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ISTANBUL AYDIN UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

THE IMPACT OF DIGITAL LEADERSHIP ON INNOVATIVENESS IN SMALL AND MEDIUM-SIZED ENTERPRISES

MASTER'S THESIS

LATIF HASANLI

Department of Business
Business Administration Program

June, 2021

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Department of Business
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June, 2021

ONAY FORMU

DECLARATION

+I hereby declare with respect that the study “The Impact Of Digital Leadership On Innovativenes In Small And Medium Sized Enterprises” which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the Bibliography. (.../.../20...)

Latıf HASANLI

FOREWORD

In order for me to do this study, my advisor, to Dr. Lecturer Murat Unanoghlu, I would like to express my gratitude to my dear professors and employees at the IAU Institute of Social Sciences, where I completed my master degree, and my family and friends who always supported me in all matters.

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THE IMPACT OF DIGITAL LEADERSHIP ON INNOVATIVENESS IN SMALL AND MEDIUM-SIZED ENTERPRISES

ABSTRACT

This study aims to reveal the factors that determine the innovation management capability of enterprises in order to determine why innovation applications are needed in the digital age, how businesses manage their innovation applications, and what kind of recommendations and solutions the innovation applications made in the global competitive environment offer businesses.

The aim of the research is to investigate whether digital leadership practice and innovation capacity influence innovative performance, and if so, what is its degree. This study includes studies and statistical values on digital leadership, innovation capacity and innovative performance perceptions. When the literature studies are reviewed, it is seen that no studies have been conducted in SMEs on the "Effect of the Digital Leadership Application and Innovation Capacity on Innovative Performance".

Keywords: *Digital Leadership, İnnovation, İnnovation Capacity*

KÜÇÜK VE ORTA BOYUTLU IŞLETMELERDE DIJITAL LIDERLIĞIN YENILIKÇILIĞE ETKISI

ÖZET

Bu çalışma, dijital çağda innovasyon uygulamalarına neden ihtiyaç duyulduğunu, işletmelerin innovasyon uygulamalarını nasıl yönettiklerini ve küresel ölçekte innovasyon uygulamalarının ne tür öneriler ve çözümler getirdiğini belirlemek için işletmelerin innovasyon yönetim kabiliyetini belirleyen faktörleri ortaya koymayı amaçlamaktadır.

Araştırmanın amacı, dijital liderlik uygulamasının ve innovasyon kapasitesinin innovasyon performansı etkileyip etkilemediğini ve eğer etkiliyorsa derecesinin ne olduğunu araştırmaktır. Bu çalışma, dijital liderlik, innovasyon kapasitesi ve yenilikçi performans algıları üzerine yapılan çalışmaları ve istatistiksel değerleri içermektedir. Literatür çalışmaları incelendiğinde KOBİ'lerde "Dijital Liderlik Uygulaması ve İnnovasyon Kapasitesinin İnnovasyon Performansa Etkisi" konulu herhangi bir çalışmanın yapılmadığı görülmektedir.

Anahtar Kelimeler: *Dijital Liderlik, İnnovasyon, İnnovasyon Kapasitesi*

1. INTRODUCTION

Globally changing technological, social, and economic factors have made it critical for businesses to stay up with the times, and that responsibility has had a significant impact on the behavior of managers in organizations. That change has necessitated adjustments and innovations in all organizational processes at the same time. Today, the most crucial method for businesses to grow is to properly implement innovation. That situation can be possible with an appropriate leadership. Leading managers understand the importance of having the right people in the right location at the right time to drive innovation. These managers are influencers who motivate individuals to work efficiently and achieve the organization's objectives. In this research, the situation between innovation and leadership is described.

With the development of technological breakthroughs, the industrial age has left its place to the digital age. Therefore, digital transformation applications have increased in all sectors. Digital transformation covers many strategies in which coordination between sub-units is essential. Digital transformation starts with the follow-up of business processes and analysis of the current situation (Kul and Gezen, 2020: 172). Accordingly, businesses want to increase their production power with fast, low-cost and flexible production by making strategic plans (Toker, 2015: 51). As a matter of fact, technologies bring environmental fluctuations depending on the increasing demand and growth rate. Businesses focus on innovation practices in order to manage these fluctuations effectively. It is noteworthy that businesses that focus on creating a common vision and providing cooperation are effective in innovation management and thus achieve success in terms of efficiency and sustainability (Eroğlu and Eroğlu, 2019: 51).

Businesses can provide effective management by rapidly responding to market needs, increasing product and service quality, developing services, and designing new management models. Therefore, they need innovation (Elçi and

Karataylı, 2008: 13). Being able to compete on a global scale, keep up with technological breakthroughs and ensuring that the enterprise performs sustainable activities are factors related to the innovation management capacity. In this context, businesses that increase their innovation management capacity and manage them effectively have the potential to increase new product, process and service types (Korkmaz et al., 2018: 113). For effective innovation management, R&D investments, organizational development, industrial production and learning activities by applying are effective factors (Emran and Azad, 2018: 46).

It is necessary to be aware of and adopt innovation practices in order to increase the innovation capacity and manage the process correctly. In addition, for success in innovation management, strategic applications that will enable differentiation of enterprises should be focused and these applications should be managed systematically (Elçi and Karataylı, 2008: 18-20). In digital age technologies, businesses want to stand out with their innovation practices. With technological innovation, businesses that can effectively manage marketing innovation can play an active role in the competitive environment (Atakan 2017:5).

Within the framework of all these explanations, this research purpose to reveal the factors that determine the innovation management capability of enterprises in order to determine why innovation applications are needed in the digital age, how businesses manage their innovation applications, and what kind of recommendations and solutions the innovation applications made in the global competitive environment offer businesses.

The aim of the research is to investigate whether digital leadership practice and innovation capacity influence innovative performance, and if so, what is its degree. This study includes studies and statistical values on digital leadership, innovation capacity and innovative performance perceptions. When the literature studies are reviewed, it is seen that no studies have been conducted in SMEs on the "Effect of the Digital Leadership Application and Innovation Capacity on Innovative Performance".

Turkey, Istanbul was carried out with the participation of people who are not working executives and managers in SMEs in general. If it is understood that

the digital leadership practice and innovation capacity has an impact on innovative performance, employees in SMEs will consider the importance of digital leadership and innovation capacity structure in order to effectively manage their individual performance. Thus, it will give a deeper perspective to performance management applications.

To date, research by scientists in various disciplines has contributed to an understanding of leadership in the digital age. These contributions range from theoretical and practical to methodological advances in tools for studying leadership. Studies in management and applied psychology have examined in detail how various forms of leadership facilitate group performance in terms of different types of digital media, how mistakes in performance evaluations affect the progress of female leaders, and how original research in political science affects politicians' followers. However, studies have shown that various aspects of leadership are not sufficiently understood as a phenomenon.

2. DIGITAL LEADERSHIP AND ITS IMPORTANCE

2.1 Leadership Concept

Leaders are people who direct the community they live in, motivate people with their work, and make great contributions by encouraging the society to reach its goals. The drive to obtain power generally manifests itself in two ways in society. People either become leaders or follow the leader. According to, Konakay, and Demirkaya (2014: 21), the ability to influence a group of individuals to accomplish a goal" is a simple definition of leadership ". While those who have power in the society are positioned as the leader, those who do not feel strong will follow the power owner in order to be close to this power and to provide a sense of trust. According to Şimşeker and Ünsar (2008: 1031), "managers can rely on their past technical experience and local success, but when it comes to leadership required by global conditions, this is a very different situation."

The concepts of leader and leadership, although many definitions have been made since the birth of the concept of management, as well as not having a common definition, ideas and definitions are constantly emerging with the change of needs. According to Longman, the person who guides or controls a group, organization, or country is referred to as a leader” (Longman 2019). (TDK, 2019).

Many different definitions of leadership, which has been the subject of science since the 1920s (Bakan & Büyükbeşe, 2010:73). Many studies seeking answers to the question of how to become a better leader have based on dubious evidence, many of which are anecdotal. Even the authoritative academicians in their field do not agree on what constitutes leadership and how it is applied to achieve success (Allio, 2012:4). It is possible to come across many definitions about leadership in various literary examples. Bolat et al. (2008:167) and Güney (2012:35) listed some of these definitions as follows.

- Leadership is the co-execution of many different functions such as influencing subordinates in a motivating way, creating and achieving organizational goals, and maintaining the commitment of the organization.
- Leadership is a social activity in which the individual can influence the behavior of other individuals without the use of violence or threat.
- Leadership is a process of interpersonal interaction in an environment where the communication process is experienced, directed to achieve previously set goals.
- Leadership is the process of influencing and directing human activities in order to achieve corporate or social goals.
- Leadership is the process of organizing the experiences of the organization and utilizing the existing power of the organization through these experiences.
- Leadership is the process of motivating followers under certain conditions, gathering them around common goals, conveying their experiences to them, and ensuring that they are satisfied with the leadership style it applies.
- Leadership is the ability to find the right individuals to achieve a specific goal or goal and to drive them by integrating them together into a force.

Research on the nature of leadership has an important place in organizational and managerial literature as it helps the development of managerial competence and effectiveness within the organization. However, it is possible to say that it is an ambiguous concept that is difficult to define fully, even though it is intuitively simple. Wood (1994) says that this ambiguity stems from philosophical and methodological problems; He states that when explaining leadership, it must be defined with the qualities that make up it and that these qualities can be achieved by defining them separately. In fact, leadership is a difficult concept to understand because there are many interpretations of what is happening, and these interpretations are based on implicit assumptions about behavior (Pittaway et al., 1998:408-409). By identifying and classifying these

indirect assumptions, it is possible to reduce complexity and conduct more detailed research.

2.2 Leadership Theories

Leadership issue has been handled from different angles over time in parallel with the development of management theory. Leadership has been spoken since the time of Plato, and it is clear that there are still many societies and institutions that people cannot digest the concept of leadership and lack leadership. In the known modern world, with the rationalist revolution of the eighteenth century, a community that did not believe in its leadership emerged and the enlightenment period began with the influence of philosophers such as Voltaire. Thanks to this enlightenment, by the nineteenth century, the idea that people could change and progress towards perfection dominated in rationalist thought. At the end of this century, Freud's talk of the subconscious and Weber's writings on bureaucratic leadership added a frightening perspective to leadership and began to form cracks in leadership belief. In the twentieth century, leaders began to search for common characteristics, and leadership styles such as democratic leadership were adopted in the 1940s. With the beginning of the war period, the results have emerged about the leaders changing their styles according to the situation. According to the situation, it may be normal for managers who seek leadership style to be unable to digest leadership in this confusion (Goffe & Jones 2000:114-117).

History has provided many vivid examples of the influence of the individual on important events and processes. In some cases, it was possible to trace direct links between the presence of certain qualities in a leader, the decisions he makes and the success of the organization. However, this does not yet prove that the presence of certain characteristics in a person will make him a leader. In specific situations, various personality traits may be of particular importance. Other factors also influence the leadership style, in particular, organizational conditions, conditions for setting a specific task, characteristics and state of the external environment.

Therefore, the development of leadership theory went along the path of expanding the list of studied factors. In the beginning, these were characteristics

that were not separable from the personality itself. Later, the personality traits of a leader began to be investigated, which are manifested in his behavior, in the relationship between the leader and other members of the organization.

The scientific treatment of leadership can be handled in four groups: (1) "traits approach", which focuses on the characteristics of leaders from past to present and even called the theory of great men (2) "behavior approach" that examines and classifies the behaviors of leaders (3) different types of leadership in different situations. the "situational approach" that determines it is more successful; and (4) the "current leadership approach" that addresses current issues of leadership. (Cherry, 2019:7-8)

If we need to look from the past to the present, some of the approaches have been much more popular from time to time than others. Their comments on these leadership approaches are that they are meaningful and complement each other when they are connected to each other, as all of these approaches evaluate leadership from different aspects. On the other hand, we can see that some approaches are suitable for the people we define as leaders today, and some of them have much more in-depth definitions of the subject (Çelik & Şimşek 2015:5). One style cannot be expected to solve all problems. Using leadership styles when necessary or together will help managers to be more effective, increase productivity and increase the quality of the work (Hersey & Blanchard 1982).

The leadership approaches that have emerged according to the work of different people or institutions in different periods are summarized in Table .1.

Table 2.1: Leadership approaches and scopes

Scope of Leadership	Approaches
Features Approach	Big Men - Traits Approach
Behavioral Approach	Ohio State University Studies, University of Michigan Studies, Blake and Mouton's Managerial Grid Model, Mc Gregor's X and Y Theories
Situational Approach	Fiedler's Contingency Approach, Hersey and Blanchard's Situational Leadership Approach, House's Road Purpose Approach, Vroom and Yetton's Decision Making Model
New approaches	Charismatic leadership Interactive Leadership Transformational Leadership

Sources: Balcı 2009

A lot of scientific research has been done on the concept of leadership and approaches have been developed. Although many different leadership theories have emerged, historically it can be classified under eight headings. Among these titles, the Great Man Theory, which was introduced in the first half of the 1900s, the Traits Theory that developed after it, Behavioral Theories and Contingency Theories are the leading theories. Recently, studies on New Approaches are continuing by considering additional variables.

2.2.1 Big man theory

According to this theory, leaders are born with necessary qualities such as charisma, trust, they have the intelligence and social skills to be natural leaders. The pioneers of this theory assume that leadership capacity is natural. This theory depicts great leaders as born with a hero, a legendary personality, or leadership destiny who will rise to leadership when necessary. When the term "Big Man" first appeared, it was primarily applied to male characters,

particularly those in positions of military command. The Great Man Theory shows that people cannot later learn to be strong leaders. Because, according to this theory, a great leader is not made, a great leader is born. The Great Man Leadership Theory is similar to the concept of the divine right of kings in which he ruled and ruled over his subjects on a permanent hereditary basis. The authority of kings was meant to come from God. Similarly, some people were on their way to become great leaders in their own right because God had endowed them with divine gifts. The Big Man Theory extends back to ancient Grecce and Rome, when leadership was linked to spccific mental, physical, and personality characteristics. It is a level of divinity assigned to leaders and their actions since they are believed to be born. It is obvious that the Great Man theory lacks both scientific and empirical support. It is more of a speculative concept. The great weakness of the Great Human Theory is the absurd belief that, apart from the impossibility of natural traits, some people are great and successful leaders regardless of their environmental situation. Many modern theorists, including some leaders, have utterly dismissed the Great Man Theory. (Cherry, 2019:7-8).

2.2.2 Feature's theory.

It assumes that successful leaders have an innate set of physical traits and certain qualities that set them apart from non-leaders. However, the difficulty of classifying and verifying these traits led to widespread criticism of the Traits approach, leading to the emergence of Situational and Behavioral leadership approaches. Situational and behavioral theorists have worked on this concept by defining leader behaviors and the conditions they are in, as well as leader characteristics (Obgonna & Harris, 2000:767–768). Trait Theory is a modification of the Big Man Theory that argues that leadership skills or traits may be gained. They don't always have to be congenital. Leadership trait theory states that there are certain identifiable qualities or traits peculiar to leaders and that these good leaders have these qualities to some extent. Leadership qualifications can be innate or acquired through training and practice.

According to the studies conducted in the history of management literature, the theory of characteristics as an approach that connects leadership to the existing characteristics from creation (Akoğlan Kozak, 2016:145), was first introduced

out of the need for officer election in the First World War. America has benefited from psychologists in these elections. The use of techniques such as the alpha-intelligence test for the characteristics of individuals enabled the theory to be noticed and investigated by the industry (Demir et al., 2010:132). Trait's theory, which is the first theory put forward about leadership, accepts leader as a variable (Koçel, 2013:398). Studies conducted until 1945 focused on defining the qualities of leaders, and it was created to determine the relationship between the concept of leadership and individual characteristics (Çetin, 2008:76). In this respect, traits theory argues that the characteristics of the leader are a major factor on the leadership process. According to this approach, the element that makes the leader stand out in the group is the personal characteristics of the leaders (Aydoğmuş, 2004:8). Minister and Büyükbeşe (2010:74) listed the characteristics that leaders should have according to the theory of properties as follows.

- Physical characteristics: being energetic and active
- Intelligence and ability: judgment, effective speech, clarity and knowledge,
- Personality: Being fair, being straightforward, being creative,
- Job-related features: A motivating disposition, desire for success, sense of responsibility, commitment to the task and taking responsibility in accordance with the objectives,
- Social features: Cooperation ability, dignity, high social communication skills, courtesy and grace.

Known as the oldest of leadership theories and also referred to as the "great man", this theory accepts the characteristics of leaders as an indispensable factor in managerial processes. In fact, these features are seen as the most important factor of leadership. The ability of any individual in the organization to come to the fore and be accepted as a leader and to direct the group is related to the characteristics it possesses (Okumuş & Avcı, 2017, p.401). Although it is still thought to be effective, this theory, which takes only the characteristics of the leader as its starting point, ignoring the behavior and situation factors shown

by the leaders in the organization, has lost its validity over time (Çetin, 2008: 77).

2.2.3 Behavioral theory

According to this theory, a leader's effectiveness is determined by his behavior as well as his physical characteristics. Behavioral theorists focused more on the behavior of the leader and divided them into two as business-oriented and personal-oriented. While studying this theory, since the effects of different situations on behavior were not studied, various constraints were created and the ground was laid for the emergence of situational theories (Türetgen, Ünsal, & Telman, 2004:28).

In the development of behavioral leadership theory, many different applied and theoretical studies have been put forward. As a result of these studies, various leadership styles have emerged. In many recent studies, the main leadership models in question have been listed as follows; Ohio State University Leadership Studies, Michigan University Leadership Research, Harvard University Research, Blake and Mouton's Management Style Matrix Model, X and Y Approaches, Yukl's Leadership Behavior Models, Rensis Likert's System 4 Model (Bakan and Büyükbeşe, 2010:74). It is beneficial to briefly state the main features of these leadership studies.

One of the first studies investigating leadership in behavioral theories was conducted at Ohio University. The study aimed at defining leadership and investigating leadership behaviors was conducted on military and civilian administrators. (Güney, 2012:372). As a result of the research, it was concluded that leadership behavior should be evaluated in two dimensions. These are turning to human relationships, relationship levels, and activating the structure. In the leadership studies conducted at Michigan University, it was aimed to determine the defining characteristics of leadership and leadership performance effectiveness. In the study comparing successful and unsuccessful managers, it was concluded that successful managers focused more on the humanitarian needs of their sub-employees (Okumuş ve Avcı, 2017:402). Ohio and Michigan studies have identified two important leadership behavior traits. These; The initial structure (emphasis on leader to fulfill the tasks) and evaluation

(emphasis on leadership in interpersonal and in-group harmony) (Seters & Field, 1990:33).

In leadership studies conducted at Harvard University, it has been revealed that the type of communication is as important as the communication level (Aslan, 2013, p. 128). It has been determined that leadership behavior has three dimensions. These; the level of activity is the ability to accomplish the task and the level of being liked by the followers (Akçakaya, 2010:101).

2.2.4 Situational theory

Unlike the other two theories, the state variable is also examined to define leadership. According to this theory, the environment and conditions shape leaders as well as their personal characteristics and behaviors. Situational theory reveals that people who are leaders within appropriate environmental factors and conditions may not be leaders in different situations.

Researchers working in the field of management have focused on the topic of leadership a lot. However, instead of presenting an argument that satisfies all researchers, this situation brought with it even more questions. Because some of the theories put forward on this subject refuted the others. In the early days, the idea that leadership skills were based solely on personal characteristics has become obsolete over time, and the idea that leadership skills are a role behavior and are based on “situational models” has been more widely accepted (Met, 2016:224). The contingency theory has shown a different approach from previous studies by revealing that effective leadership can be explained depending on the conditions and the process (Koçel, 2013:406). The main idea of the contingency theory in leadership is that the personality, leadership style and behavior of the current leader depend on the leader's conditions. In other words, according to this theory, some situational factors that shape the activities of the leader should not be ignored in leadership. According to this theory, leadership is a managerial role behavior created by a complex system that changes according to place and time (Bolat et al., 2008:176).

Leadership effectiveness according to contingency theory; The behavior of the leader in relation to the task, the behaviors he shows in mutual relations, the behaviors of the followers during their activities (Bakan & Büyükbeşe,

2010:75), the quality of the aim to be achieved, the skills and expectations of the followers, the organizational qualities of the leader, the experiences of the leader and followers depend on (Koçel, 2013:584).

To summarize, contingency theory; It assumes that, under different conditions, organizations regulate through uncontrolled interactions involving various factors. This situation reduces the effectiveness of leadership qualities. The interactions created by the factors brought about by these different conditions lead to unpredictable results (Bulut & Kamaşak, 2012:61). Ralp (2005:269), who proposed a model to increase the effectiveness of managers, mentioned some advantages of the contingency approach. If these are summarized briefly.

- Understandable and comprehensive, it is intuitively attractive and relatively easy to implement.
- He does not advocate that one type of leadership will always prevail.
- It is a necessary approach to meet the development needs of leaders' managerial and supervisory features.
- It helps participants in comprehensibly conceptualizing key steps in the entire managerial process and provides clear guidance for managerial behavior.

The contingency theory, which seeks the most effective combination in task and human harmony, has also received negative criticism, despite the above advantages over previous theories. In this approach, where a common idea about which approach is effective in which situations in leadership is rarely provided, the relationships between leaders and followers are also based on simple foundations. In these aspects, the situational approach in leadership has left its place to approaches based on the examination of leaders who can show high performance with extraordinary leadership methods (Çetin, 2008:79). These approaches are evaluated within the scope of modern leadership theories.

2.2.5 New approaches

As a result of the participation of different generations in business life, globalization and shortening of distances, different cultures working together have caused the business world, organizations and managerial needs to change.

Accordingly, new approaches have been developed by examining the leadership behaviors that come to the fore in contemporary businesses. Some of these approaches are; Charismatic Leadership, Servant Leadership, Ethical Leadership, Outstanding Leadership, Transformational Leadership, Authentic Leadership and Reliable Leadership (Kesimli, 2013:3–8). Tiryaki: (2008: 1) defined the above-mentioned leadership theories as follows: In the studies on leadership, different leadership theories have emerged. The shaping and development of these theories is the result of researches on which type of leadership will be more effective and successful. However, in the light of the definitions and theories revealed, it is concluded that there is no single and best leadership style that can be applied in all conditions.

According to this theory, which includes the latest studies on leadership, "there is no single and best leadership style that is valid anytime and anywhere" (Güney, 2012: 387). Like all social elements, leadership as a social phenomenon is renewed by being affected by changes. With these changes, studies carried out in order to reveal a leadership understanding in accordance with current conditions have led to the formation of many new leadership approaches (Eraslan, 2004: 2). People-oriented approaches that are more related to the environment, that prioritize freedom, have come to the fore (Demir et al., 2010: 134). In the literature, it is possible to encounter many new leadership theories with different approaches. The basic characteristics of leadership approaches, which are often associated with organizational mastery, are of great importance as they form the concrete basis of the research.

2.3 Leadership types

In today's conditions, different leadership styles have been created in terms of leadership styles, and the formation of new styles will not stop as time progresses. Criticism of the subject continues rapidly in terms of both institutions and leadership research methods and implementation (Can 1997:12). In our time, different leadership styles have emerged in terms of leadership behaviors. Among these leadership behaviors are charismatic leader, strategic leader, visionary leader, autocratic leader, transformational leader, democratic

leader, situational leader and liberal leader behaviors. These leadership styles help to identify and understand the attitudes of trainers (Donuk 2006:27).

With the autocratic leaders leaving the community for a short time, the community's activities decline. Considering this kind of impact, it seems unimaginable for the leader to leave the community, even for a short time, but in some cases, it works skillfully. It can be used in cases of high caution in autocratic behavior and in similar necessities such as ensuring that the team remains in the league where it competes, keeping the company alive (Köksal 2007:123).

Democratic leaders are trusted by their audiences, respected for their actions, and followed with devotion by their audience. For the participant leader, working on behalf of humanity is a very enjoyable situation to be done. According to this leader, if people are directed, they will use their potential for organizational purposes (Ertürk 2008:7).

A goal is set for those who take charge of liberal leadership and are free to reach the goal in line with their own skills. Leaders who display liberatory style behaviors have little need for the authority of the management, leave the community on their own, and allow them to make plans, programs and goals within the scope of the opportunities given to those in each community (Eren 1998:67).

Liberal leaders give full freedom to members, leaving their exercise of power entirely to the initiative of group members. This type of leader does not set goals, make decisions, and believes they are good friends. The group is unbalanced, the activities cannot be very successful (Acuner and İlhan 2003:78).

The visionary leadership style indicates which way the Group should go. But it doesn't show how to act, it frees people to take risks and innovate. It always reminds people of the main goal of their duties and gives serious meaning to the usual tasks. Officers feel that common goals are in line with their interests (Yetim and Şenel 2001:15)

What distinguishes the charismatic leadership style is its visionary perspective and the ability to reach the vision through unconventional ways. Charismatic

leaders often appear in non-participatory management styles and in places with a democratic lifestyle. It is rarely found in countries where laws, rules and democracy come to life. It is inevitable to appear in environments of uncertainty, risk and chaos (Aydar 2000:29).

Although decisions are not taken in groups in supportive leadership, they are decided by taking into account the ideas and suggestions of those in the group. It applies the reward and participation system. It is open to information exchange in a top-down and bottom-up manner (Kuru 2000:87).

As punitive and rewarding, the evaluation of the attitudes of the members of the leader group by looking at the level of compliance with the goals of the group or the definite group rules, and the award and punishment of the group members within the specified limits are among the powers of the leader (Freedman et al.1987:17). The leader gains the opportunity to control his group with the punitive and rewarding method. When the coach takes on this task, he must make sure that he takes an equal approach to all his athletes. In the opposite case, the chain between the spore and the one breaks; The groundwork for a chaos environment that can burn within the group is prepared. Apart from that, it would be wrong to apply only punishment and reward. The trainer's establishment of an authority based on respect and love over all his athletes is related to his behavior in punishment and reward distribution and his sense of justice (Dinçer and Fidan 1996:5).

2.4 Definition of Digital Leadership

The ongoing complexity of social structures and relationships, which are increasingly based on modern digital technologies and are creating exponential increase in data flows, brings to the fore the question of the formation of the digital economy. The significance of continuing processes allowed for the discussion of the emergence of a new sort of economy, in which relationships relating to the production, processing, storage, transmission, and use of an expanding amount of data take precedence, data serve as the foundation for economic analysis, this looks into how modern socioeconomic systems work. Several experts believe that, the availability of data on a resource and the ability

to use it to plan an economic agent's operations is now more essential than the fact that the resource is owned (Prentice, 2013:7).

Based on this, the "digital economy" should be defined as a modern style of management characterized by the dominant role of data and methods for managing it as a defining resource in the fields of production, distribution, exchange, and consumption, according to our perspective.

Leading in the digital age is much more difficult and complex than leading a world where there are no opportunities, no technology. Leadership until the last century; While it is a concept based on power and military intelligence, today leadership is almost never associated with physical power. It is obvious that 20 years from now, there will be no relationship between leadership and physical power. In the future, leaders will only be able to survive with their intelligence, strategies and moves, and they will drag their masses in this way (Prentice, 2013:7). As stated above, being able to lead in the digital age will be much more difficult than in the past and even more difficult today. Even in recent years, when technology and digitalization have just spread around the world, developments and changes have started to make leadership and management phenomena difficult and complex (Bennis, 2013:635). For the audience, handling too many variables at the same time and dealing with these factors one by one makes the job of a leader difficult and burdened.

People who will lead in the digital age cannot exhibit sufficient leadership behaviors with only their charisma, only knowledge, only vision, as they were before. In a globalizing world order where the breath of competition is always felt and the economic and political conjuncture changes from moment to moment, the leaders of the new age should have many of the following characteristics (Toduk & Gande, 2016:2):

- To be able to evaluate from different points of view.
- Being future oriented
- Have a vision.
- Have the ability to encourage people.
- To have the ability to perceive and solve problems.

- Have the ability to empathize.
- To maintain management by trying new approaches
- To adopt a philosophy of continuous learning
- Making it easier for people to do their jobs.
- Searching for opportunities and providing opportunities to people
- Inspire both with their behavior and their speech.
- To motivate people
- Providing innovation and being an entrepreneur
- Having digital skills
- To abandon standard practices and methods when necessary
- To have a strong business network
- To be able to create strong collaborations.
- Acting with passion
- Keeping the business going and being carried out - as a silent leader - without talking too much.
- To be able to actively use social media tools and to be able to intervene by learning the negativities especially about the institution on time.
- Have at least basic level, if possible intermediate digital skills
- Having strong communication skills
- To be able to acquire and manage information.
- To be able to keep up with fast and continuous changes.
- To ensure sustainable change

It can be said that those who have most of these features and equipment have higher leadership potential in the digital age. Those who can adapt their characteristics and behaviors to the new age and step forward by improving their skills will be the people who are sought after and preferred in management levels in the digital age. Each of the above features does not have the same

severity. In fact, these characteristics may differ according to different variables such as industry, organizational factors, and audience. However, some essential qualities must be possessed by a good leader, even if any distinction is made. Characteristics such as being entrepreneurial and innovative, possessing digital skills, having a strong vision and keeping the audience aware of this, pursuing innovation and establishing sustainable business relationships can be among the most important for the digital age.

2.5 Previous Research on Digital Leadership

Today, leaders can access larger data in a short time, make rapid analysis and develop pioneering strategies. The digitalization process is defined as a tool that will carry the company to the future, managed by the leader. In this case, digital leaders need to learn how to use technology, not how it works, to create a competitive advantage. Throughout history, leaders' trust in changing environmental conditions, motivation of employees and their communication with them have been affected by technological developments, as Ulutaş and Arslan (2017: 109) pointed out. Organizations are searching for leaders who are flexible, diverse, and younger, as well as innovative leadership models that follow the digital road in business processes.

By pushing the boundaries of traditional leadership hierarchies, companies reveal a new leadership understanding that can read rapid change. To make their organizations successful in the digital world, leaders need to think, act and react differently. For this reason, the most critical need for most companies is that leaders develop digital skills. (Abbatiello, Knight, Philpot, & Roy, 2017: 77--83). Table 2 shows examples of cognitive, behavioral and emotional abilities that leaders must possess in order to make their organizations successful in the digital world.

Table 2.2: Transforming Leadership Capabilities

Cognitive transformations	Behavioral transformations	Emotional transformations
Conceptualizing possibilities in the virtual world Coping with ever-increasing cognitive complexity Making practical decisions without all the information	Adaptation to changing power and spheres of influence Cooperation with different teams Valuing the contribution of new business partners and interest groups Learning from successes and trying again with high energy and motivation	To be able to tolerate an environment of risk and uncertainty Show flexibility in ever-changing conditions Do not dare to change business processes Directing change and having leadership self-confidence

Source: Abbatiello, A., Knight, M., Philpot, S., & Roy, I. (2017). Rewriting the rules for the digital age: 2017 Deloitte Global Human Capital Trends. Birleşik Krallık: Deloitte University Press., s. 79

In today's conditions, the development of leadership characteristics is possible for Türetgen, Ünsal and Telman (2004: 27), especially with the increase in the importance of quality and speed and the ability of organizations to adapt to this environment. This situation has created the need for leading managers who manage change instead of managers who preserve the current structure and have increased the importance of those who have leadership qualities in the selection of managers.

Information age leader is always willing to advance his knowledge, experience and skills and must adopt continuous learning as a principle. In this way, as the leader of the future, he will move himself and the organization he manages one step beyond the competitors (Kırmaz, 2010:214). According to information age leader Kırmaz (2010), while drawing the route of the change process and creating a high-performance culture, Ünal (2012:298) should be able to transform data into a form that can attract people's attention and mobilize them, according to Ulutaş and Arslan (2017:112). It should be able to do the routing job with the power of information and communication.

According to Ulutaş and Arslan (2017:118), the IT leader is "an individual who is approved and loved by his team, as perhaps all leaders should be". Digital leaders must allow the organization to adapt to the information age and to improve business processes. It should motivate the organization and provide the necessary equipment to keep open the channels of continuous learning and development. Being adaptable to changing conditions, visionary, participatory and sharing is also among the behaviors expected from IT leaders. Data has never been as important for leadership level decisions as it is today (Ünal, 2012:305).

2.6 Changing Leadership Perception with Technology

Companies in practically every industry have taken numerous steps in recent years to investigate new digital technologies and take use of them. These initiatives affect products, processes, organizational structures and managerial strategies, often involving the transformation of key business activities. Companies adopt new management styles in order to manage these complex transformations and efficiencies. An important approach to changing management styles is to create a digital transformation strategy that serves centrally to unify all digital coordination, processes and practices within the company. The potential business benefits of digitalization vary widely. In addition to new areas of interaction between all stakeholders, it also includes innovations in the field of value creation with increases in supply and demand (Matt, Hess, & Benlian, 2015:339).

Ünal(2012:302) touched upon the importance of the concept of informatics leadership with the following paragraphs: Studies on establishing a leadership understanding suitable for the characteristics of the information age lead to the emergence of new leadership approaches. It is rapid change that creates value in today's organizations. The ability of businesses to adapt to changing situations is critical to their long-term success. This can be accomplished through information-flow-supportive management.

The new social structure, called the information society, information society or network society, is marked by four fundamental structural changes that reshape leadership: These signs; It is defined as the rapid and wide-ranging

technological changes, the digitalization of information and communication channels, the transition to information-centered production, the spread of the organizational structure that is more dispersed and away from the hierarchy. The new leadership traits will differ significantly from country to country, culture to culture, and sector to sector, particularly in economically developed countries and the ICT sector. New social conditions reveal new forms of leadership necessary to initiate and sustain transitions to more knowledge-intensive societies. Leadership in the digital age necessitates new attitudes, abilities, and knowledge obtained through unique professional experiences that respond to the social qualities listed above (Wilson, 2004:858–861).

Decision making in the digital age increasingly relies on data; business strategy is becoming a continuous process. Digitalization is about continuous change management; It requires a neutral understanding of the external environment. On the other hand, digitalization requires the reorganization of the organizational mission, a higher level of cooperation in this context, as well as digital understanding and capabilities. Digitalization should be supported by the corporate culture of the enterprise. The expected and experienced changes in leadership due to digitalization are expressed as follows (Bukepha Group, 2018: 6):

- In the future, leadership methods will confront challenges as geographical and physical accessibility become less important.
- Sharing, learning, and communication will all be possible through virtual platforms.
- In the future, there will be less hierarchy in the business environment and less difference between leaders and followers.
- Everyone can be a leader and a follower at the same time.
- Workplaces will be more mobile, adaptive, multinational, and sensitive to cultural differences.

Digitalization will require a cultural change for managers. This change will be much more challenging than the technological challenges businesses will face.

Examples like Nokia vividly demonstrate that insisting on outdated management principles poses a threat to the further existence of the entire company.

Leadership in modern businesses is essentially legitimized by personal and social competencies, while legitimation through expert knowledge and hierarchy or command structures will be pushed into the background. The system perspective will replace the mechanical worldview.

Kane et al. (2016: 4) examined that how digitally developing companies build their cultures and create the talents that carry them forward. Their findings highlight the need of making a purposeful effort to develop a successful digital culture. Companies that are digitally mature are constantly improving their culture. Around 80% of digitally mature firms' respondents said they are actively participating in their companies' efforts to foster risk taking, agility, and collaboration. Top talent appears to be more determined to digitally mature businesses. Businesses will be more likely to retain talent if they provide tools and opportunity for senior vice presidents, vice presidents, and executive-level leaders to develop themselves in the digital world.

2.6.1 Leadership Perception Differences Between Generation X and Y

Generation X, according to Benson and Brown (2011:1845), has a structure that does not show long-term commitment to work, believes in work-life balance and is reluctant to take leadership roles by evaluating work with an action-oriented perspective. In terms of leadership perceptions and attitudes, Gen X leaders tend to be fair, competent and honest. They believe that providing employees with freedom in their work by supporting diversity in work habits yields better results. (Fore, 2013:53).

Y generation leaders, on the other hand, attach importance to the teamwork predisposition seen in the Baby Boom generation, the decision making and task sharing ability in the Silent generation, and the enhancement of the technological competencies in the X generation. Y generation employees have a structure that attaches importance to personal relations with their colleagues as well as being compatible with very advanced technology. The leadership perception of the generation Y develops in parallel with the participatory relationships they establish with their parents. For this reason, as they prefer

leaders who act as mentors and are willing to direct them, they are also willing to listen to them (Fore, 2013:53–55).

Today, with the retirement of the employees of the Baby Boom generation, Y generation employees have started to actively contribute to the workforce, even to the top positions that employ and guide the X generation. For this reason, it becomes more important to understand the differences and managerial perceptions between these two generations that contribute to the workforce (Reisenwitz & Iyer, 2009:91).

Not only large companies and small recruiting agencies have begun to apply the theory of generations to improve HR processes. The theory of generations plays an important role in interpersonal communication, helping to better understand the needs of others. When recruiting personnel, you should always remember that people of different generations have different needs. For everyone, the concept of "dream job" is different. Xs work for the sake of career growth and stability, at the expense of pleasure. Gamers work for pleasure, separating work and personal life, where preference is not given to a career. Knowing these subtleties and characteristics of candidates, it is possible to adjust the vacancy and select staff pointwise. This reduces the risk of recruiting an irrelevant candidate, speeds up the process of hiring a new employee.

The forces that will affect leadership in the new millennium According to Türetgen, Ünsal, and Telman (2004:27), the pace of change, globalization, information age, restructuring of companies and decision-making descended to lower levels of the company. The business values and world views of the generations show some differences. These differences are highly influential on both beliefs, goals, and value judgments, and on shaping perceptions and expectations for leadership in business life.

2.7 Digital Leadership in Strategic Terms

The digital space is already considered as an integral part of the human environment. Its features are a multifactorial impact on society and individuals and the problem of information inequality both in terms of the level of implementation of digital and information technologies and, if possible, access

to information, which is of particular importance for a multi-structured economy. Each country that demonstrates success in creating a digital economy, it has its own strategy and certain priorities for industrialization based on the use of digital technologies, its own experience, and there is no absolute leader in the development of all its aspects.

Customers and the ecosystem benefit from digitization, improve company processes and eases the transition to new ways of conducting business and thinking, beginning with organizational structures, branding, and structures to stay up with the digital age (Mert, 2019: 221). Digitization, digitized resources; It is the action of turning it into operational results that will provide new revenue, growth, and benefit for the organization. The term "digitalization" refers to the process of developing new products and services by introducing new business models that combine information, resources, and digital technology in a novel way, to create new products and services, and the organization of technology in accordance with these resources in order to use corporate resources effectively (Accenture Digitization Index, 2016: 12). Organizations today; with the changing consumer behavior, the speed of development of technology and the increase in digitalization, business models, products and services have to keep up with digitalization in order to ensure positive experiences of customers and improvement of business conduct (Mert, 2019: 221).

Digitalization creates new approaches that will have an impact on all industries and organizations for the national economy, and it becomes difficult to continue activities of organization without application of these approaches. Organizations' future plans, programs, policies, and strategies, as well as their development, investment, and applications, all benefit from digitalization. (Fırat and Fırat, 2017: 10). The institution wants to develop its products with digital technology and use it as a driving force. The institution must have appropriate structural features to learn new technologies. The institution must effectively implement sustainable innovation learning strategies. The wishes and attitudes of the managers and employees in the institution are the main requirement for their success. With the establishment of continuous training, the institution

should encourage its employees to acquire digital competencies (Karaçuha and Pado, 2018: 121).

Today, technological changes and innovations have removed all regional, national and international barriers between sectors and made it almost impossible to limit the technologies and campuses of institutions. It is inevitable for countries and institutions that cannot manage the rapidly developing technology to lag behind the information society (Öğüt, 2016: 168). The process of change in information technologies the strategic management has reflected this as well, practices of the institution and enabled the systems to be more effective (Eroğlu & İrmiş, 2004). With digitalization, every institution will have to implement change management in leadership policies and strategic management processes. However, the industry in which the institution operates, as well as the sector's participation in digitization, have an impact on the rate of change. Managers and workers of the institution should continue their work in a coordinated manner once the digitization process has begun, ensuring digital transformation in their activities. The knowledge, talents, and vision of the top manager and leader are necessary to achieve digital transformation. Only the top manager has the authority to start the digital transformation process, and the leader must update the company model and strategic management approach to accommodate digitalization.

The digitalization process of strategic management will be more effective when the employees in the corporate structure are allowed to create a spontaneous innovation within the organization with the idea platforms of innovative and creative ideas about new products and services. In the digital age, products and services should be considered based on digital technology. With continuous training, encouraging behaviors should be introduced to monitor and develop the digital competencies of employees. The effectiveness of digital technology and digitalization procedures determines the institution's strategic management success in the digital age. (Karaçuha and Pado, 2018: 121).

2.7.1 Digital Leadership in terms of HRM

HR 4.0 is a brand-new concept born out of the fourth industrial revolution. HR 4.0, which is molded by technology advancements such as the Internet of

Things (IoT), big data analytics, robotics, and fast data networks, intends to make next-generation personnel management more successful. (Hecklau et al., 2016). Existing human resources management is being transformed into HR 4.0 through research. The resource-based approach and resource dependency theory are two primary perspectives that can aid in the transition to HR 4.0. Both models link the presence of distinctive resources within the organization to innovation. These theories explain why organizations innovate when they have access to valuable resources. According to the resource-based view (Barney, 1991), firms that are successful in accumulating resources that are difficult to copy by others have a competitive edge. This advantage includes the ability to think creatively. According to resource dependency theory (Pfeffer & Salancik, 1978), organizational innovation is dependent on how well organizations link with the players in their environment in order to gain access to important resources. These perspectives are equally applicable to human resources management, given that the human aspect is the most significant resource for enterprises. Human resource management can help to organizational innovation by providing strategies to increase employees' abilities and maximize their job efforts (training, incentive, etc.). (Koster, 2019). In order to respond to digital change, human resource management must promote organizational innovation. (Göktaş & Baysal, 2018:1415)

There are some challenges that organizations will face when implementing HR 4.0, as well as some gains that they will get once they begin. Difficulties with implementation include choosing the correct technology tools, overcoming present corporate culture, and balancing the expectations of various generations in the workplace. Attracting, developing, and protecting the next generation of talent; effective and rapid HR operations; and leaner HR departments are just a few of the benefits of implementing HR 4.0. (Sivathanu & Pillai, 2018: 7). According to Ma and Je (2015: 72), HR 4.0 may be classified into three categories: operational, relational, and transformational. Administrative operations including payrolls and employee data are part of operational human resources. Business procedures such as recruitment, training, and performance management are all examples of relational human resources. Strategic human resources initiatives such as knowledge management are examples of

transformational human resources. Software and network-based applications are used by these three categories of human resources to keep operations running.

2.7.2 The Necessity of Digital Transformation

As a result of globalization and developing technology, organizations in every field continue to digitalize rapidly. The differentiation of communication tools and the widespread use of BTS allow people from different cultures to work together. Organizations consisting of teammates working at different times and places are proliferating around the world rather than local organizations. It is inevitable for those who manage this digitalized and transforming structure to adapt to change (Ulutaş & Arslan, 2017:106-110). Companies need to create a central digital transformation strategy to manage their digital transformation processes. Integration of digital technologies often involves the majority of companies, affecting their products, business processes, sales channels and supply chains. Therefore, digital transformation strategies often focus on the company's BTS management, renewal of business development processes, and human resources management.

In the international sense, the digital economy is a networked, systemically organized spatial structure of relationships between business entities. It includes the sector for creating and using new information, technologies and products, telecommunications services, e-business, e-commerce, e-marketplaces, remote services and other components. (Ulutaş & Arslan, 2017:106-110)

The transition from the third to fourth industrial revolutions is reflected in the digital economy. The third industrial revolution, often known as the digital revolution, reflects a shift from analog electronic and mechanical devices to digital technologies at the end of the twentieth century. The digital revolution is the foundation of the fourth Industrial Revolution.

While some people now utilize technology to complete routine jobs more quickly on a computer, the digital economy is far more evolved. It's not simply about using a computer to execute things that were formerly done by hand or with analog instruments. The ability and necessity for organizations and individuals to use technology to complete their assigned duties better, faster,

and frequently differently than before is highlighted in the digital economy. (Matt, Hess, & Benlian, 2015:339–341).

Furthermore, the word refers to the ability to use technology to do jobs and engage in activities that were previously impossible. Such opportunities for existing organizations to do better, do more, do something differently and do something new are included in the corresponding vision of digital transformation. The digital economy goes far beyond digitization and automation. Instead, this new paradigm harnesses multiple leading-edge technologies and new technology platforms. These technologies and platforms include, but are not limited to hyper communicability, advanced analytics, wireless networking, mobile devices and social media.

The support of senior management is required throughout the entire transformation process, starting with the initial planning phase. Such large transformations in companies can result in resistance from different areas of the organization. Overcoming resistance requires transformation leadership skills, and the active participation of different stakeholders affected by the transformation is extremely important (Matt, Hess, & Benlian, 2015:339–341). Businesses today are taking advantage of all the opportunities offered by technology, such as BTS, advanced analytics, robotics, and 3D printers to advance business through digital transformation. The entire ecosystem of companies, including employees, customers, suppliers and partners, is affected by this transformation. Companies that effectively manage digitalization add new sources of income to their business models by improving their existing business processes. In this way, they create new customer experiences by replacing their old business models with a new and superior model.

Digital leaders increase the efficiency levels of the organizations they manage. Digital transformation directly affects organizational structures, business processes and strategies together with people living and working in the new reality (Meffert & Swaminathan, 2018:44). Digital transformation is a continuous initiative that shapes companies and operations. Therefore, it is essential to assign managers sufficient and clear responsibilities for the implementation of the digital transformation strategy. The person who is operationally responsible for the digital transformation strategy must have

sufficient knowledge of transformation projects and must be directly compatible with strategic goals. For this reason, in addition to positions such as General Manager and IT Manager, the position of Digital Transformation Manager emerges (Matt, Hess & Benlian, 2015:341)

3. INNOVATION PROCESS IN ORGANIZATIONS

3.1 Concept of Innovation

Innovation is a moving cycle from the birth of new information or entrepreneurial idea to its transfer to the production stage and presentation to customers (Aygören, 2011: 8). Therefore, there are innovations that create social or economic value in the innovation phase (Erkek, 2017: 13). The models that explain the stages of innovation can be briefly mentioned as follows: It can be said that these models are handled in two classes in terms of their main boundaries. The stages covering these models are explained below (Erkek, 2017: 15).

a) Linear models: According to the results of the research; The main factors of the models mentioned are the stages that encompass the diversity of industrial research institutions and organizations, and the development processes obtained in the laboratory environment, to the work of large companies with R&D departments (Langvik et al., 2005: 387).

b) b) Interactive models: It includes the feedbacks in the interactions between technological and scientific infrastructure systems and market activities and the interactions that companies exhibit in their innovative applications related to their environment (Fischer, 1999: 14).

Customers, competitors' activities, the market should be carefully observed at all stages of the innovation process. In the light of the studies on the subject, it states that only two out of every ten products newly launched in the USA and only two out of a hundred products that have been newly launched in Japan. For this reason, understanding the needs of consumers correctly is one of the main factors in the success of the product to be put on the market. Therefore, understanding customer demands correctly is the most important factor in new product success (Özgün, 2009:12).

The innovation process cannot be separated very clearly. In some cases, ideas arise before the needs arise. In other cases, the innovation initiation phase follows the emergence of the need. When the need for innovation is accepted, innovation is developed and implemented quickly. The innovation phase is a rational process driven by organizational goals that are not necessarily sequential. Innovation partly develops under the control of rational administrators, and sometimes under the influence of unexpected situations and external forces (Robey, 1991: 430).

Innovation management is one of the areas of strategic management carried out at the highest level of the company's management. The purpose of innovation management is to establish the main vectors of scientific, technical and production activities of the company.

Innovation management is an independent area of economic science and professional activity aimed at creating and ensuring the achievement of innovative goals by any organizational structure through the expedient application of labor, material and financial resources. The concept of management has quickly and firmly entered today's Russian economic lexicon, being in its essence an analogy to the concept of management. It is widely used in relation to diverse socio-economic processes in enterprises operating in the current market conditions. Together with the principles, processes and methods of general management inherent in every enterprise in general, there are separate types of it that apply specific forms of management of various functional areas of the enterprise or types of economic activity. They are called functional management. For example, the management of production processes is the content of production management, financial processes - financial, investments - investment, personnel - personal management, etc. (Erkek, 2017: 15)

Innovation management is one of the many varieties of functional, the direct object of which is innovation processes in all their diversity, carried out in all areas of the national economy. Innovation processes are quite specific, large-scale, complex and diverse in their content, an object of management that requires the use of special forms and methods of managerial influence for effective development. In today's conditions of radical reform of the country's

economy, when innovations are an obligatory element of all structures from government bodies to medium and small businesses, the use of scientific methods of innovative management is becoming an essential factor in the country's economic development, survival and commercial success of any IP (innovation process). (Özgün, 2009:12)

3.1.1 Definition of İnnovation

Innovation is a process of constant renewal in various areas of the distribution of production. An innovation is any development in technical and technological spheres that stimulate the production activity of renewal. Innovation is implemented based on a comprehensive analysis of work in order to determine the opportunities for its potential in the market. Comprehensive analysis consists of: (Eraslan et al. 2008, 24)

- 1.considering a preferred position in the market for products;
- analysis of the position of products in new markets;
- Evaluation of manufactured products from the standpoint of the feasibility of production;
- considering perspectives! release of a product for new market segments;
- evaluating the transformation in the sales system. Innovation is the main means of developing an enterprise in the market.

The prerequisites for the emergence of innovation are activated by consumers, new scientific discoveries, or the needs of the firm. In connection with the innovation process, the amount of risk in the market will be determined. If a firm creates an innovation for a new market segment, the risk is significantly lower than if the innovation is a scientific discovery. (Atasoy, 2007, 26).

Innovation is divided into two types: product (new product) and process (new technology, methodology, labor organization).

When carrying out intraorganizational innovation, the innovation is developed and applied within the boundaries of the firm, the innovation does not have a commodity form. When conducting interorganizational innovation, the

responsibilities of the developer and manufacturer of innovations are separated from those of its consumers.

The strategy that determines development influences the innovative behavior of the firm. The firm conducts reactive or strategic innovation in relation to the market situation or the chosen strategy.

Reactive innovation is an innovation that ensures the competitiveness of a firm in the market, innovation is implemented as a resistance to competitive firms. Reactive innovation retains market segments for the firm, but does not provide added value.

Strategic innovation is an innovation that brings added competitive advantages in the future when implemented. Strategic innovation is more about creating exceptionally new needs. (Atasoy, 2007, 26).

Basic innovation - original solutions, as a result of which new industries are formed based on scientific discovery.

Modifying innovation - solutions that bring significant changes to the main innovations, they do not change the principles, but improve the indicators of pioneer models.

Pseudo-innovation - solutions that bring minor changes to the main innovations.

As soon as an innovation is accepted for implementation, it receives a new property - it becomes an innovation. The time period between the creation of an innovation and its implementation into innovation is called an innovation lag.

Innovation in general means the use of innovations in order to make a profit as the latest technologies, types of products and services, organizational, technical and socio-economic conclusions. (Atasoy, 2007, 26).

The fact that researchers who have gained a reputation in the field of innovation have been defined since 1910 and that new definitions are made today prove that this concept contains many riches. Looking at the definitions of innovation made by looking at different angles from past to present, it is clearer that the concept of innovation cannot be expressed only with a word such as innovation. In the 1930s, the concept of innovation was introduced by Schumpeter (1934, 69-70) to introduce a new quality of a product that consumers are not yet

familiar with or a product that they are not accustomed to, the introduction of a new production method, the discovery of a new market, reaching a new product source, it was expressed as having a new organization.

According to Schmookler (1966), a business makes a technical change if it develops a new product or service for itself or uses a new method or input for itself. The first enterprise to make a certain technical change is the innovator and this action is innovating. Drucker (1985, 14) defines it as “the production, acceptance and implementation of new ideas, processes, products and services”.

In the post-1990 definitions, the concept of innovation expresses a completely new product, service or process, as well as a new product, service or process for the enterprise. In addition, it is emphasized that innovation, which is defined by not only other businesses, but even themselves, has become a necessity in today's markets (İrmiş & Özdemir, 2011, 139). Farr and West (1990, 9): “It is the introduction and implementation of ideas, processes, products, and procedures designed to benefit the individual, group, organization or society, and newly defined by the practitioners and users”. Damanpour (1991, 528) defined it as "the adoption of a tool, policy, program, process, product or service that is internally produced or obtained from external sources and can be perceived as new in the enterprise". Birch and Clegg (1997, 7), one of the important names in the field of technology and innovation, say that innovation is not only a change-oriented approach in business life, but also a tool that helps to differentiate your business and products from your competitors or to solve problems that cannot be solved by following certain paths from the past to the present. stated that it was a vehicle. Barker (2002, 21) made an ambiguous concept interpretation for the meaning of innovativeness. Later, he interpreted innovation as making new or doing something new. Freeman and Soete (2004, 2) stated in their study in the field of economics that innovation will determine whether the whole quality of life will get better or worse. On the basis of these determinations, they emphasized that innovation does not only mean more quantities than the same goods, but a bundle of goods and services that did not exist before, outside of our dreams. Elçi (2006, 3) says that innovation is not just an economic system; It also stated that it is a social system that eliminates inequalities, creates employment and contributes to the protection of the

environment. Özçiftçi and Sarıçay (2014, 388) state that innovation in enterprises refers to the planned changes in the activities of the enterprise with a view to improving the enterprise performance. If a generally accepted definition of innovation is to be made; An innovation is the realization of a new or significantly improved product (good or service) or process, a new marketing method or a new organizational method in internal practices, workplace organization or external relations (TÜBİTAK, 2005,50).

It is seen that all definitions contain the concept of "new". However, the development and modification of the products, having different features and providing easy usage for the producers and consumers do not meet the new-innovation concept. It is anticipated that the concept confusion will continue due to the fact that the concept of innovation has a wide meaning, is subject to different definitions and is future-oriented. However, in many studies and in this research, the word innovation has been used as the equivalent of the concept of innovation, as it is an easy-to-use tool that reminds innovation and will be used in future research due to these features.

3.2 Features of Innovation.

It has been determined by many researchers that innovation is important and accepted for businesses in recent years. Considering the importance of countries to measure innovation performance recently, it is seen that countries also attach importance to innovation and innovativeness. From this point of view, it can be concluded that innovation is important for businesses and countries. On the emergence of innovation, Pearson (2003: 49) states that good ideas often emerge from the process of looking closely at customers, competitors and one's own business. In this context, innovation has importance for the country's economy on a macro basis and for businesses on a micro basis. In addition to these, it is also important for customers who are directly or indirectly affected by innovations. In this context, innovation has been evaluated under 3 headings in terms of its importance.

An innovative type of economic development is the logic of the development of an innovative company, which leads to a shift in the center of gravity from operational tactical planning and management to the strategic level, to the level

of formation of a new type of management - innovative marketing. With a high activity of the external environment with its social and political conflicts and shocks, information and technological transformations, the behavior of the economic system and its structure-forming elements begins to acquire an increasingly probabilistic and unpredictable character. In these conditions, the survival of enterprises is directly dependent on the ability of managers and their ability to navigate in unexpected situations, to anticipate risk. (Terzioğlu et al. 2008: 378) It retains various fragments of traditional principles, but applies them to situational analysis. This allows the company to optimize its activities in the face of a continuous search for innovations, sources of capital and new markets. In such circumstances, the situation as a whole is determined by the interaction of the conditions of the internal and external environment. In innovative marketing, the methods, approaches and style of effective leadership change depending on the situation. Each stage of the innovation life cycle requires different methods and approaches, different marketing strategies and tactics. The system of innovative marketing measures is closely linked not only with production renewal systems, but also with the dynamics of capital accumulation and overflow. The most important direction of marketing activities is the strategy and tactics of innovation penetration into the market, including the formation of a competitive innovation strategy based on the formation of sales channels and positioning of a new product. Positioning is a system for determining the place of an innovation among the range of products already on the market. The aim of positioning is to strengthen the position of the innovation in the market. Positioning a new product means, first of all, competition between a new product and existing products. Positioning an innovation is defining its place among the existing ones. So, from the standpoint of a marketer, innovation can be understood as a qualitatively new product that has no analogues, new for a given company or a given market, and an imitation product that already has analogies in domestic or foreign practice, and a product with a new field of application. A product of fundamental novelty is distinguished from a product of market novelty, from a modifier product, from an applicant product and from a substitute product, any innovation should be distinguished by its purpose from complementary, displacing and displacing innovation. (Terzioğlu et al. 2008: 378) This moment does not play a special

role at the stage of production of an innovation, but becomes crucial when an innovation enters the market. Both the success of the innovation and the marketing strategy depend on this. Positioning affects a variety of marketing activities: sales, advertising, commodity, price, service, etc. The concept of innovative marketing provides not only the conquest of new customers, but the optimal use of the company's competitive advantages, the multiplication of spheres of influence through diversification and expansion of the company's areas of activity and expansion into new industries and new markets.

It is extremely important for businesses to engage in innovation activities not only for that business, but also for a country's economy in general. Considering the effects of innovation on economic growth, development and competitiveness, it is very important to understand how micro-scale innovation activities are performed and what effects they have created (Terzioğlu et al. 2008: 378). With the production of new products and services, it will bring vitality to the domestic market and local businesses, as well as accelerate the development of economies with new opportunities in international trade (Wang and Kafourus, 2009: 610).

With the globalization of firms, markets and technologies, it is seen that the roles and technology policy-making capacities of states / governments have changed significantly. States have now begun to compete for more prosperity within their own regions, and at this point, the importance given to change, and development has started to increase. Public support for innovations has begun to be accepted as an important element of modern and prosperous economies (Yavuz et al. 2009: 71). In addition, it is accepted that innovation is important for sustainable growth, social welfare and employment in a country. In this respect, it is great importance to create the necessary environment for innovation in countries. Countries that are aware of the importance of innovation today encourage their companies to allocate resources for innovation, as well as the legal and administrative regulations required to enable them to successfully carry out their innovation activities (Ersoy and Şengül, 2008: 64). In addition to this information, Toraman et al. (2009: 103) listed the importance of innovation for the country's economy as increasing employment

and quality of life, accelerating economic growth, achieving sustainable growth, and ensuring the continuity of businesses in times of financial crisis.

On a micro level, innovation brings advantages such as increased market share, compliance with global business requirements, competitive advantage, cost advantage, business growth, increased productivity, and increased profitability. (Toraman et al.2009, 103). Given that the winds of change, which began with both the industrial revolution and subsequently intensified, have had a profound impact on society and enterprises (Köse, 2010, 275), innovation is critical for businesses.

Hong et al. (2012:420) emphasized that the importance of innovation was emphasized by many researchers and that the development of businesses will be provided by innovative activities, however, to enhance and protect earnings and improve market share, firms require innovative goods and procedures.. Evaluating the importance of innovation from an economic perspective, Freeman and Soete (2004:2) stated that the wealth of nations is important not because it is seen as a way to raise and increase welfare in a narrow sense, but because it enables people to do things that have never been done before. Porter (1990:58) stated that a nation that can increase productivity can gain competitive advantage in international markets, and innovation are required to increase productivity. In this context, it appears that innovation is an important factor in increasing efficiency and therefore profitability.

Innovation is great importance not only for those who want to maintain or increase the rate of economic growth in their own countries or others, but also for those who want to change the direction of economic development or improve the quality of life. Innovation is considered vital for the long-term conservation of resources and improvement of the environment. In this context, it is emphasized that innovation activities are important for businesses and individuals for the prevention of many types of pollution, economic recovery of waste goods, social innovations as well as technological development (Freeman, Soete, 2004:2).

3.3 Types of Innovation

There are many classifications in the literature about innovations that are extremely important for businesses and are applied in different ways in many departments. Innovations are encountered in product, management, process, marketing activities, in short, in all factors in the internal and external environment of enterprises. Hence, it is extremely important that innovation types are not considered independently from each other, for the success and sustainability of innovation. Innovation types have been determined by official institutions and this subject has been covered in many literatures. In the Oslo Guide (2005:51), which is valid in many countries on innovation types, innovation types are evaluated around main topics; According to the areas where it is made; are listed as product, process, organizational and marketing innovations.

Innovation is reflected in all activities of the organization. It is seen that many different classifications are made regarding innovation according to the areas where it is applied and the impact it creates. While innovation is classified as radical and incremental innovation according to the degree of change and difference it creates, it is classified as product, service, process, marketing and organizational innovation according to the application areas. Classifications regarding innovation are primarily handled over technical activities. The interaction of innovation with other fields of activity in the organization expands its classification around technical activities. In Table 3, Paul Tortt's innovation classification, which examines innovation types in a wide range, is included.

Table 3.1: Types of Innovation

Types of Innovation	Scope of application
Product Innovation	New or existing product development (new generation mobile phones, android phones)
Process Innovation	Developing a new production process
Organizational Innovation	A new risk unit, a new internal communication system, new methods and practices regarding new accounting processes
Manufacturing Innovation	Quality circles, zero stock production system, new production planning system, new quality system
Commercial / Marketing Innovation	New financial regulations, new sales approach
Service Innovation	Internet-based financial service (internet banking, telephone banking)

Kaynak: Paul Trott, Innovation Management and New Product Development, 3 rd Edition, Prentice Hall, Pearson Education, 2005, p.17.

In Table 3, it is seen that the types of innovation basically differ in product, process and organizational level. This classification includes product and service innovation that focuses on new or improved products and services. As seen in Table 3, innovation types; It varies with production, marketing and managerial processes. In this context, the types of innovation detailed by P. Trott are basically considered as the diversification of product and process innovations.

The concept of marketing innovation is the basis of the entire marketing service, market research and the search for a competitive enterprise strategy. Market research is the major responsibility of marketing departments at the outset of their search for innovation: the degree of demand and competition, consumer behavior and preference dynamics, the availability of rival products, and the possibilities of securing the novelty on the market. Six basic steps encompass marketing strategy, market analysis, and operational marketing: (Freeman, Soete, 2004:2).

- general market economic analysis
- economic situation analysis;

- customized market research
- the creation of a strategy for innovation penetration;
- operational marketing activities;
- marketing-related cost and revenue estimates

Innovative marketing, in the modern sense, is a synthesis of strategies, corporate philosophy, functions, and management procedures, as well as a methodological foundation..The concept of innovative marketing for countries in transition is relatively new. In industrially developed countries, the marketing concept of the company's development has occupied an honorable place for decades. It should be noted that the formation of innovative marketing as a scientific discipline took place only in recent decades.

Innovative marketing is marketing that includes the mission of the organization, philosophy of thinking, research area, management style and behavior. It is organic, not imposed innovation, a special type of relationship and complete risk-taking. Innovative marketing has a social orientation, followers. Its most important types are strategic and operational components. (Freeman, Soete, 2004:2).

3.3.1 Product Innovation

According to the Oslo Guide (2005: 52), product innovation is expressed as a new or significant improvement of a product according to its existing features or foreseen uses, and the introduction of new goods or services. It; It includes significant improvements in technical features, components and materials, unified software, user convenience and other functional features. Developing a new product, creating a different product or making a change or difference in the product owned and launching the product created as a result of these means product innovation (Gök, 2010: 46).

Chaffre and Doret (2017:63)proposed a classification of goods based on the depth of changes in the physical or perceived individual characteristics of the goods:

- original products in which significant signs of novelty prevail in design, new elements, principle of operation, characteristics that

can be attributed to radical innovative products. This can also include goods obtained using such a creative approach as "lateral marketing" (roundabout, non-standard);

- updated products, in which some physical parameters change while maintaining the basic characteristics. Such products are the result of vertical marketing technologies;
- goods with new positioning. Only perceived characteristics are changed, which can also be the result of vertical marketing technology.

When considered in terms of the service sector, the innovation activities of service businesses that do not have a wide range of products are limited compared to manufacturing enterprises, and also service innovation and manufacturing innovation are different from each other. The reason for this difference is the complexity of service innovation and tight communication with the customer (Labitzke et al. 2014: 235). To give an example, tourists want to obtain products and services that are different from the services and products they have previously received, that can surprise them, excite them, and can be described with great pleasure in their immediate surroundings, which can be considered interesting and even a bit strange (Bektaş and Durna, 2007: 417). In this respect, businesses can create a new product perception with changes to be made in existing products as well as product innovation in a new product.

3.3.2 Process Innovation

Pierce and Delbecq (1977: 28) define innovation as the first application and adoption process of new ideas, products, services and business processes in the organizational structure. In the Oslo Guide (2005: 52), process innovations are defined as reducing unit production or delivery costs, increasing quality or producing new or significantly improved products. In other words, process innovation is the development and change of production methods or delivery methods.

Luecke (2011: 10) stated that people think about the facts in the physical context when innovation is mentioned. In addition to this phenomenon, innovations in the production process play an important role in the competition

of industries and companies. However, it is stated that process innovation has a positive effect on product innovation. Innovations made in the production method directly affect the costs of the products. Process innovations include new or significantly improved software, equipment and techniques in auxiliary support activities such as purchasing, accounting, calculation and maintenance (Oslo Guide, 2005: 51).

Product innovation encompasses the introduction of technologically new or improved products. A technologically new product (radical product innovation) is a product whose technological characteristics (functional features, design, additional operations, as well as the composition of the materials and components used) or the intended use are fundamentally new or significantly differ from similar previously produced products. Such innovations can be based on fundamentally new technologies or on a combination of existing technologies in their new application (including the use of research and development results). Microprocessors and VCRs are examples of radical innovations (fundamentally new). The first portable cassette player to combine the essential principles of tape recorders and miniature in-ear loudspeakers was an innovation of the second type. In both cases, no finished product has been produced before.

A technologically improved product (in the terminology of the Oslo Guidelines - incremental product innovation) is an existing product, the quality or cost characteristics of which have been noticeably improved through the use of more efficient components and materials, partial changes to one or a number of technical subsystems (for complex products). In this context, Kırım (2008: 48) interpreted process innovation as an area that can carry very important growth opportunities. However, it is thought that, with process innovations, methods to introduce existing products or services to the market in a much more efficient and more effective way can be developed. As a result of this situation, it is thought that the company will increase its profit share.

3.3.3 Organizational Innovation

While other types of innovation cover the production phase of products and products, unlike them, organizational innovation includes innovations related to

management. The adoption of a new organizational method in the firm's business processes, workplace organization, or external relations is referred to as organizational innovation. (Oslo Manual, 2005: 51). Organizational innovations are projected to boost business performance by lowering administrative and transaction expenses while also increasing employee satisifaction., providing access to non-commercial assets, or lowering tool / equipment costs.

The application of a novel way in running a business, managing jobs, or structuring external relations is known as organizational innovation. The goal of these innovations is to improve the organization's efficiency through lowering administrative and transaction costs by increasing employee satisfaction with the organization of jobs (working hours) and thereby increasing labor productivity by gaining access to assets that are not on the market or reducing the cost of supplies. An organization does not have to be the first to implement these organizational innovations. It doesn't matter if the innovations were developed by your organization or other organizations. (Appelbaum, et al. 1998: 295).

Business innovation means the implementation of new organizational methods of business. These include, for example, the implementation of corporate knowledge management systems, the implementation of training systems aimed at developing employees and reducing employee turnover, the implementation of production and supply management systems in general, in particular, supply chain management systems, production rationalization, and quality management systems. (Oslo Manual, 2005: 51).

In the external connections of the organization, new organizational methods imply the deployment of new ways of structuring ties with other organizations, new types of collaboration with customers or scientific institutions, in the field of manufacturing, innovative ways of integration with suppliers, outsourcing or subcontracting relationships, procurement, distribution, solutions of personnel and support questions.

In other words, organizational innovation includes new management practices that focus on the success of the business mission and strategy. These management practices create new coordination methods between people and

departments with new business designs, as well as new organizational processes, new rules and principles of doing business (Appelbaum, et al. 1998: 295).

3.3.4 Marketing Innovation

In the Oslo Guide (2005: 52) Marketing innovation is defined as a new marketing strategy that includes major improvements in product design, packaging, positioning, promotion (promotion), or pricing. Marketing innovations aim to respond to customer needs more successfully, to open new markets or to position a company product in a new way in order to increase the sales of the company. Kırım (2008: 49) interpreted marketing innovation as a more concise definition, improving customer contact processes.

Innovative development of an enterprise is the process of forming and improving the organization's technical and technological foundation, focused on the final results of its economic activity through technical and technological innovations. The goals of technical and technological innovation are: (Eren et al. 2005: 208).

- design improvements that reduce the design and technology complexity of manufactured products;
- decreasing product material consumption by the adoption of innovative materials;
- technical procedures that are complexly mechanized and automated;
- the use of robotics, manipulators and flexible automated systems;
- sophisticated electronic and computer-based automation and regulation of production management procedures, etc.

The modernisation of equipment contributes to the development of the technical and technological base., technical re-equipment, reconstruction and expansion, new construction. In order to innovate in marketing, it is an important requirement for businesses to have marketing skills. An important factor in developing marketing capabilities is the way information is integrated. For this, it is necessary to create unifying processes where information-based and visible resources are brought together to create valuable outputs (Eren et al. 2005: 208).

3.4 Innovation Process

In the literature review, the innovation process is defined as the set of activities that start with the formation of new knowledge, continue with the discovery of new products and processes, and end with commercial gains (Toraman et al. 2009: 102). It is emphasized that the innovation process is one of the important activities in the implementation of innovation (Abidin et al. 2013: 255), furthermore, the complexity of the innovation process makes it difficult to establish absolute principles (Oslo Guide, 2005: 28). Despite its complexity, the innovation process is simply shown in Figure 1. Innovation process; idea generation, realization of ideas and commercialization of ideas (Sattler, 2011: 12).

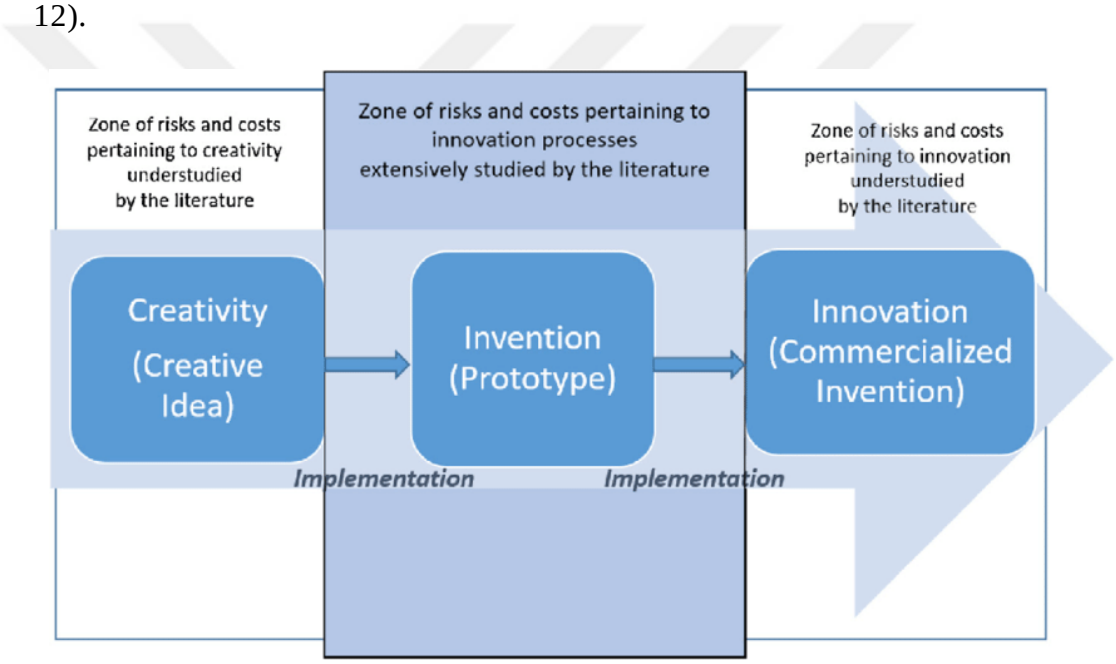


Figure 3.1: Innovation process

Source: https://www.researchgate.net/, 21.04.2021

Idea Generation: In order for the innovation process to start, first of all, a need that requires innovation must be felt. Factors such as the failure of products or services to meet customer expectations, changing customer demands and expectations, shrinking the company's market share, the enterprise's desire to gain competitive advantage, and technological developments are the driving forces for generating ideas. Although idea generation does not have a commercial value in the beginning, it is great importance for the emergence of innovation.

Realization: Innovations created as an idea take on a concrete image at this stage as a physical product, service or process. This stage is the stage of development and implementation of emerging ideas. It is the stage in which innovation ideas that achieve success or show success above expectations in the tests applied by enterprises are started to be applied for commercial purposes.

Commercialization: The final stage, commercialization, is defined as the introduction of a new product, service or production method to the customer. This stage of the innovation process is related to the production, introduction and presentation of innovation to the target market (Aksay and Orhan, 2013: 14). Commercialization is the final test for the business dimension of ideas. After this point, customers make the evaluation (Luecke, 2011: 17).

When the literature is examined, the stages that businesses have the most difficulties are; it appears as idea generation and commercialization. Although innovative ideas constitute the beginning of the innovation process, it is not sufficient for the commercialization and implementation of innovation (Toraman et al. 2009: 102). However, Mentor (2009: 16) emphasized that new ideas may encounter many obstacles before they reach the commercialization stage. For example, the idea of copying innovation can prevent innovation from generating ideas for organizations. This situation negatively affects the innovation performance of enterprises. In another example, the shelving of new ideas on the grounds that the business will create additional costs can hinder the innovation process at the idea stage. One of the most important roles in the innovation process is the employees' perspective to innovation. Because employees have an important place in all stages of innovation. In order for businesses to come up with new ideas when necessary, it may be necessary to make new decisions about the business structure and business employees, and to implement trainings. Within the framework of the importance of the managers on innovation and the necessity of innovation activities, innovative ideas can be encouraged by forming innovative teams with some support.

In addition to these, when a market opportunity is identified, the concepts or new ideas that emerge are evaluated by decision makers who must discover solutions to a variety of issues. (Luecke, 2011: 16):

- Is this a viable idea?
- Does the firm possess the technical expertise required to bring this concept to life?
- Does this concept make sense or provide value to customers?
- Does this concept fit into the company's overall strategy?
- Does it offer a considerable cost savings?

Ideas that give positive answers to these questions and find institutional support will later reach the commercialization stage and the innovation process will be completed. Ideas will start to be known as innovation. Another of the most important points in the innovation process is that the stages of the process should not be considered independently from each other. The evaluation of opportunities, the development and implementation of ideas, the timing of the innovation are important factors in the innovation process. However, it should be kept in mind that the success of the process may vary depending on the size of the business, the market where the business is located and the preferences of the customers.

3.5 Innovation Performance

Innovation is the output of a process that can result in introducing new products and processes to the market, developing a new technology or creating a new market. Organizations carry out activities for product and process development by “inventing new” or “improving the existing” within the framework of radical or incremental innovations. All stages of the innovation management process and other activities of the organization affect the innovation performance. In this context, all variables and all process outputs that will affect the innovation management process play an important role in innovation efficiency. In addition to innovation activities, the organization has to carry out routine activities that will realize cash flow. For this reason, it is not enough to make determinations about the efficiency and performance of innovation with only numerical results and it is misleading to evaluate innovation activities independently from other activities of the organization. Therefore, the measurement of innovation

performance is more meaningful by comparing the outputs obtained as a result of processes directly and indirectly related to innovation with expected values.

An innovative enterprise is an enterprise that introduces product or process innovations, regardless of whether the originator of the innovation is employees of the organization or external agents (external owners, banks, representatives of federal and local authorities, research organizations and technology providers, other enterprises).

To obtain a higher return on innovation, a classification of innovations is carried out. The need for classification, that is, dividing the entire set of innovations according to one or another characteristic into appropriate groups, is explained by the fact that the choice of the object of innovation is a very important procedure, since it predetermines all subsequent innovative activities, which will result in an increase in production efficiency, an expansion of the range of high technology products, growth of its volumes.

The most characteristic indicators of innovations are such indicators as absolute and relative novelty, priority and progressiveness, the level of unification and standardization, competitiveness, adaptability to new economic conditions, the ability to modernize, as well as indicators of economic efficiency, environmental safety. All these indicators of innovation are, in fact, the embodiment of indicators of the technical and organizational level of innovation and its competitiveness. Their importance is determined by the degree of influence of these factors on the final results of the enterprise: on the cost and profitability of products, their quality, sales and profits in the short and long term, the level of profitability of economic activities. Indicators of the technical level of innovation determine the technical level of production as a whole.

It should be evaluated as an inductive result, considering the technical and social dimensions of innovation performance. Innovation performance is an issue that needs to be considered multi-dimensionally. In this part of the study, the dimensions of innovation performance and indicators that can be direct and indirect will be discussed in detail.

3.5.1 Definition of Innovation Performance

Performance is the degree of achievement of organizational goals, that is, results for determining success (Wenjing vd., 2013:25). Innovation performance, which is defined as the results within the scope of innovation, is the organizational goals that are explained and reached by the assimilation capacity of the organizations (Florencia vd., 2013:135). Evaluating the applications and outputs related to innovation, comparing expected results with the actual shows the performance of the innovation. Innovation performance: new ideas, new products, processes and system models are defined as the success indicator of the organization (Hagedoorn, Cloodt, 2003:431). The definition of innovation performance is expressed as the goals of each stage in the innovation management process and the results achieved by achieving these goals.

The phrase "organizational performance" refers to an overall measure of success that is influenced by a variety of factors. When an organization's periodic or integrated performance is described, it should be recognized that all of the elements that contribute to its development or affect it in some manner are expressed at the same time. Organizational performance refers to the end outputs of all material and people, which encompasses a lot more.

As can be seen, considering the general tendencies of the literature, organizational performance phenomenon can be examined under four main headings in general. Organizational performance, which is generally divided into groups as innovativeness, market, production performance and financial performance, and the ways and methods to be followed in its measurement are stated below.

- Innovation performance covers the process from the emergence of an idea in a broad sense to its introduction in the market as an invention (Ernst, 2001) and ultimately extends from R&D to patenting and introducing new products or services. From a different perspective, it can be argued that innovation performance focuses on both the technical characteristics of innovation and its introduction in the market (Hagedoorn & Cloodt, 2003). From this point of view, it can be stated that innovation performance covers innovative processes as a whole from beginning to end. In other words, functional processes such as

innovation development, presentation and promotion processes, such as productive, managerial and marketing, are related to innovation performance.

Hagedoorn and Cloodt (2003), in their comprehensive study, the innovation performance indicators of business lines using advanced technology; R&D entries, patent numbers, patent references and new product announcements. Kivimöki et al. (2000), on the other hand, emphasizes the importance of perceived innovation efficiency in this measurement. Although the innovation performance of an organization has been measured on the basis of quite a variety of factors, references to patents and patents and notifications of new products have been reported by many researchers (Bulut et al., 2009; Calantone, 2002; Comanor and Schrerer, 1969; Dutta). and Weis, 1997; Ernst, 2001; Günday, 2007; Hagedoorn & Cloodt, 2003; Katila, 2004; Kivimöki et al., 2000). Therefore, it can be argued that indicators related to patents are the most important factors in measuring innovation performance.

Within the scope of production performance, it can be said that having a high level of competence in the axis of quality, time, cost and flexibility is the main goal. Especially after Skinner's (1969) study explaining the importance of production strategies in gaining competitive advantage, important studies were carried out on this subject in the USA and Europe in the early 1980s. One of Skinner's main arguments; functional managers focus on quality, time, cost and flexibility and decide whether they can compete on this basis (Neely and Austin, 2004: 45). After this, many researchers (Corbett and Van Wassenhove, 1993; Ferfows and De Meyer, 1990; Filippini et al., 1998; Flynn et al., 1996; Rosenfield et al., 1985) investigated the definitions of these dimensions of production performance and how they are measured.

According to the sand cone model of Ferdows and De Meyer (1990), the performance improvement process takes place in a sequence that starts with quality and progresses to reliability and flexibility, resulting in efficiency and costs. Filippini et al. (1998) discussed production performance in terms of economy, quality and time performance. Rosenfield et al. (1985) took into account costs and delivery time. According to another research, production performance; delivery time, quality consistency / capability, productivity, sales costs were evaluated on the axis (Flynn et al., 1996). A little different from

these, Corbett and Van Wassenhove (1993) proposed the triple classification consisting of costs, time and quality in production performance measurement. According to this classification, the time dimension includes the dimensions of innovation, reliability and flexibility, and it is stated that these three dimensions often occur at the same time.

Innovation occurs as the product of a synergistic effect created by the participation of everyone in the organization. Therefore, innovation performance is in close relationship with the results of the activities of all individuals and units that contribute to the innovation management process. Innovation performance measures both the variables that affect the innovation management and the radical and incremental innovation outputs. It is seen in studies conducted in this field that innovation performance is also associated with organizational performance. Organizational performance is defined as the success of achieving profitability, growth and organizational strategies in sales and market share related to organizational goals (Hult et.a., 2004:40). Innovation performance and organizational performance are considered to be complementary in terms of the impact of innovation outputs on organizational performance (Gunday et.a., 2011?655). Innovation dynamics that create a catalytic effect in the innovation management process. In other words, it affects the innovation performance. In this context, measurement of innovation performance, its dimensions, and measurement criteria related to the innovation management process will give clues about the interaction of this concept with innovation dynamics.

3.5.2 Measuring Innovation Performance

Innovation performance measurement is the interpretation of information obtained from inside and outside the organization. As a result of the innovation performance measurement, the organization determines the impact of the developments in its environment on the innovation activities in a timely manner. Innovation performance measurement covers all decisions that will achieve the goals of the organization and include activities in this direction. Determining and applying the correct metrics in performance measurement should be monitored systematically. The characteristics of a good performance measurement are expressed as follows (Daniel et.a., 2006:260):

- Clear goals should be determined: The necessary information to achieve the goals should be provided.
- Accuracy and precision must be ensured in information: Innovation performance measurement should be built on accurate and complete information.
- Timing must be done right: Correct and complete information must be given to the right people at the right time.
- It should reflect the process: Continuous feedback should be provided for the development of the process and how the process works can be followed.
- It should reflect the practices: Criteria should be determined to show customer-oriented outcomes.
- Focus should be focused on activities that create value: Only activities that add value to innovation should be measured, purified from activities that are not related to innovation, and key criteria should be applied.
- Focus on development: In innovation performance measurement, feedback that serves the development of the organization and helps to achieve its goals should be provided.

Innovation performance measurement is a process that reflects the organization's mission, vision, goals and objectives. The innovation performance measurement system is desired to be qualitative and support qualifications associated with the goals, programs and critical success factors of the organization. In the measurement of innovation performance, goals and objectives are determined in the perspective of finance, customer, business processes and innovation management processes and their realization levels are determined. Fulfilling the metrics within this scope depends on the dissemination and measurement of information within the organization as simply and clearly as possible. Innovation performance determines how the expectations and needs of the customer will be satisfied and evaluates the critical factors that will meet the customer demands. The determined performance criteria show all organization members how the innovation

activities will affect the organization. Performance criteria support organizational learning and focus on continuous improvement (Zizlavsky, 2014:215). Parallelism between the objectives of the organization and the objectives of the innovation management process increases the innovation performance of the organization. The harmony between the goals of the organization and the goals of the innovation management process also affects the innovation performance.

3.6 Firm Innovation Concept

Organizational innovativeness is an organizational process that covers technological, scientific, financial and commercial steps and leads to the realization of innovations. This process can sometimes be a new activity on its own, or sometimes it can be activities that contribute to the realization of innovations and are necessary (Uzkurt, 2008: 31). Organizational innovativeness includes the application of a new organizational method in the financial applications of the company, the organization of the firm or its external relations, the propensity of the enterprise to innovate and the use of the basic tools that will serve to realize this innovation request. Organizational innovation occurs in situations such as changes in organizational structure, application of advanced management techniques and organizational structures, and implementation of different innovation strategies (TÜSİAD, 2002: 27). A new management system related to the organization, a new product, service, production technology, production process or a new marketing idea can be related to organizational innovation (Uzkurt, 2008: 91).

Organizational innovations include significant changes in organizational structure, management systems, knowledge and managerial skills used for management work, job designs and rewarding systems that enable a business to be managed successfully and use its resources effectively (Damanpour et al., 2009: 655). Organizational innovation contributes to the process of creating new ideas for problem solving with participatory management in an organizational environment. In this regard, benefit expectation, knowledge, social pressure, group communication and perceptions of injustice affect the development of innovation.

Organizational innovation is the adaptation of an idea or behavior that is new to the organization, a new product, service, process, technology or a management application to the organization. It emphasizes the trend of the enterprise in initiating and implementing different types of innovation such as organizational innovation, technology, product and process. In this light, organizational innovation is a notion that encompasses several aspects of organizational elements such as technical, behavioral, and product innovation. (Salavou et al., 2004: 1094). Organizational attributes, such as size, resources, structural features, environment, and culture, are linked to organizational innovation. (Obendhain et al., 2004: 95). The first implementation of an organizational model that encourages employees to contribute their ideas by giving them more autonomy in decision-making can be given as an example of organizational innovation in enterprises.

Organizational innovativeness is the development of new working and business methods or the use of existing methods by adapting them to business needs and conditions (Elçi, 2007: 10). In organizational innovations, the organization focuses on issues such as the current capacities of internal dynamics and organizational parameters that are shaped and changed in line with demands. Interdisciplinary solidarity and flexibility in practice culture stand out as an important factor in the success of organizational innovations (Damanpour, 1991: 565). Since the product and process innovations that constitute technological innovations are directly related to the basic business activities of the enterprise, they generally include changes in the operation systems of the enterprise. Organizational innovations, on the other hand, include the changes in the management systems of the enterprise, as they are indirectly related to the basic business activities of the enterprise.

3.6.1 Factors Affecting Firm Innovation

Nowadays, it has become almost a necessity for businesses to innovate. Especially businesses that want to gain an advantage in a sustainable competitive environment are trying to develop their strategies in this direction. It is critical to investigate these aspects that have a significant impact on enterprise innovation management and play a significant part in their innovation kinds and strategies.

There are certain features of an innovation in the literature. The first of these is relative advantage. It expresses the degree of social prestige, economic and the benefit provided by an innovation rather than the ideas it brings. The second is convenience. Individuals and / or groups who want to adopt an innovation focus on the benefits and appropriateness of that innovation as long as they feel that the innovation benefits them. They understand that innovation must have a concrete or abstract equivalent. When the benefits and appropriateness of innovation are certain, it becomes easier for the adopters to be positioned. Complexity is another feature of innovation. It indicates the degree of difficulty in using and perceiving an innovation. Even if it is suitable for innovation adoption, the complex situations it may create in its implementation will delay the time of innovation adoption. Therefore, when you introduce an innovation, it will be more beneficial to launch the innovation very openly and publicly. Another feature is testability, the degree to which an innovation can be based on experimental and scientific foundations. As long as new ideas or new innovations can be tried, the rate of learning and adoption will increase. Finally, a feature of innovation is observability. It indicates the extent to which others can see the effects of innovation. Observability is one of the important factors in other units' adoption of innovation. Because the observability feature may vary from individual to individual. If we make it understandable as being an organization that learns innovation, it is necessary to activate the diffusion feature in innovation as well as information. Those who analyze and observe the appropriate innovation well will perceive the advantages of innovation in a shorter time (Faiz, 2012: 9).

Joseph Schumpeter, an economist, first defined the concept of innovation as "the driving force of development" in his book written in 1911 and translated into English in 1934. Thompson (1965) treats innovation as a process of change, which he defines as the adoption of a change that is new to the business and the environment it depends on. Saying that innovation can be a new thing or an improvement in a product or process that can be perceived as new, Mohr (1969) expresses two dimensions of innovation, both creating something new and improving an existing thing. In this sense, all activities that are forward-looking developers over old or new things are considered as innovation. Damanpour

(1991) defines innovation as the adoption of a tool, policy, program, process, product or service that is internally produced or obtained from external sources and can be perceived as new in the enterprise. In this sense, more emphasis is placed on sources of innovation. When innovation is considered on a country basis, it is seen that it has many vital functions such as providing economic growth, when considered on a business basis, the organizational effectiveness of the enterprise, improving working conditions, and ensuring flexibility to combat the business environment (Bozkurt, Göral, 2013: 2).

It is not easy to apply the concept of innovation in business organizations. Some organizational barriers need to be overcome. It is a fact that many things that are well planned or anticipated fail in implementation. When the organization needs change, it is necessary to realize this change quickly. Managers talked about the difficulties of the tasks they will tackle. Four obstacles are encountered (Kim, Mauborgne, 2014: 147-148):

- The first is cognitive, it is about raising awareness among employees that strategic change is necessary.
- The second hurdle is that resources are limited. It is thought that the greater the change in strategy, the more resources required to implement it.

The third obstacle is motivation. How can you encourage crucial actors to break free from the status quo and do so fast and decisively? It can take years to do this, and managers don't have that much time.

The last obstacle is policy. As one manager put it, "before you stand up in our organization, you get hit and fall down". Because those who have a status quo in a place do not leave it easily because they make an effort to reach their position. Although all companies face different degrees of these barriers, and many only encounter some subgroups of the four, knowing how to overcome these barriers is the basis for reducing organizational risk.

3.6.1.1 Organizational Factors

The first of the internal factors affecting the innovation environment of the companies is the use of the appropriate reward system. The second component is management support, which is linked to management's willingness to make

innovative projects easier to implement. The third factor is the availability of appropriate resources (time, money, government support, etc.) for innovative activities. The fourth factor is the organizational structure that provides a high degree of autonomy. Another factor related to the organizational structure that positively affects the innovation process is the informal relationships of employees in the same firm. The last factor is willingness to take risks and tolerate mistakes (Eren & Kılıç, 2013:225).

Organizational factors significantly affect creativity and innovation in businesses. Businesses trying to survive in global competition are aware that vital issues such as participation in management, organizational commitment, encouragement and rewarding cannot be realized without full organizational support. Organizational rewards and favorable work conditions (pay, promotion, making a job as attractive as possible, and impact on organizational policies) contribute to perceived organizational support (Timuroğlu, 2015:42).

According to Burmaoğlu and Şeşen (2011:11), who cited Damanpour in their meta-analytical literature review, the determinants of organizational innovation are information sources, material resources used, internal and external communication, and organizational structure (specialization, functional differentiation, centrality, formality, etc.). counts as variable (Burmaoğlu & Şeşen, 2011:15). As can be seen, the factors affecting innovation and creativity are handled in different ways in different studies. Organizational factors affecting innovation and creativity can be examined in six main groups by using these studies. These; organizational culture and climate, strategy, organizational structure, leadership, communication, support mechanisms (Kale, 2010:270).

3.6.1.2 Organizational Structure and Culture

People's feelings and intuitions about what they should do and how they should act are influenced by culture. In other words, organizational culture refers to the prevalent values and ideas that shape employees' attitudes and behaviors. (Güçlü, 2003:142). The sum of an organization's values, beliefs, and practices that guide people's conduct is referred to as organizational culture. (Dursun, 2013:56). According to Martins and Terblanche, it is inevitable that the cultural elements of the organization have an impact on the creativity and innovation of the organization. According to Schein, Martins and Terblanche, organizational

culture in this respect, on the one hand, creates a basis for the behavior of the employees of the organization, on the other hand, plays a guiding role for the strategies to be developed. It is stated in the literature that organizational culture is an important factor in the innovativeness of companies. However, there is no generally accepted result about which culture plays a leading role in creating a more innovative firm structure (Uzkurt & Şen, 2012:38).

It has been suggested in Obendhain and Johnson and various studies that there is a positive relationship between organizational culture and organizational innovativeness. According to Büschgens et al., Organizational culture is generally accepted as a concept that can support innovation (Özkan & Turunç, 2015:56). Innovation starts with creative ideas. Creativity requires individuals who have creative qualities and feel themselves in a free and supportive working environment. Innovation also requires groups and organizations that have a shared vision, knowledge diversity, integration of effort and skills, and practical support for innovation. According to Amabile et al., The positive effect of climate on creativity within the organization can be mentioned. According to Nybakk et al., the creativity of an organization originates from its employees and climate is important in motivating employees for creativity (Ercan & Begenirbaş, 2013:238).

The concept of climate has been discussed in two different ways in the literature, which helps to emphasize that organizational climate is all-encompassing in both senses. Climate, in its first commonly used sense, is expressed as a common understanding, a common reaction of individuals to a situation. In its second sense, the concept of climate refers to the series of situations that have an impact on individuals' behavior (Halis & Yaşar Uğurlu, 2008:106).

Organizational climate can be defined as the characteristics of the psychological environment that distinguishes an organization from others and influences the behavior of individuals. Since organizational climate is closely related to psychology and the factors that affect the behavior of individuals within the enterprise, it is seen that organizational climate research includes elements such as creativity, innovation and motivation. When the studies on the subject are examined, it is understood that the individual's perception of the organizational

climate in which he / she operates as a supportive of innovation affects his / her innovative behavior positively (Özbağ, 2012:147).

3.7 The Determinants of Innovation Capacity

Innovation is a critical component of a company's ability to maintain a competitive edge, and innovation capability is regarded as one of the most important features of a company's competitive advantage (Silva et al., 2008: 92). In terms of innovation, initiative, and entrepreneurship, as well as developing new features and technologies and stimulating competitiveness in businesses, innovation ability is a critical aspect. (Tajvidi, 2015: 65).

Development and Economic Cooperation it describes organizational innovation as "the development of a new or significantly enhanced product (good or service), a new marketing approach, or a new organizational method in internal practices, workplace organization, or external relations." (OECD, 2005; 46). In this definition, it is accepted as a generally accepted definition in the literature. However, innovation capacity has been defined in various ways, and there is a very few common opinion in the literature regarding the measurement of this variable (Oura et al., 2016: 924). Because the number of factors related to innovation capacity is so high that it is practically not possible to add a comprehensive list to any empirical research (Koç and Ceylan; 2007: 107).

"The capacity of the firm to participate in innovation, that is, to bring new processes, products, or ideas to the organization," Koç and Ceylan (2007) defined innovation capacity." (Koç and Ceylan; 2007: 105). Romijn and Albaladejo (2002) defined innovation capacity as "the knowledge and skills required to effectively absorb existing technologies, develop them and create new ones". The ability to continuously turn knowledge and ideas into new products, processes, and systems for the benefit of the firm and its stakeholders," Lawson and Samson (2001) defined innovation capacity. " (Lawson and Samson, 2001: 384). Szeto (2000) defines innovation capacity as the continuous improvement of skills and resources to develop and use new products in order to meet the market needs of companies (Szeto; 2000: 140). Suarez-Villa (1990) defined innovation capacity as "measuring the level of

innovation and innovation potential in any nation, geographical area or economic activity" (Suarez-Villa, 1990: 290-310).

Innovation capacity is not only an ability to run a business in a new business or to manage general business skills, but also to the ability to synthesize business paradigms (Lawson and Samson, 2001: 384). Innovation capacity is not itself a separately definable structure. Reinforcing habits and processes within a company is what capacity is all about. These procedures are an important part of the encouragement process, measure and strengthen innovation (Lawson and Samson, 2001: 388). In terms of innovative capability, innovation is divided into two categories; the first is the creation of knowledge and ideas, and the second is the implementation of those concepts in practice. Creating knowledge in a firm is a basic principle of innovation, and it is extensively used by any firm that wants to promote it. (Omar and Nazri, 2016: 189).

The ability of a company to consistently innovate ahead of its competition is referred to as innovation capability. These characteristics allow a company to join a new market, jump to a higher quality level than its competitors, or copy and improve a company faster than its competitors in order to acquire a competitive edge (Qian and Li; 2006: 882). Innovation capacity includes a variety of factors that enable firms in the long run to be innovative. It's important to distinguish between capabilities and resources (Forsman; 2011: 740). Amit and Schoemaker (1993) distinguish between resources and skills by arguing that resources are stocks of existing factors that an organization owns or controls (Amit and Schoemaker; 1993: 33-34. Capabilities, at the other hand, influence innovation capacity since they refer to an organization's ability to utilize its resources. (Forsman; 2011: 740).

Resources refer to a set of existing factors that a company owns or controls, whereas capabilities refer to a company's ability to employ these resources in accordance with its procedures, routines, and other actions that are part of that process. (Amit, Schoemaker, 1993). Innovation capacity is frequently measured solely in terms of a company's formal R&D operations and the ability to match innovation output with new products.

3.8 Innovation Performance Definition

Performance can be expressed as the percentage of success achieved by an organization in a certain time period. In other words, performance is a quantitative and qualitative description of how much an individual, a community or an organization can achieve the intended goal with that job (Baş & Artar, 1991: 13). The number of innovation studies they have done in line with their technological competencies and the level of success or failure that these innovations have achieved in the market in terms of business profitability and market share" (Bülbül, 2014: 10). The results for the innovation performance are obtained as a result of the renewal and development studies carried out in the product, process and organizational situation, taking into account the various aspects of organizational innovation (Günday et al., 2011: 665).

Innovation performance: The strategy of the enterprises indicates the number of innovation studies they have provided within the scope of their current market and technological competencies and the level of success or failure that these innovations have brought in the market in terms of business profitability and market share (Bülbül, 2014: 10). Innovation performance is related to both production-oriented, management and marketing-oriented functional processes such as innovation development, presentation and promotion processes. Accordingly, it can be said that innovation performance is a process that includes innovation processes from beginning to end (Yavuz, 2010: 148).

The technical possibilities, economic sphere, environmental conditions are constantly changing, and the level of competition is gradually increasing. Businesses are obliged to continue their innovation functions in a planned and systematic manner in order to reach their targets and ensure their sustainability in such rapidly changing fields of activity. Continuous monitoring of the changes and developments in the market leads to the formation of new information and ideas. In this respect, there is a need to measure and analyze innovation activities in many businesses that are based on innovation activities. However, making the measurements correctly and analyzing them correctly is the most important part in this process. Because the analysis of the results obtained gives information about the current performance status of the

enterprise and it becomes possible to predict the future of the enterprise in line with this information (Zerenler et al. 2007: 655-656).

Prajogo and Pervaiz (2006: 500) examined innovation performance in two dimensions: product innovation and process innovation. They evaluate technology management and R&D management as innovation capacity. The human factor determined as the stimulus of innovation is described as leadership, people management, knowledge management and creativity management. According to the researchers, innovation performance is evaluated as product and process innovations in which these factors have a positive and significant relationship.

3.8.1 The İmportance of Innovation Performance

Although it is desired to determine the innovation performance of an enterprise depending on various factors, it can be said that especially the references to patents and patents and notifications regarding new products are very important factors in determining the innovation performance (Yavuz, 2010: 148). Academic studies in our country list the widely accepted indicators used in determining innovation performance as R&D inputs, patentable products and processes, number of patents, and the number of new products announced to the market (Alpkan, 2005: 130). Accordingly, it is seen that the number of patents is effective in measuring innovation performance. The excess number of patents owned by the firm will be beneficial in gaining competitive advantage and will bring higher performance.

Another determinant of innovation performance is the structure of human resources. Another issue that should be emphasized about the impact of human resources on innovation performance is innovative business behavior. In this direction, the behavior points to the interest of employees in innovation, such as improving the way of doing business, creating a healthy communication bridge with colleagues, using technology and developing new products. In particular, the ownership of an employee's job and the existence of loyalty-based human resources policies increase the employee's innovative work behavior performance and contribute positively to the efficiency of generating or implementing new ideas. In general, flexible job design also positively affects

the innovative work behavior of employees (Dorenbosch et al., 2005: 129). Özdevecioğlu, et al. (2009: 605), in their study investigating the effect of human resources practices on the innovation performance of enterprises, discussed innovation performance in two dimensions within the scope of product and process innovation.

Innovation performance measurements of enterprises make it possible to show the outputs of the innovations that the business has already realized in order to generate new ideas. Senior executives of many businesses also put innovation performance as a prerequisite for the realization of the innovation activities planned (Liu, et al., 2015: 32). The innovation performance of businesses is affected by a number of factors. We can list these elements as the learning ability of the company, the capacity to grasp information, the human resources policies it applies and the cooperation relationship it establishes with its external environment. Especially, the effect of cooperation with the personnel in its immediate outer environment on the innovation performance is considerable (Demirel, 2015: 67). Stone et al. (2008: 5) stated that innovation performance is a process involving complex stages rather than being easily measurable.

The dimensions that consider innovation as a process and measure the performance of this process vary considerably. The indicators that measure the performance of the innovation process determine the cost of the innovation project, the time spent to realize this project, and the extent to which the targets determined in advance and varying according to the project have been achieved. However, in the studies using these performance indicators, each innovation was considered as a separate project rather than measuring the performance of each stage of the innovation process, and these indicators were examined as a kind of "project evaluation dimensions" (Demirel, 2015: 69). The organizations' knowing the information they obtain from their environment and using this information effectively will reflect positively on their performance. Moilanen et al. (2014: 447) state that businesses with high innovation performance owe this situation to their high cognitive potential.

4. IMPACT OF DIGITAL LEADERSHIP ON INNOVATIVENESS IN THE SME

4.1 Purpose of the research

The aim of the research is to investigate whether digital leadership practice and innovation capacity influence innovative performance, and if so, what is its degree. This study includes studies and statistical values on digital leadership, innovation capacity and innovative performance perceptions. When the literature studies are reviewed, it is seen that no studies have been conducted in SMEs on the "Effect of the Digital Leadership Application and Innovation Capacity on Innovative Performance". This work: Turkey, İstanbul was carried out with the participation of people who are not working executives and managers in SMEs in general. If it is understood that the digital leadership practice and innovation capacity has an impact on innovative performance, employees in SMEs will consider the importance of digital leadership and innovation capacity structure in order to effectively manage their individual performance. Thus, it will give a deeper perspective to performance management applications.

4.2 Questionnaire

The research was carried out in Istanbul, Turkey. Within the scope of the research the questions were prepared completely in digital environment and addressed to the participants using mail, WhatsApp and Facebook applications.

İstanbul Turkey has participated in a total of 425 public and private sector employees to research conducted by employees. Employees are classified according to gender, age, education level and years of experience.

In the research, the digital leadership scale developed by Ulutaş and Arslan (2018) was used to measure the digital leadership perceptions of the participants (Ulutaş & Arslan, 2018:109-118).

While creating the survey questions, the innovation performance was taken from Sabiha Cansu Atakan's master thesis titled "The Effect of Innovation Strategies on Innovation Performance and An Application" for innovation performance survey questions.

Innovation capacity is the most commonly used in the literature, Oura et al. It was developed on the basis of the scale developed by (2016). In this context, innovation capacity, "R&D Capacity (4 Questions)", "Marketing Capacity (5 Questions)", "Production Capacity (4 Questions)", "Learning Capacity (4 Questions)", "Management Capacity (5 Questions) “Resource Utilization Capacity (5 Questions)” and “Strategic Capacity (4 Questions)” (presented in Appendix 1) and consists of 31 questions.

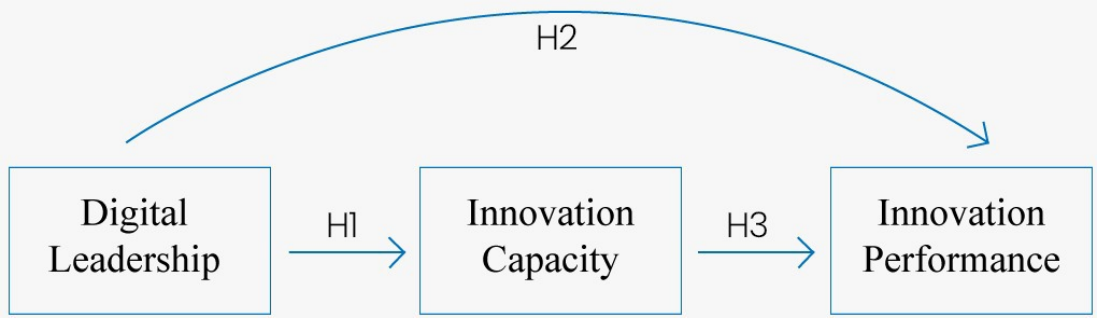
4.3 Research Model and Hypotheses

As a result of the study, it was aimed to answer the following questions:

1Does Digital Leadership Affect Innovation capacity?

2Does digital leadership affect innovation performance?

3Does innovation capacity affect innovation performance?



Hypothesis 1: Digital leadership has significant effect on Innovation capacity.

Hypothesis 2: Digital leadership has significant effect on Innovation performance.

Hypothesis 3: Innovation capacity has significant effect on Innovation Performance.

4.4 Analysis of Research Data.

4.4.1 Data Collection Method

Quantitative data collection method, one of the data collection techniques, was used in the research. A sample mass consisting of employees of the same institutions in corporate companies operating in the province of Istanbul was selected over the Internet and digital survey questions were sent to them. The number of collected questionnaires is 445. The research was carried out between 10 April-24 May 2021.

20 of the collected questionnaires were incorrect or incomplete, so they were excluded from the study. As a result, 425 questionnaires were considered suitable for analysis. After the data collection phase was over, the data were analyzed with the İBM SPSS 25.0 package program.

4.4.2 Research findings

4.4.3 Demographic Characteristics of Participants

As it seen on Table 4.1 according to the gender distribution of the participants, 190 (44.6%) of the 425 participants were female and 235(55.3%), were male.

Table 4.1: Gender Distribution

Gender	Frequency	Percent	Valid Percent
Male	235	55.3	55.3
Female	190	44.7	44.7
Total	425	100.00	100.00

Age information was asked in the form of a categorical question and the researcher collected them in 7 groups up to 24 years old, 25-29, 30-34, 35-39, 40-44, 45-49, over 50 years old. According to Table 4.2 93 people are up to 24 years old, 94 people 25-29, 70 people 30-34, 63 people 35-39, 33 people 40-44, 33 people 45-49, 39 people 50 and over. The highest distribution in this group is in the 25-29 age group with 22.1%.

Table 4.2: Age Distribution

Age	Frequency	Percent	Valid Percent
24 and younger	93	21.9	21.9
25-29	94	22.1	22.1
30-34	70	16.5	16.5
35-39	63	14.8	14.8
40-44	33	7.8	7.8
45-49	33	7.8	7.8
50 and above	39	9.2	9.2
Total	425	100.00	100.00

Education level information was asked in 4 groups, including high school, undergraduate, graduate and PhD, and the results are shown in Table 4.3 According to the participants, the groups consist of 75 (17.6%) graduates, 173 (40.7%) undergraduate graduates, 131 (30.8%) graduate graduates, and 46 (10.8%) PhD.

Table 4.3: Education Level Distribution

Education level	Frequency	percent	Valid Percent
High school	75	17.6	17.6
Bachelor	173	40.7	40.7
Master	131	30.8	30.8
PhD	46	10.8	10.8
Total	425	100.0	100.0

The years of experience of participants asked in 5 groups and the results are shown in Table 4.4 Groups according to the level of experience of the employees 105 (24.7%) people 0-1 years, 104 (24.5%) 2-5 years, 140 (32.9%) 6-10 years, 34 (8.0%) people 11-20 years and 42 people (9.9% is over 20 years.

Table 4.4: Experience Level Distribution

Years of experience	Frequency	percent	Valid Percent
0-1 years	105	24.7	24.7
2-5 years	104	24.5	24.5
6-10 years	140	32.9	32.9
11-20 years	34	8.0	8.0
over 20 years	42	9.9	9.9
total	425	100.0	100.0

4.4.3.1 Mean and Standard Deviation Values of the Scales Used in the Study

The digital leadership scale used in the research consists of 17 questions, Innovation Performance consists of 10 statements, and Innovation Capacity consists of 31 questions. The mean and standard deviation values of all scales are given in Table 4.5 Table 4.6 and Table 4.7 According to Table 8, it can be

said that the DL6 expression has the lowest average (3.096) and the Dl3 expression has the highest average (4.073) in the digital leadership scale.

Table 4.5: Mean and Std. Deviation of Digital Leadership scale

	ITEMS OF THE SCALE	mean	Std. Deviation
DL1	My manager at the institution; raises the awareness of the employees of the institution about the risks of information technologies.	3.661	1.153
DL2	My manager at the institution; makes use of information technologies in communication with social actors (NGOs, trade associations, etc.).	3,598	1,207
DL3	My manager at the institution; uses different tools (computer, internet, mobile media, etc.) to access information.	4,073	1.121
DL4	My manager at the institution; raises the awareness of those around about technologies that can be used to improve organizational processes.	3,513	1,194
DL5	My manager at the institution; Introduces the institution where he works in a virtual environment (social media, website, etc.)	3.762	1.278
DL6	My manager at the institution; is in an effort to create information infrastructures such as technological tools and library facilities that can be used by everyone in its institution.	3,096	1,245
DL7	My manager at the institution; determines the ethical behaviours required for informatics applications together with all its.	3.358	1,183
DL8	My manager at the institution; makes use of information technologies in meetings held.	3.659	1.218
DL9	My manager at the institution; uses information technologies actively in management.	3.798	1.231
DL10	My manager at the institution; takes an informative role to reduce the resistance to the innovations brought by information technologies.	3.421	1,245
DL11	My manager at the institution; attaches importance to research and development activities related to information technologies.	3,722	1.203
DL12	My manager at the institution; shares its own experiences on technological opportunities that will increase the contribution of colleagues to the learning organization structure.	3.678	1.222
DL13	My manager at the institution; makes use of information technologies to develop international relations.	3,581	1,260
DL14	My manager at the institution; closely follows developments in the field of informatics.	3,567	1,240
DL15	My manager at the institution; provides guidance on technological tools that the employees of the institution can utilize to increase participation in the corporate vision.	3.442	1,170
DL16	My manager at the institution; pioneers the use of information technologies in the establishment of corporate communication networks	3.704	1,235
DL17	My manager at the institution; organizes educational activities related to informatics in the process of obtaining information.	3.624	1,277

(Sample (n): 425 (1) Strongly Disagree … (5) Strongly Agree)

According to Table 4.6 it can be said that IC30 expression has the lowest average (3,280) and IC12 expression has the highest average (3,885) in the innovation capacity scale.

Table 4.6: Mean and Std. Deviation of Innovation Capacity

	ITEMS OF THE SCALE	mean	Std. Deviation
IC1	Our company develops technologies by investing in R&D.	3.388	1,204
IC2	Our company acquires new technologies	3,569	1,281
IC3	Our company is recognized for its technologically superior products	3.798	1,162
IC4	Our company employs some of the most qualified industry experts in the country in product development.	3.421	1,273
IC5	Our company can segment and target specific markets.	3.856	1.268
IC6	Our company uses marketing tools (product design, product design, etc.) to differentiate our products.pricing , advertising)	3.819	1,237
IC7	Our company applies new pricing methods for exports of goods and services.	3,504	1,281
IC8	Our company uses new sales channels abroad	3.315	1,232
IC9	Our company applies new techniques to promote its products abroad.	3.339	1,220
IC10	Our company is consistent in product or production quality	3.652	1,180
IC11	Our company produces products designed with R & D (Research and Development) studies.	3,633	1,202
IC12	Our company products are compatible with production and production lead times.	3.885	1.161
IC13	Our company uses advanced technologies in production compared to our international competitors.	3.296	1,212
IC14	Our company identifies and applies technological trends in our industry.	3.718	1,330
IC15	Our company promotes a learning culture that enables the identification, assimilation and use of new knowledge necessary for competitive success.	3.816	1.128
IC16	New skills and new abilities to make learning new products easier acquisition	3,633	1,252
IC17	When we needed to develop new skills or technologies to deliver new products, we were able to do this efficiently.	3,513	1,170
IC18	Our company adopts a flexible organizational structure to adapt to new projects focused on product or process innovation (innovation) when necessary.	3,555	1,194
IC19	Our company offers managers a significant degree of autonomy in the innovation process.	3.511	1.444
IC20	There is strong coordination between technical (For example: engineering, projects), sales and production departments in our company.	3.753	1.091
IC21	Our company applies new management techniques to improve routines and business practices and to facilitate the use of knowledge and skills within the company.	3,569	1,235
IC22	Our company applies new working organization methods to better distribute the responsibilities and decision-making tasks (For example, creating teamwork, distributing centers or integration of departments).	3.809	1.153
IC23	Our company combines technologies that have been developed internally and externally (for example, technologies developed by business partners).	3,588	1,228
IC24	Our company maintains a constant flow of financial resources for the promotion of new products in the market.	3,631	1,309
IC25	Our company is skilled in staff allocation	3,520	1,233
IC26	Our staff constantly strives to improve our products and processes.	3.414	1,226
IC27	Our people believe they are responsible for improving our products and processes.	3,567	1.365
IC28	Strategy formulation in our company is guided by a strong entrepreneurial vision.	3.645	1.218
IC29	In our company, the top management can very well understand the external factors that may affect commercial activities.	3.852	1.151
IC30	Senior management in our company immediately notices the movements of foreign competitors and organizations strategies for this action.	3,280	1,312
IC31	At our company, there is a strong link between innovation and customer appreciation.	3.616	1,225

Sample (n): 425 (1) Strongly Disagree … (5) Strongly Agree

According to Table 4.7 it can be said that IP5 expression has the lowest average (3,631) and IP4 expression has the highest average (3,976) in the innovation performance scale.

Table 4.7: Mean and Std. Deviation of Innovation Performance

	ITEMS OF THE SCALE	mean	Std. Deviation
IP1	The level of offering new products and services to customers is high	3.878	1.132
IP2	The level of using the latest technology in producing new products and services is high	3.718	1,263
IP3	Speed of new service development process is high	3,920	1,236
IP4	The level of launching new services first is high.	3,976	1,215
IP5	Technologically competitive level is high.	3,631	1.210
IP6	The level of adapting technological innovations in service processes to the business is high.	3.718	1,186
IP7	The level of changes in the process, technology and techniques used is high	3.776	1,249
IP8	The level of creative reaction to environmental changes is high.	3.918	1.145
IP9	The level of adoption of innovation management in planning, control and integration processes is high.	3.908	1,189
IP10	The level of using new processes to improve quality and cost is high.	3.779	1,282

(Sample (n): 425 (1) Strongly Disagree … (5) Strongly Agree)

4.4.3.2 Reliability Tests of Variables and Factor Analysis

Reliability is a concept that reveals the consistency of the variables in the scale with each other (Kurtuluş, 2010, p. 184). Alpha value is used to show the reliability level of the questions under the factor. If the Cronbach's Alpha value is 0.70 and above, the scale is considered reliable (Nunnaly, 1979).

Factor analysis is a type of multivariate statistical analysis and helps to reveal the interrelationships between data (Kurtuluş, 2010, p.189). In order to be able to perform factor analysis on the variables, there must be a relationship between them (Durmuş, Yurtkoru, & Çinko, 2013, p. 79). For this reason, the KMO (Kaiser-Meyer-Olkin) test and the Barlett Sphericity test are used. In order to control the scales to be analyzed in this study, all sub-dimensions of the variables were subjected to factor analysis. KMO evaluations are carried out on the basis of the table below.

Table 4.8: KMO values and Description

KMO value	Explanation
0.80 and higher	Excellent
between 0.70-0.80	Good
between 0.60-0.70	Middle
between 0.50-0.6	Bad
lower than 0.50	Unacceptable

Source : Durmus , B., Yurtkoru,S . and zinc, MA . 2013. Data Analysis with SPPS in Social Sciences 5th Edition . Istanbul: Beta Publications ., p. 80

4.4.3.3 Factor and Reliability Analysis of the Digital Leadership Scale

First of all, the reliability analysis of the digital leadership scale was made. As the Cronbach's Alpha value was 79.75%, it was seen that factor analysis could be continued. The scale's appropriability for factor analysis was checked, the sample size was found to be appropriate because the KMO value was 0.798 and the value of the significance level of Barlett test is below 0.05, it is appropriate to subject the scale to factor analysis and sample adequacy. According to the exploratory factor analysis, the digital leadership scale was collected in two dimensions. The expressions DL1, DL6, DL2, DL16, DL10, DL5, DL12, DL4 and DL8 in the scale were collected in the first dimension, while the expressions DL3, DL14, DL9, DL15, DL13, DL11, DL7 and DL17 were collected in the second dimension (see Table 4.9). However, when the reliability analysis of the new dimensions was made separately, the Cronbach's Alpha value of the 1st dimension was 81.0% and the Cronbach's Alpha value of the 2nd dimension was 78.5%. These values show that the reliability of both dimensions of the scale is at a good level. The first of the new sub-dimensions formed was called Communication, and the second was called Information sub-dimension. While the Communication sub-dimension of the Digital Leadership scale explains 28.9% of the total variance and the information sub-dimension explains 26.9% of the total variance, the Digital Leadership scale explains 55.8% of the total variance.

Table 4.9: Factor and Reliability Analysis Results of the Digital Leadership Scale

			Factor expressions	Factor loads	Explained variance	Reliability
Digital Leadership	Communication	DL1	My manager at the institution; raises the awareness of the employees of the institution about the risks of information technologies.	0.810	28.92	0.810
		DL6	My manager at the institution; is in an effort to create information infrastructures such as technological tools and library facilities that can be used by everyone in its institution.	0.767		
		DL2	My manager at the institution; makes use of information technologies in communication with social actors (NGOs, trade associations, etc.).	0.760		
		DL16	My manager at the institution; pioneers the use of information technologies in the establishment of corporate communication networks	0.695		
		DL10	My manager at the institution; takes an informative role to reduce the resistance to the innovations brought by information technologies.	0.665		
		DL5	My manager at the institution; Introduces the institution where he works in a virtual environment (social media, website, etc.)	0.630		
		DL12	My manager at the institution; shares its own experiences on technological opportunities that will increase the contribution of colleagues to the learning organization structure.	0.628		
		DL4	My manager at the institution; raises the awareness of those around about technologies that can be used to improve organizational processes.	0.620		
	Information	DL8	My manager at the institution; makes use of information technologies in meetings held.	0.585	26.91	0.785
		DL3	My manager at the institution; uses different tools (computer, internet, mobile media, etc.) to access information.	0.782		
		DL14	My manager at the institution; closely follows developments in the field of informatics.	0.744		
		DL9	My manager at the institution; uses information technologies actively in management.	0.735		
		DL15	My manager at the institution provides guidance on technological tools that the employees of the institution can utilize to increase participation in the corporate vision.	0.716		
		DL13	My manager at the institution; makes use of information technologies to develop international relations.	0.658		
		DL11	My manager at the institution attaches importance to research and development activities related to information technologies.	0.578		
		DL7	My manager at the Institution; determines the ethical behaviors required for informatics applications together with all its.	0.52		
		DL17	My manager at the institution; organizes educational activities related to informatics in the process of obtaining information.	0.519		
Total				55,832		
KMO Value				0.798		
Bartlett Sphericity Test				Chi square 173,695 p.value=0.000		

4.4.3.4 Factor and Reliability Analysis of the Innovation Capacity Scale

The reliability Cronbach's Alpha value of all six-factor statements of the Innovation Capacity scale is 80.3%. At the same time, separate reliability analysis of each factor was performed and Cronbach's Alpha value for all factors were above 0.70. According to the result of the analysis, KMO value is 0.842 and the value of the significance level of Barlett test is below 0.05, it is appropriate to subject the scale to factor analysis and sample adequacy. Here, 31 expressions were collected in 7 factors. Reliability analysis of each repetitive factor was performed separately and Cronbach's Alpha value of all factors were above 0.70. As a result of the analysis, the perceived innovation capacity, which consists of 7 factors, explains 57% of the total variance. Reliability values, factor loads and variance explanation percentages of the statements in the scale are given in Table 4.10

Table 4.10: Factor Analysis Reliability Results of the Innovation Capacity Scale

			Factor Expressions	Factor loads	Explained variance	Reliability
Innovation Capacity	R&D capacity	IC2	Our company acquires new technologies	0.851	8,765	0.835
		IC1	Our company develops technologies by investing in R&D.	0.769		
		IC3	Our company is recognized for its technologically superior products	0.750		
		IC4	Our company employs some of the most qualified industry experts in the country in product development.	0.698		
	Marketing capacity	IC8	Our company uses new sales channels abroad	0.868	8.563	0.803
		IC9	Our company applies new techniques to promote its products abroad.	0.854		
		IC6	Our company uses marketing tools (product design, product design, etc.) to differentiate our products. pricing, advertising)	0.837		
		IC7	Our company applies new pricing methods for exports of goods and services.	0.791		
		IC5	Our company can segment and target specific markets.	0.645		
	Manufacturing Capacity	IC10	Our company is consistent in product or production quality	0.798	8.211	0.785
		IC13	Our company uses advanced technologies in production compared to our international competitors.	0.796		
		IC11	Our company produces products designed with R & D (Research and Development) studies.	0.786		

Table 4.10: (Con.) Factor Analysis Reliability Results of the Innovation Capacity Scale

			Factor Expressions	Factor loads	Explained variance	Reliability
Learning capacity		IC12	Our company products are compatible with production and production lead times.	0.654		
		IC16	New skills and new abilities to make learning new products easier acquisition	0.894		
		IC17	When we needed to develop new skills or technologies to deliver new products, we were able to do this efficiently.	0.868		
		IC15	Our company promotes a learning culture that enables the identification, assimilation and use of new knowledge necessary for competitive success.	0.857	8.073	0.769
		IC14	Our company identifies and applies technological trends in our industry.	0.697		
Organizational capacity		IC22	Our company applies new working organization methods to better distribute the responsibilities and decision- making tasks (For example, creating teamwork, distributing centers or integration of departments).	0.899		
		IC21	Our company applies new management techniques to improve routines and business practices and to facilitate the use of knowledge and skills within the company.	0.895		
		IC20	There is strong coordination between technical (For example: engineering, projects), sales and production departments in our company.	0.872	7,953	0.761
		IC18	Our company adopts a flexible organizational structure to adapt to new projects focused on product or process innovation (innovation) when necessary.	0.837		
		IC19	Our company offers managers a significant degree of autonomy in the innovation process.	0.799		
Resource exploitation capacity		IC26	Our staff constantly strives to improve our products and processes.	0.865		
		IC24	Our company maintains a constant flow of financial resources for the promotion of new products in the market.	0.811		
		IC25	Our company is skilled in staff allocation	0.808	7,795	0.701
		IC27	Our people believe they are responsible for improving our products and processes.	0.796		
		IC23	Our company combines technologies that have been developed internally and externally (for example, technologies developed by business partners).	0.701		
Strategic capacity		IC30	Senior management in our company immediately notices the movements of foreign competitors and organizations strategies for this action.	0.946		
		IC29	In our company, the top management can very well understand the external factors that may affect commercial activities.	0.911	7.687	0.833
		IC28	Strategy formulation in our company is guided by a strong entrepreneurial vision.	0.89		
		IC31	At our company, there is a strong link between innovation and customer appreciation.	0.863		
Total					57,047	
KMO Value					0.842	
Bartlett Sphericity Test					Chi square 1056.186 p.value=0.000	

4.4.3.5 Factor and Reliability Analysis of the Innovation Performance Scale

According to the data in Table 4.11 the innovation performance scale was factored as one dimension. The KMO (Kaiser-Meyer-Olkin) value of 0.779 indicates that the sample size is appropriate for factor analysis. Also, the Chi-Square value is 37,984 and the significance level of Barlett test is below 0.05, it is appropriate to subject the scale to factor analysis and sample adequacy. The innovation scale explains 55.9% of the total variance. The factor load values of some of the items in the scale were low, they were excluded from the factor analysis and the analysis was repeated. These items are items 6 and 7

Table 4.11: Factor Analysis Results of the Innovation Performance Scale

		Factor Expressions	Factor loads	Explained variance	Reliability
Innovation Performance	IP4	The level of launching new services first is high.	0.652	55,905	0.791
	IP1	The level of offering new products and services to customers is high	0.765		
	IP9	The level of adoption of innovation management in planning, control and integration processes is high.	0.822		
	IP10	The level of using new processes to improve quality and cost is high.	0.805		
	IP3	Speed of new service development process is high	0.830		
	IP2	The level of change in the processes, technologies and techniques used is high	0.679		
	IP8	The level of creative reaction to environmental changes is high.	0.521		
	IP5	Technologically competitive level is high.	0.505		
	Total			55.686	
	KMO Value			0.779	
	Bartlett Sphericity Test			Chi square 37,984 p.value=0.000	

4.4.3.6 Regression Analysis

Regression analysis is used to examine the effect relationship between at least two variables. It is the type of analysis that measures and defines the changes

made on the dependent variable by the change in the independent variable (Kurtuluş, 2010, p.186). In the study, the averages of the content expressions of each factor were calculated and the regression analysis was continued with these averages. In the regression model, if there is one dependent and one independent variable, then simple linear regression is used, and if there are two or more independent variables, multiple regression analysis is performed (Durmuş, Yurtkoru, & Çinko, 2013, p. 154).

Hypothesis testing:

H1: Digital leadership has significant effect on Innovation capacity.

Simple linear regression analysis was used to examine the impact of Digital Leadership on Innovation Capacity. In this analysis, digital leadership is the independent variable and innovation capacity is the dependent variable. According to Table 4.12 digital leadership can explain 28.5% of innovation capacity.

Table 4.12: Digital Leadership and Innovation Capacity Regression Analysis Conclusion Table

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.515[a]	0.285	0. 272	0.84886

a. Predictors: (Constant), Digital Leadership

b. Dependent Variable: Innovation Capacity

In Table 4.13 the regression model was considered statistically significant because the F value of ANOVA test was 168.669 and the significance value was 0.00 (< 0.05).

Table 4.13: Digital Leadership and its İmpact on Innovation Capacity Regression Analysis ANOVA Table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	206.113	1	206.113	168.669	0.000[b]
	Residual	517.092	423	1.222		
	Total	723.205	424			

a. Dependent Variable: Innovation Capacity

b. Predictors: (Constant), Digital Leadership

When Table 4.14 is examined, Digital Leadership has a significant effect on Innovation Capacity. The positive values of beta coefficients indicate that the variable has a positive effect on Innovation Capacity. In other words, the rise of Digital Leadership will increase the Innovation Capacity.

Table 4.14: Digital Leadership and its impact on innovation capacity Table of Regression Coefficients

Coefficients [a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. error	Standardized Coefficients	t	sig.	Collinearity Statistics tolerance	Collinearity Statistics VIF
1	(Constant)	3.509	0.232		15.125	0.000		
	Digital Leadership	0.147	0.062	0.112	2.370	0.017	1.000	1.000

a. Dependent Variable: Innovation Capacity

H1 hypothesis is accepted. According to the data in the table, Innovation Capacity can be formulated as follows:

Innovation Capacity = 3,509+ 0. 147 * Digital Leadership

H2. Digital leadership has significant effect on Innovation performance.

Simple linear regression analysis was used to examine the impact of Digital Leadership on Innovation Performance. In this analysis, digital leadership is the independent variable and innovation performance is the dependent variable. According to Table 4.15 digital leadership can explain 26.4% of innovation performance.

Table 4.15: Digital Leadership and Innovation Performance Regression Analysis Result Table

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.406[a]	0.264	0.236	0.41754

a. Dependent Variable: Innovation Performance

b. Predictors: (Constant), Digital Leadership

In Table 4.16 the regression model was considered statistically significant because the F value of annova test was 151.877 and the significance value was 0.000 (< 0.05).

Table 4.16: Digital Leadership and its Impact on Innovation Performance Regression Analysis Anova Table

Model	Sum of Squares		df	Mean Square	F	sig.
1	Regression	75.787	1	75.787	151.877	0.000[b]
	Residual	211.286	423	0.499		
	Total	287.073	424			

a. Dependent Variable: Innovation Performance

b. Predictors: (Constant), Digital Leadership

When Table 4.17 is examined, Digital Leadership has a significant effect on Innovation Performance (Sig<0.05). The positive values of beta coefficients indicate that the variable has a positive effect on Innovation Performance. In other words, the rise of Digital Leadership will increase the Innovation Performance.

Table 4.17: Digital Leadership and its Impact on Innovation Performance Regression Coefficients Table

Model	Unstandardized Coefficients B	Std. error	Standardized Coefficients Beta	t	sig.	Collinearity Statistics tolerance	VIF
1 (Constant)	3.683	0.247		14.911	0.000		
Digital Leadership	0.440	0.068	0.451	0.647	0.021	1.000	1.000

a. Dependent Variable: Innovation Performance

H2 hypothesis was accepted. According to the data in the table, Innovation Performance can be formulated as follows:

Innovation Performance = 3,683 + 0,440* Digital Leadership

H3. Innovation capacity has significant effect on Innovation Performance.

Simple linear regression analysis was used to examine the effect of Innovation Capacity on Innovation Performance. In this analysis, Innovation Capacity is

the independent variable and innovation performance is the dependent variable. According to Table 4.18 it can explain 32.0% of Innovation Capacity.

Table 4.18: Innovation Capacity and Innovation Performance Regression Analysis Result Table

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.565 [a]	0.320	0.318	0.41774

a. Predictors: (Constant), Innovation Capacity

b. Dependent Variable: Innovation Performance

In Table 4.19 the regression model was considered statistically significant because the F value of annova test was 199.116 and the significance value was 0.000 (sig< 0.05).

Table 4.19: innovation capacity and its impact on innovation performance Regression Analysis

Anova Table

Model	Sum of Squares		df	Mean Square	F	sig.
1	Regression	264.427	1	264.427	199.116	0.000[b]
	Residual	561.907	423	1.328		
	Total	826.334	424			

a. Dependent Variable Innovation Capacity

b. Predictors: (Constant), Innovation Performance

When Table 4.20 is examined, Innovation Capacity has a significant effect on Innovation Performance (Sig=0.000<0.05). The positive values of beta coefficients indicate that the variable has a positive effect on Innovation Performance. In other words, increasing the Innovation Capacity will increase the Innovation Performance.

Table 4.20: Innovation Capacity and Its Impact on Innovation Performance Regression Coefficients Table

Unstandardized Coefficients ModelB			Std. error	Standardized Coefficients Beta	t	sig.	Collinearity Statistics tolerance	VIF
1	(Constant)	3.801	0.342		11.114	0.000		
	Innovation Capacity	0.782	0.095	0.565	8.231	0.003	1.000	1.000

a. Dependent Variable: Innovation Performance

H3 hypothesis is accepted. According to the data in the table, Innovation Performance can be formulated as follows:

Innovation Performance = 3.801 + 0.782 * Innovation Capacity

5. CONCLUSION

Today, the speed experienced in technological developments and the spread of the internet appear in the form of mobile devices, wearable technology, artificial intelligence and virtual reality. In this direction, it is seen that the private sector or government institutions are working to develop human resources on subjects such as technology literacy and robotic coding. In addition, it is one of the results reached that understanding the changes and transformations in the world in educational organizations, being aware of developing technologies, has a great effect on individuals in order to touch the future. In this context, the development of digital competencies of corporate leaders may result in the development of learning, supporting the principle of lifelong learning and development, and increasing work efficiency. We can say that digital skills, which stand out in line with the characteristics of digital leaders, have changed with the developing information and communication technologies. In this context, the introduction of information and communication technologies to institutions also affects the roles and responsibilities of corporate leaders.

In the entire history of humanity, data has not been as important as it is today, and the collected data has never needed to be used and consumed at this speed. Because the modern age is in constant cooperation with data, businesses need leaders who will understand the importance of digitalization and believe in its necessity and who can realize this new trend in the entire working process and applications of the institution. In this context, the formation of the idea of transformation, its adoption by the entire organization and its implementation with determination is seen as the success of the leader. The effort to establish a culture of digitalization and continuous learning is possible with the strategy, foresight and determination of the digital leader.

In the globalizing world, business owners and organizations need a leader more than a manager. Leaders who have the ability to mobilize the individual powers of their employees in different ways are the people who will carry the business

to the future. First of all, a leader strives to ensure that the vision he sets for the organization is compatible with the values of the employees and takes care to express this in a way that does not contradict their social understanding. He shares with his employees the decisions he has taken on how to implement this vision. Today, the business environment is in a radical and continuous change. Digitization affects organizations as well as the whole world, and appropriate leaders are needed. The shorter, the more successful and the more harmonious a business's digital transformation process is; its future competitiveness and lifetime will be proportional to the degree of success of this transformation. The architects of this transformation in businesses will also be digital leaders.

Managers need to be at peace with information and communication technologies and make information and communication technologies indispensable in their daily lives in order to perceive, make sense, organize when necessary, and deliver all kinds of information produced internally and externally. The proliferation of expectations suitable for the needs of the future will necessitate multidimensional thinking and making new interpretations. It can be seen as an expectation that information technologies will contribute to managerial activities in the future.

The fact that the field is so new and therefore not enough conscious practice, suggests that leaders need successful models that they can use as guides. The rapid development of today's information technologies also creates new competence areas. With the spread of communication technologies, learning life has entered a new dimension. This new situation, which can be defined as the spread of information, the increase in its use, and the acceleration of access to information and communication, brings about changes such as digital freedom.

Organizations need to benefit from information resources and share information in order to adapt to constantly changing conditions, make effective decisions and continue their lives, increase their resources and develop their skills. They need knowledge management to ensure knowledge sharing and continuous learning. In this context, managers and especially leaders have a great responsibility. The increasing importance and increasing use of information and communication technologies with globalization, the rapid spread of information, has made information one of the basic production factors.

It has been revealed that leadership is an influencing process. The innovation leader demonstrates this power of influence by using information technologies, exhibiting his skills in this field, making use of technologies such as social media in his communications, being a model for those around him, rewarding those who follow him when necessary, setting a participatory vision and revealing his researcher personality. Richardson and McLeod (2011) and Beytekin (2014) emphasized technology standards for managers in their related studies and conducted their research on these standards. It can be said that the concept of innovation leadership comes to the fore with sharing. Leadership is a force that emerges through influence. Çelik (2012) revealed in his definition that leadership occurs on influence. The innovation leader is a leader who makes use of information technologies while making this impact. A leader is also a person who directs those around him towards a goal. In addition, in order to this to continue, the innovation leader must also have a role that initiates and continues educational activities. Another important feature of it is that it provides these environments and enables resource transportation. Of course, the leader should have all these features by prioritizing scientific values.

In today's globalizing world, the concept of innovation, like the concept of data, is becoming more and more important and has a great place in our lives. In particular, it is an indispensable element for businesses to show innovation performance in terms of continuing their activities by competing in the market in which they operate, growing financially by gaining development, and keeping their business performance active all the time. Innovation performance is important not only for businesses, but also for individuals, societies and industries. Through innovation efforts, businesses will be able to continue their work in the markets they operate in, show growth, maintain their market share in the market they are in, and open up to new markets and industrial areas. They will receive the necessary support from innovation to achieve these goals. While businesses gain an advantageous position against their competitors through innovation practices, they can maintain this advantage. Businesses must constantly determine new strategies in order to maintain the advantage they have gained. The knowledge and skills of digital leaders are at the forefront in determining these strategies. In this way, by strengthening their positions

against their competitors, businesses can take a leading role in racing market conditions by directing their future and gaining an advantage over their competitors. Thus, businesses can stay ahead of their competitors through the innovation strategies they develop and contribute to the total innovation performance by affecting their internal and external environment.

As a result of the literature review, very limited resources and information were found about the application of digital leadership. In addition, very few studies have been found in which the subject is discussed together with innovation capacity and innovation performance. For this reason, it is recommended that more studies being conducted based on the criteria set out in the research to better define and investigate the impact of the digital leadership concept on innovation performance and innovation capacity. At the same time, dividing the companies into clusters with cluster analysis for research, that is, making sector-based research can help to understand in which sector the model can yield more efficient results. With this method, the proposed model can be made more acceptable for social science research.

This study was conducted as a digital survey study among small and medium-sized enterprises. On the other hand, the constructed model has not been used in any other research before. Therefore, the results of the study are not suitable for generalization. As reported as a recomendation, generalization can be achieved after the impact of digital leadership on innovation capacity and innovation performance is more thoroughly discussed in several studies. This issue should be taken into account in studies related to this subject that is planned to be carried out.

When the results of the research are evaluated, we can say that the answers to the hypotheses determined in this study were obtained at a high rate and the objectives were achieved. According to the results of the research, it can be said that digital leadership has a positive effect on innovation capacity and innovation performance.

According to the findings, digital leadership has a positive effect on innovation

performance. This result is similar to Zhang, D., Sun, X., Liu, Y., Zhou, S., and Zhang, H. (2018), although not exactly the same, in the study of the effect of

integrative leadership on innovation performance, Zheng, J. ., Wu, G., and Xie, H. (2017) the effect of the concept of leadership on innovation performance and the results of Sawaean, F., and Ali, K. (2020) the effect of business leadership on organizational (innovation) performance, came out the same. The impact of digital leadership on innovation performance reveals the need for small and medium-sized businesses to increase the proportion of employees with digital leadership skills. Businesses gain a stronger position in the market, differentiate from their competitors, and further expand into foreign markets are related with their innovation performance. Having leaders who have high digital leadership skills within the organization and who can transfer digitalization practices, which are one of today's needs, will enable this organization to gain competitive advantage and to exist in rapidly developing new markets. It is recommended that local businesses that want to increase the innovation performance of the institution adopt the concept of digitalization and train employees with leadership skills in this direction.

As a result of the analysis, it has been revealed that digital leadership has an impact on innovation capacity for small and medium-sized enterprises. Prajogo, D. I., and Ahmed, P. K. (2006) revealed that there is a relationship between the two variables discussed in the relationship between innovation stimulus (leadership dimension) and innovation capacity. At the same time, Sawaean, F., and Ali, K. (2020), another study conducted on small and medium-sized enterprises, also overlap with the results of the study of the impact of organizational leadership on corporate performance. In terms of small and medium-sized enterprises in Istanbul, the result that digital leadership is effective in the innovation capacity of institutions is the same as the results of previous studies in the literature. It can be said that organizations with high numbers of employees with digital and leadership skills will also have a high innovation capacity. Leaders who constantly research modern needs and digital innovations, have knowledge in the field of R&D and can apply this knowledge in their corporate strategy, increase the innovation capacity of the business they work for. For example, the digital leader, who is aware of the convenience, speed and other factors provided by cloud technology, can calculate the benefit

that will be obtained as a result of implementing this innovation within the enterprise.

As a result of the research conducted among small and medium-sized enterprises in Istanbul, it has been revealed that the innovation capacity of the institution is effective on the innovation performance. The relationship between the innovation capacity of Prajogo, D. I., and Ahmed, P. K. (2006) and innovation performance, which was previously conducted among 1000 managers, was not found between the two variables. However, in the research conducted on 121 financial project enterprises in Taiwan, it has been revealed that innovation capacity has a positive effect on innovation performance. This result supports the results of our research.

Our findings have important managerial implications for small and medium-sized businesses. The results obtained can be helpful for project leaders or individuals who manage teams in a project-based organizational environment, providing important information about inter-organizational information exchange. Our results show that through an appropriate leadership style, project-based businesses can increase their coordination and knowledge sharing with social capital management, thereby generating and improving high levels of innovation performance.

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APPENDIX

APPENDIX A Scale

DIGITAL LEADERSHIP SCALE
My manager at the institution; It raises the awareness of the employees of the institution about the risks of information technologies.
My manager at the institution; It makes use of information technologies in communication with social actors (NGOs, municipalities, trade associations, etc.).
My manager at the institution; uses different tools (computer, internet, mobile media, etc.) to access information.
My manager at the institution; It raises the awareness of those around about technologies that can be used to improve organizational processes.
My manager at the institution; Introduces the institution where he works in a virtual environment (social media, website, etc.)
My manager at the institution; is in an effort to create information infrastructures such as technological tools and library facilities that can be used by everyone in its institution.
My manager at the institution; determines the ethical behaviors required for informatics applications together with all its stakeholders.
My manager at the institution; makes use of information technologies in meetings held.
My manager at the institution; uses information technologies actively in management.
My manager at the institution; takes an informative role to reduce the resistance to the innovations brought by information technologies.
My manager at the institution; makes use of information technologies in developing relationships with colleagues from different disciplines.
My manager at the institution; attaches importance to research and development activities related to information technologies.
My manager at the institution; It shares its own experiences on technological opportunities that will increase the contribution of colleagues to the learning organization structure.
My manager at the institution; makes use of information technologies to develop international relations.
My manager at the institution; closely follows developments in the field of informatics.

My manager at the institution; It provides guidance on technological tools that the employees of the institution can utilize to increase participation in the corporate vision.
My manager at the institution; pioneers the use of information technologies in the establishment of corporate communication networks.
My manager at the institution; organizes educational activities related to informatics in the process of obtaining information.

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İNNOVATION PERFORMANCE SCALE
The level of offering new products and services to customers is high
The level of using the latest technology in producing new products and services is high
Speed of new service development process is high
The level of launching new services first is high.
Technologically competitive level is high.
The level of adapting technological innovations in service processes to the business is high.
The process, technology and techniques used are highly changing.
The level of creative reaction to environmental changes is high.
The level of adoption of innovation management in planning, control and integration processes is high.
The level of using new processes to improve quality and cost is high.

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İNNOVATION CAPACİTY SCALE
R&D Capacity
Our company develops technologies by investing in R&D.
Our company acquires new technologies
Our company is recognized for its technologically superior products
Our company employs some of the most qualified industry experts in the country in product development.
Marketing Capacity
Our company can segment and target specific markets.
Our company uses marketing tools (product design, product design, etc.) to differentiate our products. pricing, advertising)
Our company applies new pricing methods for exports of goods and services.
Our company uses new sales channels abroad
Our company applies new techniques to promote its products abroad.
Production capacity
Our company is consistent in product or production quality
Our company produces products designed with R & D (Research and Development) studies.
Our company products are compatible with production and production lead times.
Our company uses advanced technologies in production compared to our international competitors.
Learning Capacity
Our company identifies and applies technological trends in our industry.
Our company promotes a learning culture that enables the identification, assimilation and use of new knowledge necessary for competitive success.
New skills and new abilities to make learning new products easier acquisition
When we needed to develop new skills or technologies to deliver new products, we were able to do this efficiently.
Management Capacity
Our company adopts a flexible organizational structure to adapt to new projects focused on product or process innovation (innovation) when necessary.
Our company offers managers a significant degree of autonomy in the innovation process.
There is strong coordination between technical (For example: engineering, projects), sales and production departments in our company.
Our company applies new management techniques to improve routines and business practices and to facilitate the use of knowledge and skills within the company.
Our company applies new working organization methods to better distribute the responsibilities and decision-making tasks (For example, creating teamwork, distributing centers or integration of departments).
Resource Usage Capacity

Our company combines technologies that have been developed internally and externally (for example, technologies developed by business partners).
Our company maintains a constant flow of financial resources for the promotion of new products in the market.
Our company is skilled in staff allocation
Our staff constantly strives to improve our products and processes.
Our people believe they are responsible for improving our products and processes.
Strategic Capacity
Strategy formulation in our company is guided by a strong entrepreneurial vision.
In our company, the top management can very well understand the external factors that may affect commercial activities.
Senior management in our company immediately notices the movements of foreign competitors and organizes strategies for this action.
At our company, there is a strong link between innovation and customer appreciation.

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APPENDIX B Ethical Approval Form

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Prof. Dr. Ragıp Kutay KARACA
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