strongly agree”. As commonly used, Likert scales have a tendency to undervalue extreme positions (Albaum, 1997). Usually, research subjects are unwilling to express an extreme position albeit they have it. They are inclined to satisfy the researcher or the interviewer, give the impression of being supportive, or they respond by giving a socially acceptable answer, so choosing a scale without a midpoint appears to soothe this social desirability bias without shifting the direction of an opinion (Garland, 1991). In short, the six-point Likert scale has been favored in this research since it evades a midpoint, which averts research subjects or respondents from choosing a neutral or unbiased default.

3.7 Data Analysis

The data analysis method preferred for the empirical research of this thesis is the Structural Equation Modeling, abbreviated as SEM. SEM is a blend of two very powerful statistical approaches. These are exploratory factor analysis and structural path analysis, both of which empower the synchronized assessment of the two models that are the structural model and the measurement model (Lee, Petter, Fayard, & Robinson, 2011). The main reason for choosing and implementing SEM is because its applications have increased noticeably in recent years (Matthews, Zablah, Hair, &

Marshall, 2016) due to SEM's upgraded feature to evaluate the validity and reliability of multi-item construct measures along with its superb feature to test structural model relationships (Hair, Sarstedt, Ringle, & Mena, 2012).

There are two SEM methods that are the Covariance-Based, abbreviated as CB-SEM, and developed by Jöreskog (1993) and (1978), and Variance-Based Partial Least Squares, abbreviated as PLS-SEM, and developed by Lohmöller (1989) and Wold (1982). CB-SEM is mostly implemented for confirmation that is explanation of established theory, whereas PLS-SEM is a prediction-oriented approach to SEM, which is principally applied for exploratory research, but it is also suitable for confirmatory research (Sarstedt, Ringle, Henseler, & Hair, 2014).

Stated differently, PLS-SEM method overcomes the apparent dichotomy between predictive and confirmatory research because academics using this method expect their research model to be grounded in well-developed causal explanations as well as to possess high predictive accuracy (Sarstedt, Hair, & Ringle, 2018). As a result, PLS-SEM is appropriate for most types of business research, since it classically aims at testing a theory that is explanation while presenting recommendations for management practice that is prediction (Hair, Matthews, Matthews, & Sarstedt, 2017), so this is the main reason for choosing PLS-SEM as the data analysis tool of the empirical research in this thesis.

Besides, for the purpose of the present research instead of the commonly used CB-SEM statistical method, the PLS-SEM method has been prefered and implemented because of some other critical reasons. One reason for choosing PLS-SEM is the recent and significant upsurge in the usage of PLS-SEM in business research especially in strategic management and marketing both of which are the

fields of research in the present thesis along with corporate boards research. Firstly, in strategic management research, PLS-SEM usage has increased linearly as a function of time (Hair, Sarstedt, Pieper, & Ringle, 2012). Secondly, in marketing research the use of PLS-SEM has also accelerated over time (Hair, Sarstedt, Ringle, & Mena, 2012).

Another reason for deciding on PLS-SEM is the fact that the research in this thesis is exploratory. Since PLS-SEM operates much like a multiple regression analysis (Hair, Ringle, & Sarstedt, 2011), this makes PLS-SEM particularly valuable for exploratory research purposes due to the fact that PLS is mainly developed for research contexts that are instantaneously theory-skeletal and data-rich (Lohmöller & Wold, 1980). In other words, the research design for the empirical research in this thesis is exploratory research, and its goal is predicting key target constructs or identifying some "driver" constructs, that is why the PLS-SEM method is the best choice.

The next reason for choosing PLS-SEM is its increased usage that can be attributed to the method's ability to deal with challenging modeling problems which regularly occur in the social sciences such as unusual data characteristics and highly complex models (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). The proposed research model, as depicted in Figure 10., is complex with many latent constucts, direct, mediating and moderating relationships. That is why, PLS-SEM has been selected as the statistical tool for testing the proposed research model.

The meta-analysis of PLS-SEM review studies conducted by Hair, Sarstedt, Hopkins and Kuppelwieser (2014) has made known that nonnormal data and small sample sizes are researchrs' most prominent reasons for using PLS-SEM, so

these are the last two reasons for selecting PLS-SEM as the statistical method for data analysis in this research. It is known that usually in social science research, the collected data do not follow a multivariate normal distribution. Lei and Lomax (2005) state that nonnormal data can cause inflated goodness-of-fit measures and underestimated standard errors when CB-SEM method is applied for evaluating a path model. In contrast, PLS-SEM is less stern when analyzing nonnormal data for the fact that PLS algorithm alters nonnormal data in compliance with the central limit theorem as conversed by Cassel, Hackl and Westlund (1999), and Beebe, Pell and Seaholtz (1998).

Finally, Shah and Goldstein (2006) state that sample size can impact quite a few aspects of SEM such as statistical power, model fit and parameter estimates. Because of the nature of the sample that is board members, and the low response rate the sample size (n = 153) in the present empirical research is small so that PLS-SEM method had to be used. In comparison to CB-SEM, PLS-SEM can be operated with smaller sample sizes, even when research models are exceedingly complex. That is why in such situations, PLS-SEM mostly displays better convergence behavior than CB-SEM and attains higher statistical power as written by academics such as Henseler and Fassott (2010), and others like Reinartz, Haenlein and Heneseler (2009).

To sum up, because of the many valid reasons listed and discussed above, PLS-SEM was selected and favored as the statistical method for the data analysis of the empirical research in this thesis. Consequently, the primary quantitative data collected by administering on-line survey questionnaire have been analyzed by implementing PLS-SEM statistical method to test a structural equation model

with two components that are the measurement model and the structural model (Hair, Ringle, & Sarstedt, 2011).

In order to assess these two models, SmartPLS 3.0 software program has been favored and used since it is a modern and very user-friendly software program which is based on PLS-SEM approach. By operating the last version that is SmartPLS 3.0 (Ringle, Wende, & Becker, 2015), the research model of this study has been drawn, and it has been statistically analyzed in two stages. In the first stage the measurement or inner model has been tested. Then, in the second stage the structural or the outer model has been assessed. The rules of thumb for model evaluation proposed by (Hair, Ringle, & Sarstedt, 2011) have been used for analysing the data and presenting the results.

3.7.1 Statistical Analysis of the Measurement Model

In PLS-SEM, the measurement model contains the unidirectional predictive relationships between each latent construct and its associated observed indicators. Multiple relations are not permitted, so indicator variables are associated with only one single latent construct. In PLS-SEM, there are two types of measurement models. These are formative and reflective measurement models (Hair, Ringle, & Sarstedt, 2011). According to Rigdon, Ringle and Sarstedt (2010), researchers using PLS-SEM refer to reflective measurement models that are scales as Mode A, and since in this research Likert type scale has been used to measure the constructs, the measurement model is reflective, and it has reflective indicators that are actually the items of the survey questions.

Reflective indicators are seen as functions of the latent construct. Changes in the latent construct are reflected in changes in the indicator variables. Reflective indicators are depicted as singleheaded arrows which point from the latent construct outward to the indicator variables. In PLS-SEM, the term outer loadings are used to describe the associated coefficients for these relationships (Hair, Ringle, & Sarstedt, 2011).

In this research, there are six latent constucts that have indicator variables, and these are shown by singleheaded arrows pointing from the latent constructs to the indicators. According to Hair, Ringle and Sarstedt (2011), reflective measurement models are tested for internal consistency reliability, indicator reliability, convergent validity and discriminant validity. By using the different statistical methods in SmartPLS 3.0 software (Ringle, Wende, & Becker, 2015) all of these have been estimated, and they are presented in the results section of this thesis.

3.7.2 Statistical Analysis of the Structural Model

The structural model in this research has been tested and presened by using the guidelines provided by Hair, Ringle and Sarstedt (2011). They suggest measures such as R^2 values, path coefficients' significance, predictive values (Q^2) and heterogeneity. Hair, Risher, Sarstedt and Ringle (2019) write about the robustness of the structural model, and they suggest the same measures as well as Collinearity Statistics (VIF). Shortly, the structural model in the present study has been tested by using the guidelines given by Hair, Risher, Sarstedt and Ringle (2019), so R^2 values, path coefficients' significance, predictive values (Q^2),

heterogeneity and Collinearity Statistics (VIF) have been calculated, and they are presented in the result tables that are shown in the following chapter.

4 RESULTS

The results of the statistical analyses of the collected primary data are presented in four groups. First of all, the tables displaying the demographic results are presented. Then, the results of the different statistical analyses implemented to test the structural equation model with two components that are the measurement model and the structural model (Hair, Ringle, & Sarstedt, 2011) are tabulated. The rules of thumb for model evaluation proposed by Hair, Ringle and Sarstedt (2011) are applayed for presenting the results of the measurement model and the structural model. Consequently, the results of the measurement model are exhibited firstly. After these, the results of the structural model are displayed. Finally, the hypotheses testing results are shown in some result tables.

4.1 Demographic Results

The demographic results of the research in this thesis are grouped in three sets. The first set is the results of the demographic questions about board members. The second set is the results of demographic questions about the corporate boards on which board members serve. The third and last set is the result of demographic questions about the companies of the surveyed boards.

Table 2. *Board Members' Gender*

Response Choices	Response Percentage	Response Number
Male	83.01%	127
Female	16.99%	26
		153

Table 2. depicts the gender distribution of the board members who participated in this research. As expected, with 83.01 % there is the gender dominance of male board members. The number of female board members is only 26, and it equals 16.99 %.

Table 3. *Board Members' Age*

Response Choices	Response Percentage	Response Number
18 - 30 years old	0.65%	1
31 - 40 years old	8.50%	26
41 - 50 years old	28.10%	43
51 - 60 years old	38.56%	59
61 - 70 years old	18.30%	28
71 years old and above	5.88%	9
		153

As shown in Table 3., the greatest number, 59, of board members who participated in this research are in the age range between 51 to 60 years old. The second group with 43 responses is between 41 to 59 years old. These are also expected results that are very similar to the discussed ideas in the literature review part of this thesis.

Table 4. *Board Members' Education*

Response Choices	Response Percentage	Response Number
High School	3.92%	6
University	41.83%	64
Master's Degree	41.83%	64
PhD	12.42%	19
		153

The educational level of the board members is very high. 64 board members that is 41.83 %, of board members hold university diploma, and similary 64 that is also 41.83 % hold master’s degree diploma as displayed in Table 4.

Table 5. *Board Members' Subject Area of University Education*

Response Choices	Response Percentage	Response Number
High School Graduate	3.92%	6
Economics / Administrative Sciences	49.02%	75
Law	3.27%	5
Engineering	33.33%	51
Sciences	1.31%	2
Social Sciences	1.31%	2
Medicine / Health Sciences	5.23%	8
Other (please specify)	2.61%	4
		153

As expected, 75 board members, that is 49.02 %, have a university diploma in economics or administrative sciences. 33 % or 51 board members graduated from engineering departments as shown in Table 5. Surprisingly, only 5 board members obtained a university diploma from law.

Table 6. *Board Members' Departmental Experience*

Response Choices	Response Percentage	Response Number
Strategy	9.15%	14
Business Develeopment	7.84%	12
Audit	4.58%	7
Risk Management	3.27%	5
Accounting	3.93%	6
Finance	23.53%	36
Law	1.96%	3
Sales	6.54%	10
Marketing	4.58%	7
Human Resources	4.58%	7
IT	0.65%	1
Production	6.54%	10
Operations	3.27%	5
Supply Chain	1.31%	2
Research & Development	1.31%	2
Corporate Communication	1.96%	3
Public Relations	0.00%	0
Other (please specify)	15.03%	23
		153

As it is clear from Table 6., there is a great diversity in the departmental experience of the board members with the greatest number of 36 board members (23.53 %) who have an experience in finance department.

Table 7. *Board Members' Industrial Experience*

Response Choices	Response Percentage	Response Number
Banking and Capital Markets	30.07%	46
Government and Public	1.96%	3
Industrial Production	9.80%	15
Enery and Infrastructure	5.88%	9
Real Estate	4.58%	7
Media and Entertainment	0.65%	1
Metal and Mining	1.96%	3
Automotive	6.54%	10
Retail and Consumer Products	5.23%	8
Oil and Gas	1.96%	3
Health, Pharmaceutical and Life Sciences	7.84%	12
Insurance and Private Pension	0.00%	0
Transportation and Logistics	1.31%	2
Technology	3.92%	6
Telecommunication	0.65%	1
Tourism	1.31%	2
Asset and Wealth Management	1.31%	2
Other (please specify)	15.03%	23
		153

Table 7. depicts that there is a great variety in the industrial experience of board members, but the dominating industry with 30.07 % is banking and capital markets.

Table 8. *Board Members' Membership*

Response Choices	Response Percentage	Response Number
Member of the Executive Committee	42.48%	65
Independent Board Member	23.53%	36
Other (please specify)	33.99%	52
		153

In Table 8., it is summarized that the board members who answered the questionnaire had different membership. 42.48 % were members of the Executive Committee, and 23.53 % were independent board members. 33.99 % specified that they hold positions such as Chair of the Board, Assistant Chair of the Board, General Manager and Board Member, CEO etc.

Table 9. *Board Members' Tenure*

Response Choices	Response Percentage	Response Number
1 - 3 years	27.45%	42
4 - 6 years	17.65%	27
7 - 9 years	13.07%	20
10 years and above	41.83%	64
		153

The greatest number, 64 board members or 41.83 % had a tenure of 10 years and above as shown in Table 9. Interestingly, 42 of them had a tenure of 1 to 3 years, and these represented 27.45 %.

The second set is the results of the demographic questions about corporate boards.

Table 10. *Boards' Size (Total Number of Members)*

Response Choices	Response Percentage	Response Number
1 - 3 members	7.19%	11
4 - 6 members	37.25%	57
7 - 9 members	39.22%	60
10 - 12 members	13.07%	20
12 members and above	3.27%	5
		153

Table 10. depicts the board size, and two of the groups have nearly the same response percentage. These are 37.25 % for the board size that is 4 to 6 board members, and

39.22 % for the board which has 7 to 9 board members. From this data, it might be concluded that the board size of companies located in Istanbul is middle size that is 7 to 9 members, or 4 to 6 members.

Table 11. *Number of Executive Board Members*

Response Choices	Response Percentage	Response Number
1 - 2 members	41.83%	64
3 - 4 members	27.45%	42
5 - 6 members	21.57%	33
7 members and above	9.15%	14
		153

The greatest percentage that is 41.83 % of board members who participated in the survey answered that the number of Executive Board Members on their boards is 1 to 2 members. Respectively, 27.45 % is the percentage for 3 to 4 members, and 21.57 % is the percentage for 5 to 6 members as it is summerized in the above given Table 11.

Table 12. *Number of Independent Board Members*

Response Choices	Response Percentage	Response Number
None	29.41%	45
1 - 2 members	41.83%	64
3 - 4 members	25.49%	39
5 - 6 members	1.31%	2
7 members and above	1.96%	3
		153

Table 12. shows the number of Independent Board Members. 41.83 % is the percentage for 1 to 2 Independent Board Members. Astonishingly, 29.41 % of the boards do not have any Independent Board Members.

Table 13. *Number of Women Board Members*

Response Choices	Response Percentage	Response Number
None	30.07%	46
1 - 2 members	46.41%	71
3 - 4 members	17.65%	27
5 - 6 members	3.27%	5
7 members and above	2.61%	4
		153

As depicted in the table above, 46.41 % of the boards have 1 to 2 women board members, and unfortunately, 30.07 % of the boards have none.

The third and last set is the result of the demographic questions about companies.

Table 14. *Company Type*

Response Choices	Response Percentage	Response Number
Public Company	45.10%	69
Non-public Company	54.90%	84
		153

In Table 14., data about the company type of the boards on which directors serve is summarized. According to it, 54.90 % is boards of non-public companies, and 45.10 % is boards of public companies. Unpredictably, the board members of board in non-public companies participated more in the study.

Table 15. *Company Size (Number of Employees)*

Response Choices	Response Percentage	Response Number
Micro (1 - 9 employess)	3.92%	6
Small (10 - 49 employees)	14.38%	22
Medium (50 - 249 employees)	23.52%	36
Big (250 employees and above)	58.17%	89
		153

As illustrated in Table 15., the board members of big companies that have 250 employees and above participated in this survey research. The response number is 89 and the response percentage is 58.17 %.

Table 16. *Company Size (Annual Net Sales Revenue)*

Response Choices	Response Percentage	Response Number
3 Million TL or less	5.23%	8
4 - 25 Million TL	9.80%	15
26 - 125 Million TL	16.99%	26
126 Million TL and above	67.97%	104
		153

The table above also depicts company size but in terms of annual net sales revenue. Similarly, board members of big companies with 125 million TL and above answered the questionnaire, and their response rate is 104 that equals 67.97 %.

Table 17. *Company Industry*

Response Choices	Response Percentage	Response Number
Banking and Capital Markets	17.65%	27
Government and Public	0.65%	1
Industrial Production	6.54%	10
Enery and Infrastructure	6.54%	10
Real Estate	7.74%	12
Media and Entertainment	0.65%	1
Metal and Mining	1.96%	3
Automotive	8.50%	13
Retail and Consumer Products	5.23%	8
Oil and Gas	2.61%	4
Health, Pharmaceutical and Life Sciences	8.50%	13
Insurance and Private Pension	1.31%	2
Transportation and Logistics	3.27%	5
Technology	5.23%	8
Telecommunication	0.65%	1
Tourism	1.96%	3
Asset and Wealth Management	0.65%	1
Other (please specify)	20.26%	31
		153

Table 17. is the last table exhibiting the demographic results of this study. From this table, it is clear that the board members of companies in a wide veriety of industries took part by answering the survey questionnaire. 20.26 % or 31 board members specified that they serve on boards of industries such as conglamorates, textile, furniture, construction etc. Then, 17.65 % or 27 board members answered that their company is in the banking and capital markets industry.

4.2 Measurement Model Testing Results

Since this is a survey research in which an on-line questionnaire with 6-point Likert type scale has been used, the measurement model is reflective. Consequently, the measurement model has been tested for internal consistency reliability, indicator reliability, convergent validity and discriminant validity (Hair, Ringle, & Sarstedt, 2011). Before presenting the measurement model testing results, it is a good idea to list the meanings of the abbreviations made for operating SmartPLS 3.0 software program, so these are displayed in Table 18.

Table 18. *Abbreviations of Constructs and Indicators*

Abbreviations	Meanings
bc	**b**oard **c**reativity
bd	**b**oard **d**iversity
bdefextiveinn	**b**oard **de**cisions **f**or **ex**ploita**tive inn**ovation
bdefextoryinn	**b**oard **de**cisions **f**or **ex**olora**tory inn**ovation
bmc	**b**oard **m**ember **c**reativity
bscc	**b**oard **s**ettings and **c**limate for **c**reativity

Note: Abbriviations used for operating SmartPLS 3.0

The first important set of results is the reliability of the indicators of each latent construct. The reliability of indicators is shown in the indicator loadings listed in the table below.

Table 19. *Indicator Loadings*

	Board Creativity	Board Diversity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Member Creativity	Board Settings and Climate for Creativity
bc1	**0.792**					
bc2	**0.886**					
bc3	**0.888**					
bc6	**0.739**					
bd1		**0.780**				
bd2		**0.830**				
bd3		**0.854**				
bd4		**0.830**				
bdefextiveinn2			**0.702**			
bdefextiveinn3			**0.797**			
bdefextiveinn4			**0.848**			
bdefextiveinn5			**0.873**			
bdefextoryinn1				**0.770**		
bdefextoryinn2				**0.777**		
bdefextoryinn3				**0.761**		
bdefextoryinn4				**0.800**		
bdefextoryinn5				**0.757**		
bdedextoryinn6				**0.792**		
bmc1					**0.736**	
bmc2					**0.781**	
bmc3					**0.812**	
bmc5					**0.733**	
bscc1						**0.807**
bscc2						**0.786**
bscc3						**0.708**
bscc4						**0.775**
bscc5						**0.761**
bscc6						**0.757**

Note: Indicator loadings > 0.70

As shown in Table 19. the indicator loadings are higher than 0.70, so the reliability of all indicators is acceptable. The indicators with less than 0.70

loadings were deleted. These are bc4, bc5, bd5, bmc4, bmc6, bdefextiveinn1 and bdefextiveinn6.

The second set of results are the significance or p values of the indicator loadings which are shown in the following table.

Table 20. *Indicator Loadings: Original Sample, Sample Mean, STDEV, T Statistics, P Values*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	**P Values**
bc1 <- Board Creativity	0.792	0.790	0.036	22.171	**0.000**
bc2 <- Board Creativity	0.886	0.885	0.019	46.236	**0.000**
bc3 <- Board Creativity	0.888	0.886	0.021	43.283	**0.000**
bc6 <- Board Creativity	0.739	0.737	0.052	14.340	**0.000**
bd1 <- Board Diversity	0.780	0.777	0.043	17.949	**0.000**
bd2 <- Board Diversity	0.830	0.828	0.033	25.480	**0.000**
bd3 <- Board Diversity	0.854	0.853	0.033	26.125	**0.000**
bd4 <- Board Diversity	0.830	0.828	0.035	23.972	**0.000**
bdefextiveinn2 <- Board Board Decisions for Exploitative Innovation	0.702	0.692	0.080	8.970	**0.000**
bdefextiveinn3 <- Board Board Decisions for Exploitative Innovation	0.797	0.791	0.050	15.842	**0.000**
bdefextiveinn4 <- Board Board Decisions for Exploitative Innovation	0.848	0.848	0.029	28.910	**0.000**
bdefextiveinn5 <- Board Board Decisions for Exploitative Innovation	0.873	0.874	0.019	45.733	**0.000**
bdefextoryinn1 <- Board Decisions for Exploratory Innovation	0.770	0.767	0.046	16.655	**0.000**
bdefextoryinn2 <- Board Decisions for Exploratory Innovation	0.777	0.774	0.042	18.387	**0.000**
bdefextoryinn3 <- Board Decisions for Exploratory Innovation	0.761	0.755	0.057	13.457	**0.000**
bdefextoryinn4 <- Board Decisions for Exploratory Innovation	0.800	0.801	0.036	22.052	**0.000**
bdefextoryinn5 <- Board Decisions for Exploratory Innovation	0.757	0.757	0.060	12.575	**0.000**
bdefextoryinn6 <- Board Decisions for Exploratory Innovation	0.792	0.791	0.036	21.768	**0.000**
bmc1 <- Board Member Creativity	0.736	0.733	0.065	11.385	**0.000**
bmc2 <- Board Member Creativity	0.781	0.775	0.054	14.398	**0.000**

bmc3 <- Board Member Creativity	0.812	0.810	0.034	23.828	**0.000**
bmc5 <- Board Member Creativity	0.733	0.732	0.059	12.407	**0.000**
bscc1 <- Board Settings and Climate for Creativity	0.807	0.805	0.030	26.584	**0.000**
bscc2 <- Board Settings and Climate for Creativity	0.786	0.787	0.034	23.166	**0.000**
bscc3 <- Board Settings and Climate for Creativity	0.708	0.704	0.050	14.296	**0.000**
bscc4 <- Board Settings and Climate for Creativity	0.775	0.773	0.041	18.909	**0.000**
bscc5 <- Board Settings and Climate for Creativity	0.761	0.758	0.046	16.629	**0.000**
bscc6 <- Board Settings and Climate for Creativity	0.757	0.753	0.042	18.068	**0.000**

Note: p values < 0.05

In Table 20. the p values of indicators' loadings are depicted. The p values of all indicators are significant.

The third set of results are the results of the validity and reliability of all latent constructs. The validity and realibility of all constructs are measured by four criteria which are Chronbach's Alpha, rho_A and Composite Reliability and Convergent Validity (AVE) presented in the tables below.

Table 21. *Construct Reliability and Validity*

	Cronbach's Alpha	rho_A	Composite Reliability	Avarege Variance Extracted
Board Creativity	**0.846**	**0.864**	**0.897**	**0.687**
Board Decisions for Exploitative Innovation	**0.829**	**0.880**	**0.882**	**0.652**
Board Decisions for Exploratory Innovation	**0.868**	**0.871**	**0.901**	**0.603**
Board Diversity	**0.842**	**0.845**	**0.894**	**0.679**
Board Members Creativity	**0.768**	**0.774**	**0.850**	**0.587**
Board Settings and Climate for Creativity	**0.860**	**0.865**	**0.895**	**0.587**

Note: Cronbach's Alpha > 0.70, rho_A > 0.70, CR > 0.70, AVE > 0.50

As depicted in Table 21., the reliability of all latent constructs measured by Cronbach's Aplpha, rho_A and Composite Reliability are higher than 0.70. The construct validity also known as convergent validity measured by the Average

Variance Extracted (AVE) is higher that 0.50. Shortly, all latent constructs in this study have acceptable realibility and validity.

Another set of results are the discriminant validity estimated by indicator cross loadings, Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio (HTMT) as shown in the tables below.

Table 22. *Indicator Cross Loadings*

	Board Creativity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Diversity	Board Member Creativity	Board Settings and Climate for Creativity
bc1	**0.792**	0.261	0.299	0.484	0.199	0.472
bc2	**0.886**	0.434	0.511	0.519	0.310	0.594
bc3	**0.888**	0.418	0.497	0.549	0.286	0.628
bc6	**0.739**	0.301	0.396	0.395	0.234	0.562
bdefextiveinn2	0.234	**0.702**	0.477	0.318	0.104	0.141
bdefextiveinn3	0.341	**0.797**	0.366	0.338	0.128	0.216
bdefextiveinn4	0.390	**0.848**	0.526	0.330	0.334	0.339
bdefextiveinn5	0.403	**0.873**	0.620	0.341	0.355	0.334
bdefextoryinn1	0.424	0.439	**0.770**	0.270	0.317	0.336
bdefextoryinn2	0.486	0.575	**0.777**	0.240	0.302	0.492
bdefextoryinn3	0.318	0.509	**0.761**	0.280	0.335	0.335
bdefextoryinn4	0.469	0.512	**0.800**	0.370	0.328	0.387
bdefextoryinn5	0.387	0.443	**0.757**	0.250	0.324	0.458
bdefextoryinn6	0.329	0.427	**0.792**	0.261	0.352	0.399
bd1	0.455	0.335	0.336	**0.780**	0.105	0.325
bd2	0.446	0.370	0.313	**0.830**	0.153	0.271
bd3	0.494	0.261	0.226	**0.854**	0.189	0.322
bd4	0.541	0.364	0.314	**0.830**	0.219	0.381
bmc1	0.283	0.199	0.265	0.089	**0.736**	0.241
bmc2	0.210	0.168	0.278	0.083	**0.781**	0.199
bmc3	0.261	0.281	0.318	0.186	**0.812**	0.337
bmc5	0.210	0.299	0.400	0.233	**0.733**	0.230
bscc1	0.599	0.293	0.396	0.385	0.275	**0.807**
bscc2	0.532	0.264	0.441	0.285	0.321	**0.786**
bscc3	0.415	0.208	0.369	0.179	0.197	**0.708**
bscc4	0.533	0.216	0.414	0.228	0.298	**0.775**
bscc5	0.557	0.354	0.382	0.448	0.205	**0.761**
bscc6	0.486	0.220	0.376	0.257	0.234	**0.757**

Note: An indicator's loadings > all of its cross loadings

Table 22. depicts the indicator's loadings which are higher than all of its cross loadings, so there is a discriminant validity among all indicators.

Table 23. *Fornell-Larcker Criterion*

	Board Creativity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Diversity	Board Members Creativity	Board Settings and Climate for Creativity
Board Creativity	**0.829**					
Board Decisions for Exploitative Innovation	0.438	**0.808**				
Board Decisions for Exploratory Innovation	0.524	0.626	**0.776**			
Board Diversity	0.590	0.405	0.361	**0.824**		
Board Members Creativity	0.315	0.320	0.419	0.205	**0.766**	
Board Settings and Climate for Creativity	0.685	0.342	0.517	0.397	0.336	**0.766**

Note: The AVE of each latent construct > the construct's highest squared correlation with any other latent construct

As shown in Table 23., AVE of each latent construct is higher than the construct's highest squared correlation with any other latent construct, and this is the so-called Fornell-Larcker criterion.

Table 24. *Heterotrait-Monotrait Ratio (HTMT)*

	Board Creativity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Diversity	Board Member Creativity	Board Settings and Climate for Creativity
Board Creativity						
Board Decisions for Exploitative Innovation	**0.493**					
Board Decisions for Exploratory Innovation	**0.593**	**0.718**				
Board Diversity	**0.694**	**0.487**	**0.418**			
Board Members Creativity	**0.384**	**0.341**	**0.504**	**0.236**		
Board Settings and Climate for Creativity	**0.792**	**0.369**	**0.598**	**0.452**	**0.401**	

Note: HTMT < 0.80

Table 24. illustrates the Heterotrait-Monotrait Ratio (HTMT) of each latent construct. All results are smaller than 0.80, so they are acceptable.

To sum up, as suggested by Hair, Ringle, and Sarstedt (2011), the estimated results of the internal consistency reliability, indicator reliability, convergent validity and discriminant validity of all the constructs in the reflective measurement model of this empirical research are significant. Stated differently, based on PLS-SEM assessment results, the measurement model of the research in this PhD thesis is significant, and this is important prior to testing the structural model.

4.3 Structural Model Testing Results

In PLS-SEM, the structural model shows the relationships or paths between the latent constructs. PLS-SEM permits recursive relationships in the structural model. In other words, no causal loops are permitted, so the structural paths between the latent constructs can only head in one single direction. In the structural model, there are exogenous and endogenous constructs. On one hand, the term exogenous is used to describe latent constructs which do not have any structural path relationships pointing at them. On the other hand, the term endogenous describes latent target constructs in the structural model that are explained by other constructs via structural model relationships (Hair, Ringle, & Sarstedt, 2011).

The structural model in this research has been tested and presened by using the guidelines provided by Hair, Ringle and Sarstedt (2011). They suggest

measures such as R^2 values, path coefficients' significance, predictive values (Q^2) and heterogeneity. Later, Hair, Risher, Sarstedt and Ringle (2019) write about the robustness of the structural model, and they suggest the same measures and also VIF. The values of all of these measures have been estimated, and their results are presented in the following tables.

The first set of resuts are the measures of Collinearity Statistics (VIF).

Table 25. *Collinearity Statistics (Inner VIF)*

	Board Creativity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Diversity	Board Member Creativity	Board Settings and Climate for Creativity
Board Creativity		**1.917**	**1.633**			
Board Decisions for Exploitative Innovation						
Board Decisions for Exploratory Innovation						
Board Diversity	**1.195**		**1.535**			
Board Members Creativity	**1.135**	**1.145**	**1.111**	**1.000**		**1.000**
Board Settings and Climate for Creativity	**1.290**	**1.945**				

Note: VIF < 5

The results of Inner VIF are smaller than 5, so all of them are acceptable as it is depicted in Table 25.

The results in the table below show the path coefficients between the latent constructs of the proposed research model as exposed in Figure 10.

Table 26. *Path Coefficients*

	Board Creativity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Diversity	Board Member Creativity	Board Settings and Climate for Creativity
Board Creativity		0.354	0.396			
Board Decisions for Exploitative Innovation						
Board Decisions for Exploratory Innovation						
Board Diversity	0.372		0.069			
Board Members Creativity	0.066	0.194	0.280	0.205		0.336
Board Settings and Climate for Creativity	0.516	0.032				

Note: All path coefficients indicate positive relationship between constructs

As depicted in Table 26., the path coefficients indicate positive relationships between constructs.

The next set of results are about R^2 shown in the table below.

Table 27. *R Square (R^2)*

	R Square (R^2)
Board Creativity	**0.594**
Board Decisions for Exploitative Innovation	**0.227**
Board Decisions for Exploratory Innovation	**0.350**
Board Diversity	**0.042**
Board Settings and Climate for Creativity	**0.113**

Note: R^2 of 0.75, 0.50, or 0.25, described as substantial, moderate or weak, respectively.

In Table 27., the value of R square (R^2) of the endogenous latent constructs are shown. The endogeneous latent constructs in the structural model are board settings and climate for creativity, board diversity, board creativity, board decisions for exploitative innovation and board decisions for exploratory innovation. The R^2 value of board creativity is 0.594, so it is moderate. The R^2 values of the other constucts are weak.

As suggested by Doğan (2019), the next set of results are the results of f square (f^2).

Table 28. *f square (f^2)*

	Board Creativity	Board Decisions for Exploitative Innovation	Board Decisions for Exploratory Innovation	Board Diversity	Board Member Creativity	Board Settings and Climate for Creativity
Board Creativity		0.085	0.148			
Board Decisions for Exploitative Innovation						
Board Decisions for Exploratory Innovation						
Board Diversity	0.285		0.005			
Board Members Creativity	0.009	0.042	0.109	0.044		0.127
Board Settings and Climate for Creativity	0.508	0.001				

Note: f^2 of 0.35, 0.15, or 0.02, described as substantial, moderate or weak, respectively.

The result of f^2 for board creativity and board settings and climate for creativity is substancial since its f square ($f^2 = 0.508$) is bigger than 0.35. The results of f^2 for board creativity and board diversity, board decisions for exploratory innovation and board creativity, board settings and climate for creativity and board member creativity are moderate. The remaining f^2 values are weak.

The next set of results is the measurement of the Construct Crossvalidated Redundancy (Q^2).

Table 29. *Construct Crossvalidated Redundancy (Q^2)*

	SSO	SSE	**Q^2 (=1-SSE/SSO)**
Board Creativity	612.000	381.514	**0.377**
Board Decisions for Exploitative Innovation	612.000	538.957	**0.119**
Board Decisions for Exploratory Innovation	918.000	746.684	**0.187**
Board Diversity	612.000	599.727	**0.020**
Board Settings and Climate for Creativity	918.000	863.957	**0.059**
Board Members Creativity	612.000	612.000	

Note: $Q^2 > 0$ indicate that the exogenous constructs have predictive relevance for the endogenous constructs

Table 29. shows Q^2 values which are larger than 0, so this indicates that board creativity, board decisions for exploitative innovation and board decisions for exploratory innovation, board diversity and board settings and climate for creativity have predictive relevance. Only the Q^2 of board member's creativity is not estimated, so it does not have a predictive value.

The following set of results are path coefficients that are the t values and p values.

Table 30. *Path Coefficients: Original Sample, Sample Mean, STDEV, T Statistics, P Values*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	**T Statistics (|O/STDEV|)**	**P Values**
Board Creativity -> Board Decisions for Exploitative Innovation	0.354	0.333	0.164	**2.164**	**0.030**
Board Creativity -> Board Decisions for Exploratory Innovation	0.396	0.398	0.074	**5.364**	**0.000**
Board Diversity -> Board Creativity	0.372	0.364	0.082	**4.551**	**0.000**
Board Diversity -> Board Decisions for Exploratory Innovation	0.069	0.071	0.090	0.770	0.441
Board Member Creativity -> Board Creativity	0.066	0.067	0.063	1.046	0.296
Board Member Creativity -> Board Decisions for Exploitative Innovation	0.194	0.211	0.107	1.808	0.071
Board Member Creativity -> Board Decisions for Exploratory Innovation	0.280	0.285	0.077	**3.617**	**0.000**
Board Member Creativity -> Board Diversity	0.205	0.215	0.087	**2.361**	**0.018**
Board Member Creativity -> Board Settings and Climate for Creativity	0.336	0.346	0.075	**4.501**	**0.000**
Board Settings and Climate for Creativity -> Board Creativity	0.516	0.522	0.063	**8.236**	**0.000**
Board Settings and Climate for Creativity -> Board Decisions for Exploitative Innovation	0.032	0.055	0.146	0.221	0.825

Note: t values > 1.96, p values < 0.05

In Table 30., the t values and p values are shown. From the 11 path coefficients, 7 are significant, and 4 are insignificant.

In conclusion, all estimated values such as R^2, path coefficients' significance, predictive values (Q^2) and heterogeneity and VIF of the structural model in this research are significant (Hair, Risher, Sarstedt, & Ringle, 2019). Consequently, the acceptable robustness of the structural model is critical before testing the proposed hypotheses.

4.4 Hypotheses Testing Results

The results of the hypotheses testing are also presented in three sets. These are direct hypotheses testing results, mediation hypotheses testing results and moderation hypotheses testing results.

The first set of results are the results of testing the direct hypotheses. They are depicted in the following table.

Table 31. *Direct Correlation Hypotheses: P Values*

Hypotheses	**P Values**	**Results**
Board Settings and Climate for Creativity -> Board Creativity	**0.000**	**H1 supported**
Board Member Creativity -> Board Creativity	0.296	H2 rejected
Board Diversity -> Board Creativity	**0.000**	**H3 supported**
Board Settings and Climate for Creativity -> Board Decisions for Exploitative Innovation	0.825	H4 rejected
Board Diversity -> Board Decisions for Exploratory Innovation	0.441	H5 rejected

Note: p values < 0.05

According to the results in Table 31., hypothesis one and three are supported because the p values are significant. There is a direct correlation between board settings and climate for creativity and board creativity. Also, as stated in hypothesis three, there is a direct correlation between board diversity and board

creativity. On the other hand, hypothesis 2 is rejected because p=0.296, so p is insignificant. Since the value of p is insignificant for hypotheses 4 and 5, they are also rejected.

The second set of results are the results of testing the mediation hypotheses. They are shown in Table 32.

Table 32. *Mediation Hypotheses: P Values*

Hypotheses	**P Values**	**Results**
Board Member Creativity -> Board Settings and Climate for Creativity	**0.000**	**full mediation**
Board Settings and Climate for Creativity -> Board Creativity	**0.000**	**H6 supported**
Board Member Creativity -> Board Creativity	0.296	partial mediation
Board Creativity -> Board Decisions for Exploitative Innovation	0.030	H7 rejected
Board Member Creativity -> Board Creativity	0.296	partial mediation
Board Creativity -> Board Decisions for Exploratory Innovation	0.000	H8 rejected
Board Member Creativity -> Board Diversity	**0.018**	**full mediation**
Board Diversity -> Board Creativity	**0.000**	**H9 supported**
Board Settings and Climate for Creativity -> Board Creativity	**0.000**	**full mediation**
Board Creativity -> Board Decisions for Exploitative Innovation	**0.030**	**H10 supported**
Board Diversity -> Board Creativity	**0.000**	**full mediation**
Board Creativity -> Board Decisions for Exploratory Innovation	**0.000**	**H11 supported**

Note: p values < 0.05

Based on the results depicted in Table 32., the first mediation hypothesis (*H6: Board settings and climate for creativity mediate the relationship between board member creativity and board creativity)* is supported. On the other hand, the second mediation hypothesis (*H7: Board creativity mediates the relationship between board member creativity and board decisions for exploitative innovation)* is rejected since there is only a partial mediation. Similarly, for the

next hypothesis that is H8 there is partial mediation, so it is rejected. In other words, board creativity does not mediate the relationship between board member creativity and board decisions for exploratory innovation.

The next hypothesis, *H9: Board diversity mediates the relationship between board member creativity and board creativity.* This hypothesis is also supported because there is full mediation. According to *H10: Board creativity mediates the relationship between board settings and climate for creativity and board decisions for exploitative innovation.* Because of the full mediation, this one is supported as well. Next, *H11: Board creativity mediates the relationship between board diversity and decisions for exploratory innovation.* The last mediation hypothesis is also supported since there is full mediation.

The next set of results are the results of testing the moderation hypotheses. They are depicted in the following tables. The board context or the factors in the external environment such as technology turbulence, market turbulence and competitive intensity have been tested as moderating constructs in this study.

Table 33: *Technology Moderation Hypotheses: P Values*

Hypotheses	**P Values**	**Results**
Moderating Effect -> Board Decisions for Exploitative Innovation	**0.051**	H12 rejected
Technology Turbulence -> Board Decisions for Exploitative Innovation	0.506	
Moderating Effect -> Board Decisions for Exploratory Innovation	**0.484**	H13 rejected
Technology Turbulence -> Board Decisions for Exploratory Innovation	0.189	

Note: p values < 0.05

Table 33. shows the moderating effect of technology turbulence. The hypothesis *H12: Technology turbulence moderates the relationship between board creativity and board decisions for exploitative innovation* is rejected. Similarly, the next

hypothesis that is *H13: Technology turbulence moderates the relationship between board creativity and board decisions for exploratory innovation* is also rejected.

Table 34. *Market Turbulence Moderation Hypotheses: P Values*

Hypotheses	**P Values**	**Results**
Moderating Effect -> Board Decisions for Exploitative Innovation	**0.435**	H14 rejected
Market Turbulence -> Board Decisions for Exploitative Innovation	0.085	
Moderating Effect -> Board Decisions for Exploratory Innovation	**0.484**	H15 rejected
Market Turbulence -> Board Decisions for Exploratory Innovation	0.078	

Note: p values < 0.05

Table 34. shows the moderating effect of market turbulence. *H14: Market turbulence moderates the relationship between board creativity and board decisions for exploitative innovation. H15: Market turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.* Both of these hypotheses are rejected because of the insignificant p values.

Table 35. *Competitive Intensity Moderation Hypotheses: P-Values*

Hypotheses	**P Values**	**Results**
Moderating Effect -> Board Decisions for Exploitative Innovation	**0.001**	**H16 supported**
Competitive Intensity -> Board Decisions for Exploitative Innovation	0.463	
Moderating Effect -> Board Decisions for Exploratory Innovation	**0.418**	H17 rejected
Competitive Intensity -> Board Decisions for Exploratory Innovation	0.233	

Note: p values < 0.05

Table 35. illustrates the moderating effect of competitive intensity. The hypothesis which states that *competitive intensity moderates the relationship between board creativity and board decisions for exploitative innovation* is supported, whereas the next one that is hypothesis 17 is rejected. In other words, competitive intensity

does not moderate the relationship between board creativity and board decisions for exploratory innovation.

By combining the above disussed three external environmental factors, which are technology turbulence, market turbulence and competitive intensity, a new latent construct the so-called external environment or the board context has been created and statistically evaluated.

Table 36. *Board Context or External Environent Moderation Hypotheses: P Values*

Hypotheses	**P Values**	**Results**
Moderating Effect -> Board Decisions for Exploitative Innovation	**0.002**	**H18 supported**
External Environment -> Board Decisions for Exploitative Innovation	0.158	
Moderating Effect -> Board Decisions for Exploratory Innovation	**0.271**	H19 rejected
External Environment -> Board Decisions for Exploratory Innovation	0.178	

Note: p values < 0.05

Table 36. illustrates the moderating effect of the external environment or the board context as the sum of the three environmental factors that are technology turbulence, market turbulence and competitive intensity. According to *H18: External environment moderates the relationship between board creativity and board decisions for exploitative innovation.* This hypothesis is supported. However, the next one *H19: External environment moderates the relationship between board creativity and board decisions for exploratory innovation* is rejected. Stated differently, the external environment does not moderate the relationship between board creativity and board decisions for exploratory innovation.

Table 37. *Summary of All Hypotheses Testing Results*

Hypotheses	**Results**
H1: Board settings and climate for creativity have a direct influence on board creativity.	**H1 supported**
H2: Board member creativity has a direct influence on board creativity.	H2 rejected
H3: Board diversity has a direct influence on board creativity.	**H3 supported**
H4: Board settings and climate for creativity have a direct influence on board decisions for exploitative innovation	H4 rejected
H5: Board diversity has a direct influence on board decisions for exploratory innovation.	H5 rejected
H6: Board settings and climate for creativity mediate the relationship between board member creativity and board creativity.	**H6 supported**
H7: Board creativity mediates the relationship between board member creativity and board decisions for exploitative innovation.	H7 rejected
H8: Board creativity mediates the relationship between board member creativity and board decisions for exploratory innovation.	H8 rejected
H9: Board diversity mediates the relationship between board member creativity and board creativity.	**H9 supported**
H10: Board creativity mediates the relationship between board settings and climate for creativity and board decisions for exploitative innovation.	**H10 supported**
H11: Board creativity mediates the relationship between board diversity and decisions for exploratory innovation.	**H11 supported**

H12: Technology turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.	H12 rejected
H13: Technology turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.	H13 rejected
H14: Market turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.	H14 rejected
H15: Market turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.	H15 rejected
H16: Competitive intensity moderates the relationship between board creativity and board decisions for exploitative innovation.	**H16 supported**
H17: Competitive intensity moderates the relationship between board creativity and board decisions for exploratory innovation.	H17 rejected
H18: External environment moderates the relationship between board creativity and board decisions for exploitative innovation.	**H18 supported**
H19: External environment moderates the relationship between board creativity and board decisions for exploratory innovation.	H19 rejected

Table 37. is the summary table of all hypotheses testing results. In summary, according to the research results, 8 of the 19 hypotheses have been supported while the remaining 11 hypotheses have been rejected.

4.5 Effects Tesing Results

The SmartPLS 3.0 software has the operational capacity to estimate effects. In the following tables, the results of total effects, total indirect effects and specific indirect effects.

Table 38. *Total Effects: Original Sample, Sample Mean, STDEV, T Statistics, P Values*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	**P Values**
Board Creativity -> Board Decisions for Exploitative Innovation	0.354	0.333	0.164	2.164	**0.030**
Board Creativity -> Board Decisions for Exploratory Innovation	0.396	0.398	0.074	5.364	**0.000**
Board Diversity -> Board Creativity	0.372	0.364	0.082	4.551	**0.000**
Board Diversity -> Board Decisions for Exploitative Innovation	0.132	0.130	0.082	1.612	0.107
Board Diversity -> Board Decisions for Exploratory Innovation	0.217	0.216	0.075	2.877	**0.004**
Board Member Creativity -> Board Creativity	0.315	0.324	0.081	3.912	**0.000**
Board Member Creativity -> Board Decisions for Exploitative Innovation	0.316	0.333	0.104	3.036	**0.002**
Board Member Creativity -> Board Decisions for Exploratory Innovation	0.419	0.431	0.065	6.424	**0.000**
Board Member Creativity -> Board Diversity	0.205	0.215	0.087	2.361	**0.018**
Board Member Creativity -> Board Settings and Climate for Creativity	0.336	0.346	0.075	4.501	**0.000**
Board Settings and Climate for Creativity -> Board Creativity	0.516	0.522	0.063	8.236	**0.000**
Board Settings and Climate for Creativity -> Board Decisions for Exploitative Innovation	0.215	0.224	0.092	2.350	**0.019**
Board Settings and Climate for Creativity -> Board Decisions for Exploratory Innovation	0.204	0.208	0.047	4.307	**0.000**

Note: p values < 0.05

In Table 38., the total effects are shown. Only one of the total effects is not significant because its p values is 0.107. Stated differently, board diversity does not have a total effect on board decisions for exploitative innovation.

Table 39. *Total Indirect Effects: Original Sample, Sample Mean, STDEV, T Statistics, P Values*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	**P Values**

Board Creativity -> Board Decisions for Exploitative Innovation					
Board Creativity -> Board Decisions for Exploratory Innovation					
Board Diversity -> Board Creativity					
Board Diversity -> Board Decisions for Exploitative Innovation	0.132	0.130	0.082	1.612	0.107
Board Diversity -> Board Decisions for Exploratory Innovation	0.147	0.145	0.041	3.560	**0.000**
Board Member Creativity -> Board Creativity	0.249	0.257	0.059	4.253	**0.000**
Board Member Creativity -> Board Decisions for Exploitative Innovation	0.123	0.122	0.041	3.006	**0.003**
Board Member Creativity -> Board Decisions for Exploratory Innovation	0.139	0.146	0.047	2.967	**0.003**
Board Member Creativity -> Board Diversity					
Board Member Creativity -> Board Settings and Climate for Creativity					
Board Settings and Climate for Creativity -> Board Creativity					
Board Settings and Climate for Creativity -> Board Decisions for Exploitative Innovation	0.183	0.169	0.079	2.302	**0.021**
Board Settings and Climate for Creativity -> Board Decisions for Exploratory Innovation	0.204	0.208	0.047	4.307	**0.000**

Note: p values < 0.05

In Table 39., the total indirects effects are depicted. Six of the p values are significant, so there are six total indirect effects there. Only one of the p values is insignificant, so there is not total indirect effect between these constructs. In other words, there is no total indirect effect between board diversity and board decisions for exploitative innovation.

Table 40. *Specific Indirect Effects: Original Sample, Sample Mean, STDEV, T Statistics, P Values*

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	**P Values**
Board Member Creativity -> Board Diversity -> Board Creativity	0.076	0.075	0.030	2.503	**0.012**
Board Member Creativity -> Board Settings and Climate for Creativity -> Board Creativity	0.173	0.182	0.047	3.657	**0.000**
Board Diversity -> Board Creativity -> Board Decisions for Exploitative Innovation	0.132	0.130	0.082	1.612	0.107
Board Member Creativity -> Board Diversity -> Board Creativity -> Board Decisions for Exploitative Innovation	0.027	0.025	0.016	1.684	0.092

Board Member Creativity -> Board Creativity -> Board Decisions for Exploitative Innovation	0.023	0.020	0.023	0.996	0.319
Board Settings and Climate for Creativity -> Board Creativity -> Board Decisions for Exploitative Innovation	0.183	0.169	0.079	2.302	**0.021**
Board Member Creativity -> Board Settings and Climate for Creativity -> Board Creativity -> Board Decisions for Exploitative Innovation	0.061	0.059	0.032	1.918	0.055
Board Member Creativity -> Board Settings and Climate for Creativity -> Board Decisions for Exploitative Innovation	0.011	0.019	0.052	0.210	0.834
Board Diversity -> Board Creativity -> Board Decisions for Exploratory Innovation	0.147	0.145	0.041	3.560	**0.000**
Board Member Creativity -> Board Diversity -> Board Creativity -> Board Decisions for Exploratory Innovation	0.030	0.030	0.014	2.198	**0.028**
Board Member Creativity -> Board Creativity -> Board Decisions for Exploratory Innovation	0.026	0.027	0.026	1.004	0.315
Board Settings and Climate for Creativity -> Board Creativity -> Board Decisions for Exploratory Innovation	0.204	0.208	0.047	4.307	**0.000**
Board Member Creativity -> Board Settings and Climate for Creativity -> Board Creativity -> Board Decisions for Exploratory Innovation	0.069	0.073	0.024	2.866	**0.004**
Board Member Creativity -> Board Diversity -> Board Decisions for Exploratory Innovation	0.014	0.017	0.022	0.633	0.527

Note: p values < 0.05

The specific indirects effects are illustrated in Table 40. Seven of the p values are significant. Stated differently, there is a specific indirect effect among these constructs. Besides, seven of the p values are insignificant, so there is no specific indirect effect among these constructs.

5 DISCUSSION

Today, corporate boards or boards of directors have to transform their companies into organizations which are able to cope with the turbulence and complexity in the external environment which forms the current turbulent and complex board context. As a result, a different type of corporate governance is essential. This different type of corporate governance can be achieved by corporate boards or board directors who add value through their creativity in order to direct their organizations for innovation, and all these subject areas require further academic research.

Based on the above stated ideas, the research problem in the present PhD thesis is that there is a need for empirically exploring and explaining the relationships among board settings and climate for creativity, board member's creativity, board creativity, board diversity, the board context or the external environmental and board decisions for innovation ambidexterity.

Consequently, the foremost research purpose of this thesis is to expore and describe corporate boards, board members and board processes so as to bridge a theoretical gap that needs to be filled with academic research by investigating these, and hopefully, the empirical findings of this quantitative research will shed some light on these.

This research purpose is achieved by answering some research questions. In other words, the answers to these questions are found by designing an exploratory and descriptive research, proposing a research model and hypotheses for examining the relationships among the settings and climate for creativity, board member's creativity, board creativity, board diversity, technology turbulence, market

turbulence and competitive intensity and their relationships to board decisions for exploitative innovation and exploratory innovation.

After presenting all the research results of the present research, here its discussion should be done. The discussion chapter is organized in four parts. Firstly, the research interpretations are discussed. Then, the research implications are written. After that the limitations of the present research are stated. Finally, some recommendations for further research are made.

5.1 Interpretations

The results of the hypotheses testing of this research are used to answer the main and specific research questions stated in the introduction chapter of this thesis. What is the relationship between board creativity and board decisions for innovation ambidexterity? This is the key research question. According to the empirical results from this quantitative research, the answer to this question is that there is an indirect and complex relationship between board creativity and board decisions for innovation ambidexterity since other constructs are involved, and they play mediating and moderating role in this indirect and complex relationship.

In order to understand this indirect and complex relationship many specific research questions have been stated and answered with the help of the results from this study. What are the main factors in board creativity? This is the first specific research question, and its answer is based on the research results. The main factors in board creativity are board settings and climate for creativity, board member creativity and board diversity. Apart from board member creativity, the "driver" factors are board settings and climate for creativity ad board diversity.

Climate has been theorized in relation to a particular result such as creativity or safety and unit of analysis like a department or team as discussed by Katz-Navon, Naveh and Stern (2005), and Schneider, Smith, Taylor and Fleenor (1998). Based on these ideas, theoretically the corporate board is a team which has its own unique settings and climate for creativity. Team social interaction processes form the shared perception of creativity, so its norms arise from the creative behaviors of one of the members in the team (Gong, Kim, Lee, & Zhu, 2013). Consequently, actions and reactions among people shape the climate (Morgeson & Hofmann, 1999), so a board member's creative actions and the reactions of the other board members form the board settings and climate for creativity.

The board settings and climate for creativity have not been studied empirically yet. That is why board settings and climate and board creativity are empirically studied in this thesis. The result is that board settings and climate for creativity is a very imperative "driver" for board creativity because there is a direct correlation between these two constructs since the first hypothesis is supported. According to it, *board settings and climate for creativity have a direct influence on board creativity,* so it is a key factor in board creativity. This is also the answer of the specific question that states "what is the role of board settings and climate for creativity in board creativity". The role of board settings and climate for creativity is direct and very powerful.

Although studies such as Anderson, De Dreu, and Nijstad (2004) and Woodman, Sawyer, and Griffin (1993) acknowledge the fact that creativity is a multiple level phenomenon, considerable amount of preceding research has shown the tendency to inspect creativity at only one or a single level. However, recent research

is quickly evolving on multiple levels by studying the cross-level associations between individual creativity and team properties as it is conferred by Shin, Kim, Lee and Bian (2012), and Liao, Liu and Loi (2010). Actually, Gong, Kim, Lee, and Zhu (2013), underline that creative individual efforts will be integrated to form team creativity. Based on this combination of two creativity levels, they have asked whether individual level creativity relates to team level creativity, and if they relate how they do so (Gong, Kim, Lee, & Zhu, 2013).

In the present thesis, similar questions have been asked about the two levels of creativity on corporate boards, and they have been empirically tested in the second hypothesis which is rejected. In other words, board member creativity does not directly influence board creativity. This actually, proves the idea that settings and climate for creativity within the boardroom are critical, and when they are missing as in the case of the second hypothesis, individual level or board member's creativity does not impact team level or board creativity. There is not a direct relationship, but a mediating one which is tested in another hypothesis.

Unlike the limited empirical research in the corporate governance and board literature about board settings and climate for creativity, board member creativity and board creativity, there is a too much research about board diversity. Diversity with its many dimensions such as age, functional background, relational skills etc. is the heterogeneity among board members (Van Knippenberg, De Dreu, & Homan, 2004), and it is one of the most studied topics in the corporate governance and board research. Earlier board diversity studies such as Maznevski (1994), Pelled (1996), Boeker (1997), Watson, Johnson and Merritt (1998), and Kilduff, Angelmar and Mehra (2000) classically follow two divisions that are the observable or demographic diversity like board members' race, ethnicity, gender and age and the

non-observable or cognitive diversity such as values, affection, perception and knowledge.

More recently, Torchia, Calabro and Morners (2015) state that board diversity research has been mostly examining the relation between demographic, "surface-level" or observable diversity and the performance of a board or company, but despite this research prevalence, a new paradigm in corporate board research, for example studies like Harrison, Price, Gavin and Florey (2002), Harrison, Price and Bell (1998), and Jehn, Chadwick and Thatcher (1997) based on the enquiry of "deep-level", the non-observable or cognitive diversity, is evolving.

Other researchers, namely Miller and Triana (2009), Kang, Cheng and Gray (2007), and Goodstain, Gautam and Boeker (1994) have associated board diversity with cognitive outcomes such as new ideas, insights, creativity and innovation. The cognitive diversity research is gaining more attention because diverse team members have the ability to perceive problems from many different perspectives, so this results in an extensive variety of solutions and consequences (Robinson & Dechant, 1997). For instance, a study shows that the advantages of diversity such as broad information gathering and decision creativity compensate for some main disadvantages of diversity like conflicts slowness in action and decision-making (Hambrick, Cho, & Chen, 1996).

Besides, an active and extensive research stream on the outcomes of team diversity has indicated that diversity has led to more creative problem solving and better-quality decision making (Pelled, Eisenhardt, & Xin, 1999). Moreover, quite a few studies conducted by Erhardt, Werbel and Schrader (2003), and Watson, Kumar and Michaelson (1993) propose that board diversity rises the search for information, brings a wide range of standpoints, improves the quality of brainstormed ideas,

enables creativity and produces more strategic alternatives. Moreover, other studies such as Carter et al., (2003) and Siciliano (1996) found out that board diversity delivers benefits like effective problem solving and greater creativity, both of which are essential for organizational innovation.

More specifically, in another study it is claimed that diversity in educational background and personality endorses problem-solving ability and creativity (Latimer, 1998). Also, in a research with a sample of 385 medium-large Norwegian companies, the results indicate a positive relationship between board members' diversity in personality and background, and the level of creativity and cognitive conflict in the board decision-making process (Torchia, Calabro, & Morner, 2015). Similarly, in the qualitative research of this thesis, board creativity and its relation to board diversity are examined, and according to the empirically supported third hypothesis *board diversity has a direct influence on board creativity.* Stated differently, board diversity influences board creativity since there is a significant relationship between them. Shortly, the role of board diversity is very critical for board creativity.

Letendre (2004) and Simons, Pelled and Smith (1999) underline the idea that creativity is a vital component for comprehending board working style. In order to understand the board working style, the relationship between board creativity and decisions for innovation ambidexterity are studied in this thesis. Firstly, the direct relationships between board creativity and decisions for innovation are explored by stating hypothesis 4 and hypothesis 5. Later, some mediation and moderation hypotheses realated with board creativity and decisions for ambidexterity are also empirically tested, and the are going to be discussed as well.

Since March's inspiring research in 1991, studies have tried to explain the tension between exploitation which is the effort of maximizing efficiency and productivity, and exploration that is the concentration on learning, creativity and innovation (Rosing, Frese, & Bausch, 2011). As a result, some scholars like Gibson and Birkinshaw (2004), and He and Wong (2004) claime that sustained organizational performance is entrenched in exploiting prevailing capabilities and exploring novel opportunities

The basic supposition of a conceptual model developed by Jansen, Vera and Crossan (2009) is that by demonstrating behaviors which enhance control, stability, risk-taking and creativity, top managers are able to support exploitative and exploratory innovations as discussed by Vera and Crossan (2004), and Denison, Hooijberg and Quinn (1995). However, how do they do so? How do top manageres like board directors behaving creatively support exploitative and exploratory innovations?

Based on these ideas, in this thesis it is proposed that boards and board members should have the creative ability to engage in innovation ambidexterity by simultaneously making decisions for exploitative innovation and decisions for exploratory innovation so as to ensure short term company performance for profitability and long-term company performance for sustainability.

Consequently, some direct relationships between boards and their decisions for innovation are empirically tested here. According to the research results, hypothesis 4 is rejected. In other words, board settings and climate for creativity do not have a direct influence on board decisions for exploitative innovation. Similarly, hypothesis 5 is rejeced. Thus, board diversity does not have a direct impact on board decisions for exploratory innovation.

When the results of testing the mediation hypotheses are considered, there are very interesting points to discuss. Firstly, there is full mediation of board settings and climate for creativity in the relationship between board member's creativity and board creativity. Previously, the direct relationship between board member creativity and board creativity was rejected, but when the board settings and climate for creativity are included as a mediating factor in the proposed research model, hypothesis 6 is supported.

In other words, the board member creativity affects board creativity only under the availability of board settings and climate for creativity which enhance board creativity. This finding is very important, and it is aligned with the theoretical supposition that a supportive climate for creativity might boost team creativity, and hence it can act as the process connecting two levels of creativity that are individual creativity and team creativity (Gong, Kim, Lee, & Zhu, 2013). This supposition has been empirically proven by the finding that board settings and climate for creativity mediate the relationship between board member creativity and board creativity.

Scholars like Jaskyte (2009), and Wu and Lee (2007) indicate that the board of directors can affect organizational innovation. For instance, board of directors' support for innovation is very critical not only for board performance, but also for the performance of all executives and the organization as a whole. Furthermore, it is obvious that they can contribute, yet board of directors' impact on innovation is not researched in detail, and that is why this still remains indistinct (Jaskyte, 2012). With the empirical study in this thesis, effects of boards on innovation are investigated. Jaskyte (2012) emphasizes the idea that when the corporate board and the organization face challenges, the board directors are those who set the expectations

for creative approaches and innovative thinking. Based on these ideas, the study in this thesis explores board creativity for making innovative decisions.

According to the research results of this study, board creativity partially mediates the relationship between board member creativity and decisions for exploitative innovation, so hypothesis 7 is rejected. Likewise, hypothesis 8 is also rejected since board creativity partially mediates the relationship between board member creativity and board decisions for exploratory innovation. Contrary to the researcher's expectations, board creativity does not play a mediating role in board decisions for innovation ambidexterity.

After testing the proposed hypothesis 9 that is empirically supported, it can be concluded that board diversity mediates the relationship between board member creativity and board creativity. In one of the previous hypotheses it was shown that there is no direct relationship between board member creativity and board creativity. However, in the presence of board diversity as a mediator there is an indirect mediating relationship. This is another critical result from this study since so far this kind of relationship has not been empirically researched yet.

Similarly, to the board settings and climate for creativity, board diversity is a vital component for forming the relationship between board member creativity and board creativity. These two empirical findings in the present study are very important, and hopefully, they can make some contributution to the corporate governance and board research and literature.

What is the relationship between board creativity and board decisions for innovation ambidexterity? This is the main research question. The result of testing the last two mediation relationships are helpful for answering this question because the

last two meditation hypotheses are supported by the research results. Hypothesis 10 is that *board creativity mediates the relationship between board diversity and decisions for exploitative innovation.* It is supported since there is full mediation, so board creativity plays a mediating role.

Equally, hypothesis 11 is that *board creativity mediates the relationship between board diversity and decisions for exploratory innovation.* It is also supported due to full mediation, so board creativity is a powerful mediator. To sum up, board creativity plays a mediating role for ambidexterious innovation decisions, and constructs such as board settings and climate for creativity and board diversity are critical for these two mediating relationships.

According to the traditional environment - strategy - performance framework, alterations in environmental turbulence force an organization to adopt different strategies for protecting its competitive advantage and performance as written in studies like Tan and Litschert (1994), Porter (1991) and Child (1972). This framework is even more critical today due to the increased degree of environmental turbulence, and innovations are the most vital organizational enablers for navigating environmental turbulence as accentuated by Chen and Huang (2009), and Li and Atuahene-Gima (2001).

Usually for steering environmental turbulance, innovaton for exploitation and innovation for exploration are the two types of innovations mostly implemented. Evenmore, maintaining the equilibrium between exploitation and exploration is vital for organizational prosperity and survival (Levinthal & March, 1993), and that is why the exploitation and exploration have been studied from the strategic standpoint in

research led by Kristal, Huang and Roth (2010), and in another one led by Yalcinkaya, Calantone and Griffith (2007).

Generally, corporate boards or boards of directors set strategic objectives (Golden & Zajac, 2001). The strategic role of boards is particularly critical in situations of environmental turbulence as discussed in studies such as Stevens, Moray, Bruneel and Clarysse (2015), and Almandoz (2012), since board members have to make strategic decisions which affect how their organizations steer shifting external conditions (Goodstein, Gautam, & Boeker, 1994). Board members are like "jugglers" who have to make strategic decisions for innovation ambidexterity as in the metaphor of a juggler which recommends that managers who are capable of integrating and reconciling both exploitative and exploratory activities will produce an incessant stream of innovations, including both incremental and radical innovations as concluded in studies directed by O'Reilly and Tushman (2004), and Tushman and O'Reilly (1996).

Based on these, the empirical findings from the research in this thesis may be useful for develivering some contribution to the corporate board research. How do board context or some external environmental factors such as technology and market turbulence and competitive intensity moderate the relationship between board creativity and board decisions for innovation ambidexterity? The results of studying the moderation hypotheses are helpful for answering this question. Technology turbulence, market turbulence and competitive intensity are moderating constructs in the proposed research model, and they are tested separately.

The moderating effect of technology turbulence is studied via two hypotheses. Hypothesis 12 states that *technology turbulence moderates the relationship between board creativity and board decisions for exploitative innovation.* This hypothesis is rejected since the p value is insignificant. The next hypothesis is that *technology turbulence moderates the relationship between board creativity and board decisions for exploratory innovation.* It is rejected as well. Shortly, technology turbulence does not moderate the relationship between board creativity and board decisions for exploitative innovation, and similarly, it does not moderate the relationship between board creativity and decisions for exploratory innovation.

Some strategic management scholars namely Christensen and Bower (1996), and Hamel and Prahalad (1991) state that if a company is market-oriented, this situation forces it to be locked to its existing customers, so in that way it will fail to benefit from new technological opportunities and emerging customer needs. On the contrary, other strategic management scholars such as Slater and Narver (1999) oppose by conceding that market orientation provides the advantages by which a company can continue to progress.

Market orientation is even more critical in current turbulent markets which display rapidly shifting customer needs and preferences, their continuing entry and exit from the marketplace, and the constant importance of offering novel products to them (Hult, Hurley, & Knight, 2004). As a result, companies and boards in extremely turbulent markets should incessantly fine-tune their products and services so as to meet their customers' new needs. In this thesis, board of directors are discussed as Compex Adaptive Systems because of the idea that market orientation is critical in the complex and turbulent business environment. In other words, board members with a

market orientation mindset will consider the turbulence and complexity in the external environment while making decisions for innovation.

Innovation excellence necessitates that firms can rapidly react to new conditions in the market and the needs of customers, and also, they can figure out the opportunities which may arise from continuously seeking creative solutions and constant enhancements in innovation processes and products (Martensen & Dahlgaard, 1999). Excellence in innovation is linked and supported by creativity and creative ideas. For example, Van de Ven (1986) states that innovation is the successful advancement, adoption and application of creative ideas.

Exclusively in very dynamic and turbulent environments, creativity is a fundamental organizational competence for upholding or boosting effectiveness (Perry-Smith & Shalley, 2014). However, the academic studies and literature on organizational creativity are still highly inconsistent, and even they are repeatedly inconclusive in clearing up how organizational creativity impacts market performance (Montag, Maertz, & Baer , 2012). Correspondingly, it is unclear how the creativity on coporate boards inflences market orienation and performance. Therefore, this study explores board creativity and its relation to decisions for innovation and market turbulence by discussing the following hypotheses.

Market turbulence moderates the relationship between board creativity and board decisions for exploitative innovation. Market turbulence moderates the relationship between board creativity and board decisions for exploratory innovation. These two hypotheses are written to test the moderation of market turbulence. Since the two p values are insignificant, these two hypotheses are rejected. Stated differently, the market turbulence does not play a moderating role

in the relationships of board creativity and board decisions for innovation ambidexterity.

In the staregy literature, it is well recognized that corporate governance impacts organizational performance by affecting the strategic choices which the organizations take (Hoskisson, Hitt, Johnson, & Grossman, 2002). That is why, the strategic role of boards and their involvement in strategies are studied here. According to McNulty & Pettigrew (1999), the strategic involvement of boards is actually the scope of boards engagment in determining the process, content and implication of strategies, and this denotes boards' inputs to corporate value creation considered as very significant in general and in this study in particular.

For instance, this strategic involvement of boards has been shown to affect organizational decision behaviors (Nielsen & Huse, 2010) such as innovation (Torchia, Calabrò, & Huse, 2011) and organizational ambidexterity (Heyden, Oehmichen, Nichting, & Volberda, 2015). Initial literature was doubtful regarding board members' strategic contributions, and there was a shortage of knowledge concerning its precursors (Pugliese, et al., 2009).

Later, more current studies suggest that board strategic decisions momentously profit from board members' task-specific know how (McDonald, Westphal, & Graebner, 2008), industry-specific knowledge (Kor & Sundaramurthy, 2008), and their expert practices from serving as top level executives (Khanna, Jones, & Boivie, 2013) . However, a director's creativity and board creativity as value creating factors have never been studied in relation to their strategic involvement and decisons as in the present study.

Evenmore, the above ideas heve been empirically explored under the condition of turbulent external environment including competitive intensity. According to Grewal and Tansuhaj (2001), competitive intensity as the degree to which a company encounters competition in a market. This degree of competitive intensity is related to the actions of competing companies, counting promotion and price competition etc., and when market competition is intense, customers have numerous alternatives (Kohli & Jaworski, 1990) so that companies are forced to innovate in order to compete.

Moreover, former research like Atuahene-Gima (2005) and (2003), and Jaworski and Kohli (1993) find out that very dynamic environment and exceedingly competitive environment are both advantageous for innovations and business performance. The findings of a much recent study conducted by Chang, Hughes, and Hotho (2011) are consistent, so examining competitive intensity as a mediator in the relation between board creativity and decisions for innovation ambidexterity might be useful.

The moderating effect of competitive intensity in hypothesis 16 is stated as follow. C*ompetitive intensity moderates the relationship between board creativity and board decisions for exploitative innovation.* This hypothesis is supported. However, hypothesis 17 is rejected. In other words, competitive intensity does not moderate the relationship between board creativity and board decisions for exploratory innovation.

Beinhocker (1997) states that organizations in hastily-changing environment reflect the features of open systems which are characterized as dynamic, complex, adaptive, emergent and self-organizing. The similar approach is taken in this thesis by

studying corporate boards as systems that are open to their external environment. Besides, boards are open dynamic systems and their interaction patterns with the external environment are constantly altering.

Moreover, boards are complex systems, or they are rule-governed groups of agents or board members, and their interactions have random results in terms of system effects. If the interactions rules advance in reply to systems changes, then these systems or corporate boards become both complex and adaptive systems, which means that boards or their members learn from the external environment that modifies the systems, their plans and actions, all of which in turn alter the environment. Despite the seemingly chaotic patterns of interactions, corporate boards as studied in this thesis are complex adaptive systems which are emergent and self-organizing.

Consequently, the external environment studied here as board context and boards as complex adaptive systems make ambidexterious decisions for innovation since it has been shown that boards impact corporate entrepreneurship and innovation in some studies such as Eddleston, Kellermanns and Zellweger (2010), Corbetta and Salvato (2004), and Zahre (1996), but virtually no research to date has examined the factors that influence their connections. As a result, the empirical study in this PhD thesis is an attempt to investigate some of the multiple factors like creativity and diversity both of which affect these relationships.

In this research, after being tested separetely, technology turbulence, market turbulence and competitive intensity are combined into a single construct that is the board context or external environment. This single construct is also tested as a moderating construct, and the moderating effect of the external environment is studied by stating two research hypotheses. The first one or hypothesis

18 is supported, so the board context that is the external environment moderates the relationship between board creativity and board decisions for exploitative innovation. What is the role of the board context or the external environment in board decisions for exploitative innovation? The answer to this research question is that the board context or the external environment plays a moderating role in the relationship between board creativity and decisions for exploitative innovation.

On the other hand, the second hypothesis or the last hypothesis in this research is rejected. Consequently, the board context that is the external environment does not moderate the relationship between board creativity and decisions for exploratory innovation due to the insignificant p value. As a result, the answer to the research question - What is the role of the board context or the external enviroment in board decisions for exploratory innovation? - stated in the introduction is negative. In other words, the board context or the external environment does not moderate the relationship between board creativity and decision for exploratory innovation.

Using SmartPLS 3.0 for the statistical analysis of the data in this study, provides the opportunity for obtaining empirical results such as total direct, total indirect and specific indirect effects. The discussion and interpretation of these effects is independent from the previous literarure since they have not been empirically tested before. Consequently, the findings of total direct, total indirect and specific indirect effects of all the constructs are of some contribution to the corporate governance and board research and literature.

When the research results such as total effects and total indirect effects are considered, they also provide important information about the research model. According to the total effects results, only one that is board diversity does not have a total effect on board decisions for exploitative innovation because its p value is not significant. What is the effect of board diversity on board decisions for exploitative innovation? The answer to this question is that there is no effect. All the other total effects are significant, so the constructs in the proposed research model have significant total effects.

Taking into account the total indirect effects, they also provide important information about the proposed research model. Besides, six of the p values of the total indirects effects are significant, so there are six total indirect effects there. The total indirect effect between board diversity and board decisions for exploitative innovation is insignificant because its p value is not significant. Shortly, there are not any direct total or indirect total effects of board diversity on board decisions for exploitative innovation.

Taking into account the specific indirect effects, it can be stated that out of the 14 specific indirect effects, 7 are significant. The seven specific indirect effects are significant, and they indicate that there is a specific indirect effect among these constructs. The first specific indirect effect is among board member's creativity, board diversity and board creativity. Next, the specific indirect effect is among board member creativity, board settings and climate for creativity and board creativity is significant. Besides, it is observed among board settings and climate for creativity, board creativity and decisions for exploitative

innovation. Board diversity, board creativity and board decisions for exploratory innovation also show indirect specific effect.

Another significant result is the specific indirect effect among board member creativity, board diversity, board creativity and board decisions for exploratory innovation. The fifth specific indirect effect is also significant, and it is among board settings and climate for creativity, board creativity and board decisions for exploratory innovation. The last specific indirect effect is very important, and it is among board member creativity, board settings and climate for creativity and board decisions for exploratory innovation.

On the other hand, the remaining seven specific indirects effects are not significant, so there is not any specific indirect effect among these constructs. The first insignificant one is among board diversity, board creativity and board decisions for exploitative innovation. Secondly, there is no specific indirect effect among board member creativity, board diversity, board creativity and board decisions for exploitative innovation. Also, specific indirect effect is not found among board member creativity, board creativity and board decisions for exploitative innovation. Next, the specific indirect effect among board member creativity, board settings and climate for creativity, board creativity and decisions for exploitative innovation is also insignificant.

The last three insignificant specific indirect effects observed in the present study are as follow. There is no specific indirect effect among board member creativity, board settings and climate for creativity and board decisions for exploitative innovation. Likewise, board member creativity, board creativity and board decisions for exploratory innovation does not indicate specific indirect

effect. Finally, there is not any specific indirect effect among board member creativity, board diversity and decisions for exploratory innovation. After discussing the research interpretations, it might be a good idea to discuss the implications of this research.

5.2 Implications

5.2.1 Research Implications

By spotting some research gaps and by uniting four research areas, the main purpose of this PhD thesis was defined. Consequently, the main purpose of this thesis is to bridge these research gaps in order to add some academic value by exploring value adding corporate boards operating in a turbulent and complex external environment, and explaining how they add value through their creative, ambidexteruous, strategic decision-making. This main purpose was achieved by studying four specific research areas which have been formed according to the gaps in these areas that create the overall research scope of this thesis.

The first research implication is in the research area that is the Complex Adaptive Systems research. It was used to study corporate boards as Complex Adaptive Systems (CASs) since the processes within them are affected by the board context or the exernal environment. There was a need for more research about the complex and turbulent external environment and its relationship with the corporate boards research since board of directors are expected to make strategic decision under these external conditions, and this is extremely challenging. That is why, it was important to study the relationship between external environment or the board context

and board decisions for exploitative and exploratory innovation. To sum up, the research area about boards as CASs have been combined with the other research areas about amdidexterity, creativity and value creating boards, so all of these have been explored simultaneously.

The second research implication is in the area of value adding corporate boards and how they add value. Based on Huse's value adding corporate boards idea, corporate boards have to add value. Adding value through creativity, creative behaviors and decisions have not been studied yet, so boards value adding through creative decision-making have been researched.

The third research implication is studying creativity on corporate boards. There was a gap for researching board creativity, board member creativity and the settings and climate for creativity all together because all of them influence board member and board strategic decision-making. The main reasons for focusing on these three was because creativity has not been empirically studied by using the systems approach of creativity on board level, despite the fact that the number of researches that study creativity of employees, teams and organizatons has increased recently. Moreover, the research area about creativity has been combined with the research area of value creating boards in order to explore how board members and boards add value through creativity.

The last research area is about researching ambidexterity on corporate boards because of a research gap. Senior teams must have a clear strategic intent to implement ambidexterious organizational model, and they should be aligned and flexible to manage ambidexterity. Board members should be very creative in balancing innovation ambidexterity while making decisions, so the mediating role of

creativity in board decisions for innovation ambidexterity has been explored in detail. As a result, the research area about ambidexterity has been unified with the above stated three research areas so that boards value creation through creativity for making decisions for innovation ambidexterity in the board context characterized by technology and market turbulence and competitive intensity has been empirically explored in this PhD thesis.

5.2.2 Managerial Implications

Lubatkin, Simsek, Ling and Veiga (2006), and Mom, Van Den Bosch and Volberda (2007), write leaders are indispensable in the ambidextrous coordination of the activities for exploitative, and also, of the activities for explorative innovation. Minichilli, Zona and Zattoni (2009) state that the degree of board of directors' conrtibution to strategic decision-making processes rests on the directors' capacity to bring in their competences, experiences and knowledge.

Based on these, this research and its findings are an attempt to clarify how strategic leaders use some behaviors for enabling organizational-level exploitative and exploratory innovations (Jansen, Vera, & Crossan, 2009). In other words, this study explores how strategic leaders and in this case board members use some behaviors such as their creativity and decision making by taking into account the external environment for enabling innovation ambidexterity in the forms of exploitative innovation and exploratory innovation. Expectantly, the empirical findings of this research will be of some practical benefit for corporate boards and their board members.

5.3 Limitations

There are several limitations of this research, and they have to be discussed. The first limitation is related with the sampling methods. The sample has been chosen from board members who serve on corporate boards of companies located in Istanbul, and since accessing them and collecting data have been very challenging two non-probability sampling methods that are convinience and snowball sampling have been chosen. These two non-probability sampling methods had to be implemented because of the nature of the sample that is the limited number of board members, and the difficulty of convincing them to join this research. For convenience, the researcher had to use the database of Turkish Association for Corporate Governance (TKDY) and Kamuyu Aydınlatma Platformu (KAP). She also used her professional network to ask some board members to fill in the questionnaire, and then send it to other board members. However, it could be much better if probability sampling methods have been used.

The second limitation of this research is the low response rate. Accessing a great number of board members and asking them to fill in an on-line survey questionnaire have been very challenging. However, these have been possible because the questionnaire has been sent to the e-mail addresses of nearly 1500 board members. Despite the fact that a great number of board members, that is 1500 have got the survey questionnaire, only 153 board members have completed it. Unfortunately, this second limitation that is the low response rate could not be overcomed. Since it has been impossible to overcome this limitation the next limitation that is the small research sample has occurred.

In other words, the third limitation of this research is related with the small sample size. It has been estimated as small since by nature it is a small sample size due to the small number of board members and the low response rate. However, the above stated limitations have been easily solved by implementing the PLS-SEM sample size rules of thumb (Hair, Ringle, & Sarstedt, 2011). Stated differently, the minimum required sample size was 30, but the collected number for the pilot study was 66 observations, and the final sample size was 153 observations.

Moreover, another strategy to solve the small sample size limitation was implementing the statistical power which is the probability of accepting an alternative hypothesis when the alternative hypothesis is true. Stated differently, it is the ability of a test to detect an effect if an effect actually exists. The statistical power is a function of the effect size (f^2), the sample size (n), the number of predictors and the significance level (a). To find out the necessary sample size for PLS-SEM, the researcher determined the statistical power of at least 0.80 at a level of 0.05 is considered acceptable for business studies (Hair, Black, Babin, & Anderson, 2010). The strength is measured using the effect size (f^2), where values of 0.02, 0.15 and 0.35 indicate whether an exogenous variable has a relatively small, medium or large influence, respectively (Cohen J. , 1988).

To calculate the necessary sample size, the researcher had to determine the largest regression in the iteration process (Chin & Newsted, 1999), which was possible by identifing the variable with the greatest number of predictors. The researcher used a table (see Table1.) that shows how the sample size depends on the number of predictors, the effect size and the significance level for the

statistical power of 0.80 (Nitzl, 2016). In the model of this research, the number of predictors in the inner structural model is 6, so the required sample size was 46 which is indeed very small compared to the collected sample of 153 observations.

Another limitation of this research is the relatively short time period for administering the questionnaire. It was only six months, from September 13, 2018 to March 13, 2019. This period was only six months because this is a research for writing the present PhD thesis that had to be competed in maximum 24 months. Longer time period of a year or two would be much better for administering the questionnaire so that more data from more board directors could be collected, analyzed and evaluated.

The final limitation of this research is that it was designed as a cross-sectional study in which the empirical data had been collected once over a period of six months. This limitation can be overcome by designing a longitudinal study.

5.4 Recommendations

Some of the recommendations have been stated along with the limitations. Finally, some other recommendations for future research can be listed as follow. Since the research identified a strong direct relationship between board diversity and board creativity, it might be useful to study this relationship more broadly. Besides, researching the settings and climate for creativity will be beneficial for understanding board creativity better.

In addition, it might be interesting to further investigate the difference between the moderating role of the board context or the external environment in ambidextrous strategic decision making. In other words, explaining the observed difference in the mediation of the board context or external environment in the

relationship between board creativity and board decisions for exploitative innovation, and its mediation in the relationship between board creativity and board decisions for exploratory innovation.

6 CONCLUSION

Hopefully, this PhD thesis will make some academic contributions to corporate governance and corporate boards research and literature. Instead of considering the most popular corporate governance theories such as the Agency Theory, some value adding theories like the Resource-based View and Resource Dependence Theory have been used in this thesis. Moreover, these have been integrated with other theories which have not been widely used before. Stated differently, studying corporate boards from the perspective of Creativity Theories and Complex Adaptive Systems (CASs) Theory will add to the theoretical knowledge of boards and corporate governance.

Furthermore, studying some constructs such board member creativity, board settings and climate for creativity, board creativity, board diversity, board decisions for innovation ambidexterity and board context featured by technology and market turbulence and competitive intensity all together will be useful for understanding the processes within the "black box" of corporate board. All these processes and constructs have been studied by implementing quantitative methods that have been used as suggested in the corporate governance literature.

Above and beyond, studying the corporate board strategic role is important today, and it is going to be even more important in the very near future when corporate boards will function in an even more complex and turbulent world. That is why considering the board context or the external environment and studing corporate boards as Complex Adaptive Systems (CASs) will make some contribution in exploring and explaining the strategic role of boards.

Confidently, this PhD thesis will make some empirical contributions as well. Firstly, administering the online survey questionnaire about some internal processes within corporate boards will make some contribution for overcoming the "black box"

phenomena of corporate boards. Secondly, collecting primary data about board member creativity, board settings and climate for creativity, board creativity, board diversity, board context or external environment and board decisions for innovation ambidexterity will shed some light on the so called “black box” or the hidden internal workings of corporate boards.

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APPENDICES

Appendix A: Questionnaire in English

Part 1 - Board Member's Creativity when serve as a Board Member (Adapted from Runco, 2011)

1. Have original ideas about the work of the Board of Directors.
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Often
6 - Always

2. Display creative thought or action.
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Often
6 - Always

3. Adopt new information or new methods, and do innovative actions.
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Often
6 - Always

4. Intentionally shift your perspective and view problems or situations from new angles.
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Often
6 - Always

5. Find a way to utilize your own personal interests and skills such that they improve your work.
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Often
6 - Always

6. Try to work with board members who have a different field or expertise from your own.
1 - Never
2 - Rarely
3 - Occasionally
4 - Regularly
5 - Often
6 - Always

Part 2 - Board Settings and Climate for Creativity (Adapted from Runco, 2011)
7. The psychological atmosphere on our board is conducive to creative thinking.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

8. Innovation is valued on our board.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

9. Risk taking is part of innovation.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

10. Motivates me to be open to new ideas.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

11. Appoints creative board members.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree

5 - Agree
6 - Strongly agree

12. A highly creative board member would do well on our board.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Part 3 - Board Decision-Making Culture (Huse, Minichilli, & Schøning, 2005)

Board Creativity

13. All our board members are actively involved in discussions at the board meetings.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

14. Our board members present many creative and innovative proposals during the board meetings.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

15. Our board finds many creative and innovative solutions.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Openness and generosity

16. Our board members accept and include the risk that they can be wrong in their suggestions.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree

6 - Strongly agree

17. Our board members willingly give advice based on personal knowledge, ideas, and points of view.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

18. Our board members openly and freely convey their own personal preferences and values.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Board member diversity - "Value Creating Board" research instrument (Huse, 2009)

19. Our board members represent diversity with regards to functional background (e.g. sales, finance, accounting, marketing etc.).
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

20. Our board members represent diversity with regards to industrial background (e.g. different industries and firms).
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

21. Our board members represent diversity with regards to educational background (different universities, schools and type of education).
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

22. Our board members represent diversity with regards to personality (different degree of creativity, orientation on action, attitude to listening).
1 – Strongly disagree
2 – Disagree
3 – Partially disagree
4 – Partially agree
5 – Agree
6 – Strongly agree

23. Our board members represent diversity with regards to age.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Part 4 - Board Decisions for Organizational Ambidexterity (Adapted from Jansen et al., 2006)

Board Decisions for Exploitative Innovation

24. Our board makes decisions about implementing small adaptations to existing products and services.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

25. Our board makes decisions about introducing improved, but existing products and services for our local market.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

26. Our board makes decisions about improving our provision’s efficiency of products and services.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

27. Our board makes decisions about increasing economies of scales in existing markets.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

28. Our board makes decisions about expanding services for existing clients.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

29. Our board makes decisions about lowering costs of internal processes is an important objective.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Board Decisions for Exploratory Innovation

30. Our board makes decisions about accepting demands that go beyond existing products and services.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

31. Our board makes decisions about inventing new products and services.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

32. Our board makes decisions about experimenting with new products and services in our market.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

33. Our board makes decisions about commercializing products and services that are completely new to our organization.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

34. Our board makes decisions about frequently utilizing new opportunities in new markets.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

35. Our board makes decisions about regularly using new distribution channels.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Part 5 - Environment (Adapted from Jaworski and Kohli, 1993)

Technology Turbulence

36. The technology in the industry is changing rapidly.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

37. Technological changes provide big opportunities in our industry.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

38. A large number of new product ideas are being made possible through technological breakthroughs in the industry.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Market Turbulence

39. Our customers' preferences change over time.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

40. Our customers tend to look for new products and services all the time.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

41. New customers tend to have product-related and service-related needs that are different from those of our existing customers.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Competitive Intensity

42. Competition in our industry is cutthroat.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

43. Price competition is a hallmark in our industry.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

44. One hears of a new competitive move almost every day.
1 - Strongly disagree
2 - Disagree
3 - Partially disagree
4 - Partially agree
5 - Agree
6 - Strongly agree

Part 6 - Demographic Questions

45. Your gender.
Male
Female

46. Your age.
18 - 30 years old
31 - 40 years old
41 - 50 years old
51 - 60 years old
61 - 70 years old
71 years old and above

47. Your last diploma.
High School
University
Master's Degree
PhD

48. The subject area of your university diploma.
Do not have (High School Graduate)
Economics / Administrative Sciences

Law
Engineering
Sciences
Social Sciences
Medicine / Health Sciences
Other (please specify)

49. The department you have worked the most, and you have acquired the most experience.
Strategy
Business Development
Audit
Risk Management
Accounting
Finance
Law
Sales
Marketing
Human Resources
IT
Production
Operations
Supply Chain
Research & Development
Corporate Communication
Public Relations
Other (please specify)

50. The sector in which you have the most experience.
Banking and Capital Markets
Government and Public
Industrial Production
Energy and Infrastructure
Real Estate
Media and Entertainment
Metal and Mining
Automotive
Retail and Consumer Products
Oil and Gas
Health, Pharmaceutical and Life Sciences
Insurance and Private Pension
Transportation and Logistics
Technology
Telecommunication
Tourism
Asset and Wealth Management
Other (please specify)

51. On the board where you serve you are an.

Member of the Executive Committee
Independent Board Member
Other (please specify)

52. Your tenure as a Board Member.
1 - 3 years
4 - 6 years
7 - 9 years
10 years and above

53. The total number of Board Members of the Board where you serve.
1 - 3 members
4 - 6 members
7 - 9 members
10 - 12 members
12 members and above

54. The number of Executive Board Members on the Board where you serve.
1 - 2 members
3 - 4 members
5 - 6 members
7 members and above

55. The number of Independent Board Members on the Board where you serve.
None
1 - 2 members
3 - 4 members
5 - 6 members
7 members and above

56. The number of Women Board Members on the Board where you serve.
None
1 - 2 members
3 - 4 members
5 - 6 members
7 members and above

57. The type of the company you are a Board Member.
Public company
Non-public company

58. The size (number of employees) of the company you are a Board Member.
Micro (1 - 9 employees)
Small (10 - 49 employees)
Medium (50 - 249 employees)
Large (250 employees and above)

59. The annual net sales revenue of the company you are a Board Member (TL).
3 Million TL or less

4 - 25 Million TL
26 - 125 Million TL
126 Million TL and above

60. The sector of the company you are a Board Member.
Banking and Capital Markets
Government and Public
Industrial Production
Energy and Infrastructure
Real Estate
Media and Entertainment
Metal and Mining
Automotive
Retail and Consumer Products
Oil and Gas
Health, Pharmaceutical and Life Sciences
Insurance and Private Pension
Transportation and Logistics
Technology
Telecommunication
Turizim
Asset and Wealth Management
Other (please specify)

Appendix B: Questionnaire in Turkish

Sayın Yönetim Kurulu Üyesi,

Yönetim ve Strateji Doktora Programı kapsamında, doktora tez çalışması için yapılan bu bilimsel araştırma Türkiye'deki Yönetim Kurullarında görev alan Yönetim Kurulu üyelerine yöneliktir. Araştırmanın amacı Yönetim Kurullarında yaratıcılık, çift yönlü yenilikçilik için karar alma süreçleri, teknoloji ve pazar türbülansı, rekabet yoğunluğu ve aralarındaki ilişkileri ölçmektir. Sizden ricamız tüm soruları eksiksiz cevaplamanız. Vereceğiniz yanıtlar sadece ilgili bilimsel araştırma dahilinde kullanılacaktır ve kimliğiniz kesinlikle gizli tutulacaktır. Cevaplarınızın gizli tutulacağına dair bize olan güveninizi sağlamak açısından tarafımızca gerekenler yapılmıştır. Bu bilimsel araştırmaya ve doktora çalışmasına vereceğiniz katkılar çok değerlidir. Bundan dolayı şimdiden çok teşekkür ederiz.

Saygılarımızla,
Doç. Dr. A. Gönül Demirel – Tez Danışmanı
Esin Akay – Doktora Öğrencisi
İngilizce İşletme Bölümü
Yeditepe Üniversitesi

Bölüm 1

Yönetim Kurulu üyesi olarak görevinizi yerine getirirken aşağıda verilen ifadeleri sıklık derecesine göre cevaplamanızı rica ederiz.

Sıklık Derecesi
1 - Hiçbir zaman
2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

1. Yönetim Kurulunun çalışmaları hakkında özgün fikirleriniz oluşur.
1 - Hiçbir zaman
2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

2. Yaratıcı düşüncelerinizi belirtirsiniz veya yaratıcı eylemlerde bulunursunuz.
1 - Hiçbir zaman

2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

3. Yeni bilgileri veya yöntemleri benimseyip, yenilikçi eylemlerde bulunursunuz.
1 - Hiçbir zaman
2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

4. Bakış açınızı kasıtlı olarak değiştirirsiniz ve sorunları yeni açılardan görmeye çabalarsınız.
1 - Hiçbir zaman
2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

5. Kişisel ilgi alanlarınızı ve becerilerinizi, Yönetim Kurulu çalışmalarını geliştirecek şekilde kullanırsınız.
1 - Hiçbir zaman
2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

6. Uzmanlık alanınızdan farklı bir uzmanlığa sahip Yönetim Kurulu üyeleri ile çalışmaya gayret edersiniz.
1 - Hiçbir zaman
2 - Nadiren
3 - Bazen
4 - Düzenli olarak
5 - Sık sık
6 - Her zaman

Bölüm 2

Görev aldığınız Yönetim Kurulu ile ilgili aşağıda verilen ifadelere katılım derecesine göre cevaplamanızı rica ederiz.
Katılım Derecesi
1 - Kesilikle katılmıyorum
2 - Katılmıyorum

3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

7. Yönetim Kurulumuzdaki psikolojik ortam yaratıcı düşünceye elverişlidir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorım
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

8. Yönetim Kurulumuzda, yenilikçiliğe değer verilir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorım
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

9. Risk almanın, yenilikçiliğin bir parçası olduğunu kabul eder.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

10. Yeni fikirlere ve farklı bakış açılarına açık olmam için beni teşvik eder.
1 - Kesinlkle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

11. Yaratıcı Yönetim Kurulu üyeleri görevlendirir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum

6 - Kesinlikle katılıyorum

12. Yaratıcı Yönetim Kurulu üyeleri, Yönetim Kurulumuzda başarılı olur.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

Bölüm 3

Görev aldığınız Yönetim Kurulu ile ilgili aşağıda verilen ifadeleri katılım derecesine göre cevaplamanızı rica ederiz.
Katılım Derecesi
1 - Kesilikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

13. Tüm Yönetim Kurulu üyelerimiz, Yönetim Kurulu toplantılarında yapılan tartışmalara aktif olarak katılmaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

14. Yönetim Kurulu üyelerimiz, Yönetim Kurulu toplantılarında çok sayıda yaratıcı ve yenilikçi teklif sunmaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

15. Yönetim Kurulumuz çok sayıda yaratıcı ve yenilikçi çözümler bulmaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum

6 - Kesinlikle katılıyorum

16. Yönetim Kurulu üyelerimiz, önerilerinin yanlış olabileceği riskini göze almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

17. Yönetim Kurulu üyelerimiz; kişisel bilgi, fikir ve bakış açılarına dayanarak tavsiyelerde bulunmaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

18. Yönetim Kurulu üyelerimiz; kişisel tercih ve değerlerini, açık ve özgür bir şekilde iletmektedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

19. Yönetim Kurulu üyelerimiz, fonksiyonel geçmişlerine (örneğin: satış, finans, muhasebe, pazarlama vb.) göre çeşitliliği temsil eder.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

20. Yönetim Kurulu üyelerimiz, sektörel geçmişlerine (örneğin: farklı sektörler ve şirketler) göre çeşitliliği temsil eder.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum

5 - Katılıyorum
6 - Kesinlikle katılıyorum

21. Yönetim Kurulu üyelerimiz, eğitim alanlarına (örneğin: farklı üniversiteler ve eğitim türleri) göre çeşitliliği temsil eder.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

22. Yönetim Kurulu üyelerimiz, kişiliklerine (örneğin: farklı derecede yaratıcılık ve eyleme yönelim) göre çeşitliliği temsil eder.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

23. Yönetim Kurulu üyelerimiz, yaşlarına (örneğin: genç, orta, ileri yaş) göre çeşitliliği temsil eder.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

Bölüm 4

Görev aldığınız Yönetim Kurulunun karar alma süreçleri ile ilgili aşağıda verilen ifadeleri katılım derecesine göre cevaplamanızı rica ederiz.
Katılım Derecesi
1 - Kesilikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum
24. Mevcut ürün ve hizmetlerde küçük değişiklikler uygulamak için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum

6 - Kesinlikle katılıyorum

25. Mevcut ürün ve hizmetlerin geliştirilmiş versiyonlarının piyasaya sunulması için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

26. Ürün ve hizmetlerin verimliliğini artırmak için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

27. Mevcut pazardaki ölçek ekonomisini büyütmek için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

28. Mevcut müşterilere yönelik hizmetleri genişletmek için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

29. Maliyetleri düşürme konusunda kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

30. Mevcut ürün ve hizmetlerin ötesine geçen talepleri kabul etme konusunda kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum

5 - Katılıyorum
6 - Kesinlikle katılıyorum

31. Yeni ürün ve hizmetler geliştirmek ile ilgili kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

32. Piyasadaki yeni ürün ve hizmet denemeleri ile ilgili kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

33. Şirketin geliştirdiği yeni ürün ve hizmetlerin ticarileştirilmesi için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

34. Yeni pazarlarda oluşan yeni fırsatları değerlendirmek için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

35. Yeni dağıtım kanalları kullanmak için kararlar almaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

Bölüm 5

Yönetim Kurulu üyesi olduğunuz şirketle ilgili aşağıda verilen ifadeleri katılım derecesine göre cevaplamanızı rica ederiz.
Katılım Derecesi
1 - Kesilikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

36. Ürün veya hizmetlerinde kullanılan teknoloji hızla değişmektedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

37. Sektörel teknoloji hızla değişmektedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

38. Sektördeki teknolojik yeniliklerle, çok sayıda yeni ürün ve hizmet fikri oluşmaktadır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

39. Müşterilerin ürünler hakkındaki tercihleri zamanla değişmektedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

40. Müşteriler yeni ürün ve hizmet arama eğilimindedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum

3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

41. Yeni müşteriler, mevcut müşterilerden farklı ürün ve hizmet ihtiyaçlarına sahip olma eğilimindedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

42. Faaliyet gösterdiği sektörde, kıyasıya rekabet vardır.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

43. Faaliyet gösterdiği sektörde, fiyat rekabeti sektörün belirleyici unsurudur.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

44. Faaliyet gösterdiği sektörde, sıklıkla yeni bir rekabetçi hamle gözlenmektedir.
1 - Kesinlikle katılmıyorum
2 - Katılmıyorum
3 - Kısmen katılmıyorum
4 - Kısmen katılıyorum
5 - Katılıyorum
6 - Kesinlikle katılıyorum

Bölüm 5

Aşağıda verilen soruları cevaplamanızı rica ederiz.

45. Cinsiyetiniz:
Erkek
Kadın

46. Yaşınız:
18 - 30 yaş

31 - 40 yaş
41 - 50 yaş
51 - 60 yaş
61 - 70 yaş
71 yaş ve üstü

47. En son mezun olduğunuz okul:
Lise
Üniversite
Yüksek Lisans
Doktora

48. Üniversite diplomanızın alanı:
Yok (Lise mezunuyum)
İktisadi / İdari Bilimler
Hukuk
Mühendislik
Fen Bilimleri
Sosyal Bilimler
Tıp / Sağlık Bilimleri
Diğer (lütfen belirtin)

49. En uzun süre çalıştığınız ve tecrübe edindiğiniz departman:
Strateji
İş Geliştirme
Denetim
Risk Yönetimi
Muhasebe
Finans
Hukuk
Satış
Pazarlama
İnsan Kaynakları
IT
Üretim
Operasyon
Tedarik Zinciri
AR-GE
Kurumsal İletişim
Halkla İlişkiler
Diğer (lütfen belirtin)

50. En uzun çalıştığınız ve tecrübe edindiğiniz sektör:
Bankacılık ve Sermaye Piyasaları
Devlet ve Kamu
Endüstriel Üretim
Enerji ve Altyapı
Gayrimenkul
Medya ve Eğlence

Metal ve Madencilik
Otomotiv
Perakende ve Tüketici Ürünleri
Petrol ve Gaz
Sağlık, İlaç ve Yaşam Bilimleri
Sigortacılık ve Bireysel Emeklilik
Taşımacılık ve Lojistik
Teknoloji
Telekomünikasyon
Turizım
Varlık ve Servet Yönetimi
Diğer (lütfen belirtin)

51. Görev aldığınız Yönetim Kurulundaki konumunuz:
İcra Kurulu Üyesi Bağımsız
Yönetim Kurulu Üyesi
Diğer (lütfen belirtin)

52. Yönetim Kurulu üyesi olarak üyelik süreniz (yıl):
1 - 3 yıl
4 - 6 yıl
7 - 9 yıl
10 yıl ve üstü

53. Görev aldığınız Yönetim Kurulunda toplam üye sayısı:
1 - 3 üye
4 - 6 üye
7 - 9 üye
10 - 12 üye
12 üye ve üstü

54. Görev aldığınız Yönetim Kurulunda, İcra Kurulu üye sayısı:
1 - 2 üye
3 - 4 üye
5 - 6 üye
7 üye ve üstü

55. Görev aldığınız Yönetim Kurulunda, Bağımsız Yönetim Kurulu üye sayısı:
Yok
1 - 2 üye
3 - 4 üye
5 - 6 üye
7 üye ve üstü

56. Görev aldığınız Yönetim Kurulunda, kadın Yönetim Kurulu üye sayısı:
Yok
1 - 2 üye
3 - 4 üye

5 - 6 üye
7 üye ve üstü

57. Yönetim Kurulu üyesi olduğunuz şirket:
Halka açık şirket
Halka açık olmayan şirket

58. Yönetim Kurulu üyesi olduğunuz şirketin büyüklüğü (çalışan sayısı):
Mikro (1 - 9 çalışan)
Küçük (10 - 49 çalışan)
Orta (50 - 249 çalışan)
Büyük (250 çalışan ve üstü)

59. Yönetim Kurulu üyesi olduğunuz şirketin yıllık net satış hasılatı (TL):
3 Milyon TL ve altı
4 - 25 Milyon TL
26 - 125 Milyon TL
126 Milyon TL ve üstü

60. Yönetim Kurulu üyesi olduğunuz şirketin sektörü:
Bankacılık ve Sermaye Piyasaları
Devlet ve Kamu
Endüstriel Üretim
Enerji ve Altyapı
Gayrimenkul
Medya ve Eğlence
Metal ve Madencilik
Otomotiv
Perakende ve Tüketici Ürüneri
Petrol ve Gaz
Sağlık, İlaç ve Yaşam Bilimleri
Sigortacılık ve Bireysel Emeklilik
Taşımacılık ve Lojistik
Teknoloji
Telekomünikasyon
Turizım
Varlık ve Servet Yönetimi
Diğer (lütfen belirtin)

Zaman ayırarak ve anketimizi cevaplayarak, bu bilimsel araştırmaya verdiğiniz değerli desteklerinizden dolayı tekrar çok teşekkür ederiz.

Appendix C: E-mail Message to Board Members

Merhaba …… Hanım / Bey,

İsmim Esin Akay. Doktora öğrencisiyim ve tez çalışmam için akademik bir araştırma yapmaktayım. Araştırmamın başlığı Y*önetim Kurullarında Yaratıcılık ve Çift Yönlü Yenilikçilik için Karar Alma Süreçleri.* Yönetim Kurulu Üyelerine yönelik bir araştırma ve bu nedenle Size bu mesajı gönderiyorum. Yalnızca 10 dakikanızı ayırarak aşağıdaki uzantıda yer alan anketimi yanıtlamanızı rica ediyorum. Eğer yanıtlayabilirseniz çok yardımcı olacaksınız.

https://tr.surveymonkey.com/r/YK1YY8

Anketi dolduranların kimlikleri gizli olması için anket online ve isimsiz tasarlanmıştır. Dolayısıyla kimliğiniz ve verdiğniz cevaplar kesinlikle gizli olacak ve hiçkimse tarafından biliminmeyecek.

Anket verilerini ve araştırma sonuçlarını doktora tezimi yazmak için kullandıktan sonra İngilizce ve Türkçe makaleler yazmayı hedefliyorum. İngilizce makalenin dünyada önde gelen Corporate Governance: An International Review dergisinde, Türkçe makalenin de Türkiye Kurumsal Yönetim Derneği'nin (TKYD) aylık dergisinde yayınlatmayı planlıyorum. Anketi cevaplayan ve sonuçları merak eden Yönetim Kurulu Üyeleri ile bunları paylaşabilirim.

Desteğiniz için şimdiden çok teşekkür ederim.

Saygılarımla,

Esin Akay

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