

The Effect of Covid-19 Pandemic on Intrapreneurship as an Environmental Factor

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Abstract

Researches on the effects of the Covid-19 pandemic continue to increase all over the world. International organizations also support these researches and prioritize studies in this field. The main purpose here is to proactively construct the measures for the new world order by precisely determining the effects of the pandemic. Meeting the sustainable development and ever-increasing human needs in the world depends on maintaining the high level of innovation and internal entrepreneurship (intrapreneurship) activities in all kinds of institutions and organizations. Factors affecting intrapreneurship are generally linked to the internal dynamics (factors) of the organization, and studies have focused on this area. However, studies on the effects of environmental factors also show that intrapreneurship is also predicted by these factors. In this study, the effect of the health illness (Covid-19) factor, which is considered as a crisis factor among environmental factors, on the intrapreneurship attitude and behavior of employees was tried to be determined with an empirical study with 202 participants. The findings obtained show that the Covid-19 pandemic significantly affects intrapreneurship, and this effect differs according to some control variables.

Keywords: Intrapreneurship, Entrepreneurship, Covid-19 Pandemic, Environmental Factor Impact.

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1. Introduction

The changing economic order, changing customer needs, new problem areas emerging and ever-increasing competitive pressure force companies to make innovations aggressively, to design new products, new processes and new solutions. These situations force the organizations to make intrapreneurship especially today. Efforts to understand what motivates organizations and even individuals for entrepreneurship and internal entrepreneurship activities, or what forces them to behave in this way, are carried out in the past and today. The reason why studies on entrepreneurship and internal entrepreneurship behavior, which have a long historical period, continue unabated is seen as the great impact it has on organizations and individuals. In terms of sustainability, an organization that will realize corporate / individual goals must exhibit intrapreneurial practices, follow environmental factors that will affect it and formulate appropriate responses to these effects. These environmental factors are sometimes perceived as threats and sometimes as opportunities, and no matter how they are perceived, they can affect positively or negatively intrapreneurship (Zahra, 1991: 261).

In times of crisis, there are cases when companies and other institutions tend to develop new business lines or to develop intrapreneurship activities in order to adapt to the new situation. In particular, examples of intrapreneurship to meet new product, service and process needs required by the emerging crisis were followed during the Covid-19 pandemic period (New distribution methods, product packaging, transportation and training arrangements, e-commerce developments, etc.). Many wars and other crises in the near past have encouraged new initiatives at all levels. In addition, these crises have led to strengthening technological innovation and social networks, creating human rights or environmental movements, and even the establishment of many international organizations such as the United Nations, the World Food Organization and the World Health Organization (Gemcortium, 2020). The new situation that emerged during the Covid-19 pandemic provides new positive conditions for innovative and entrepreneurial organizations, and players at the global level even take on the role of social entrepreneurship. Even multinational companies started initiatives to solve the crisis during this period. The resulting examples have shown that the manufacturing and service industry can quickly find a social purpose when it comes to

the needs that arise in the current period. Companies such as Firmenich, Dow, Shiseido and l'Oréal have converted some of their production lines into hand sanitizer production lines. Many fashion brands have redesigned their production chains to make hospital gowns, masks, and protective equipment for healthcare professionals and patients. Automotive and other manufacturing companies produce urgently needed ventilators and respirators (Gemcortium, 2020).

Human history has witnessed various crises as a result of many diseases, wars and natural disasters. There have been bitter experiences about the fatal effects of diseases, which have increased especially due to the need of people to be close to each other and whose contagiousness continues for years, on the entire world, especially in Europe and Africa. Although medical science has developed in terms of viruses and other similar living organisms, the emergence of living creatures (micro organisms) that cause these infectious diseases with new and riskier forms will make these risks possible in the future. This situation teaches us that the world should be ready for contagious disease disasters that will cause great devastation as it was in the past (Harari, 2016).

Covid-19, which emerged in China in the last months of 2019 and spread rapidly to the world, shook the world deeply in every aspect, including the period we are still in. This epidemic, which has negative effects in all areas of life, especially human health, has also intensely affected the production, logistic and service sector. In order to cope with the emerging and generally perceived negative situation, many research and forecasting studies are carried out worldwide, and the effects of new situations (restrictions, changing ways of doing business, etc.) that arise during Covid-19 are tested in every field. Although the production and service sectors need to develop new positions against this situation, there are also losses caused by restrictions and various effects on employees. Studies to determine the effects of the factors to be evaluated within the scope of this environmental impact on the activities of organizations in many areas have been carried out for years. However, no adequate study has been found to measure the impact on in-house entrepreneurship (intrapreneurship) activities, which have a great impact on the sustainability of organizations. For this reason, the study aimed to reveal the effects (if any) of the new environmental conditions that emerged during the Covid-19 pandemic on intrapreneurship.

In the second part of the study, intrapreneurship is defined, and pioneering studies on the impact of environmental factors on intrapreneurship are examined. In the third part, the effects of the Covid-19

pandemic process on many areas, especially on the production and service sector, are briefly explained. In the last section, the results are explained with reference to the research and findings and discussed by comparing them with the literature.

2. Intrapreneurship and The Effects of Environmental Factors

Intrapreneurship (internal entrepreneurship) can be seen as a system that enables the use of creative processes, allows planning, designing and implementing desired innovation activities, and reveals change through risk and proactive behavior (Echols and Neck, 1998).

As a result of the findings that intrapreneurship increases organizational efficiency, it is seen that this kind of behaviors are supported. Because for organizations, being able to gain competitive advantage is to be organizations that can follow change and even be ahead of change, making innovations and being an internal entrepreneur (Naktiyok, 2004). The intrapreneur is considered as the entrepreneurial behavior of individuals or teams in active organizations, willingly and in order to improve the organization, and this concept is considered as a very important dynamic element in organizational and general economic development (Ağca and Yörük, 2006). For intrapreneurship, which is considered as an important factor in organizational and economic development (Klanecek and Antoncic, 2007: 36; Parker, 2009: 20), it is important that organizations in both the private and public sectors incorporate entrepreneurial individuals and develop practices that increase their behaviors in this field (Koçel, 1998: 17).

Researchers and practitioners (firms) are increasingly interested in entrepreneurship and intrapreneurship concepts due to the fact that firms are more dynamic and their positive impact on their performance (Antoncic and Hisrich, 2004). Intrapreneurship is seen as an internal process that provides continuous growth and competitive advantage by leading to various innovations such as the creation of new products, services, processes and markets for an existing firm (Antoncic and Hisrich, 2001; Yiu and Lau, 2008). Thus,

intrapreneurship becomes a key factor in the economic transformation and development required to foster innovation and sustainability (Kontoghiorghes, et al., 2005). Therefore, it is accepted as an effective tool in the business world for firms to stimulate and restructure their resources and transform into knowledge-based or innovation-oriented firms ready to compete in the global economy (Antoncic and Hisrich, 2004; Yiu and Lau, 2008). Antoncic and Hisrich (2001) divided intrapreneurship into four features as a result of their research. The first is the new business venture; It means the creation of new jobs within the existing company related to the firm's existing products and markets. The second is innovation; includes the creation of new products, services and technologies. The third is self-renewal; strategy reform means restructuring and organizational change. Finally, proactivity; reflects the top management orientation to take risks and compete actively and proactively with industry competitors.

All type of entrepreneur that can adapt to rapidly changing environmental conditions and find creative and new solutions has become important for small and medium-sized enterprises (SMEs) as well as large enterprises (İçerli et al., 2011: 179; Müftüoğlu, 2007: 6). Intrapreneurship is the process of taking risks voluntarily in any process of the enterprise, as well as following the opportunities, apart from controlling the available resources. Internal entrepreneurship often focuses on activities outside of the main activities of the organization in order to provide more value and to strengthen the competitive position in the market (Nielsen et al., 1985: 184). Intrapreneurs are people who bring creative and new solutions to the problems faced by companies (Kolchin and Hyclak, 1987: 14-15). They provide all types of innovation using various factors. In the literature, intrapreneurship is generally classified into seven dimensions. These dimensions are; new business venturing, innovativeness, self-renewal, proactiveness, competitive aggressiveness, risk taking and autonomy (İbrahimoğlu and Uğurlu, 2013).

Entrepreneurship with these positive effects can also be seen as a process in which individuals within the organization follow opportunities regardless of the resources they control (Stevenson and Jarillo, 1990). In other words, it can be expressed as leaving the habit in order to do new things and follow opportunities regardless of the resource situation (Vesper, 1990) and attitudes or behaviors that emerge different from the usual ways of doing business (Antoncic and Hisrich, 2003, 2004; Antoncic, 2007). Similarly, intrapreneurship provides enterprises with the opportunity to constantly renew and transform themselves in

order to capture opportunities and innovations with environmental adaptability and flexibility. This renewal and transformation covers all the activities of the business and interacts directly with the capabilities of the business. For this reason, intrapreneurship is expressed as the re-design of the activities of the enterprise to create new opportunities (Thornbery, 2001). Hence, internal entrepreneurship depends on the development and transformation of the enterprise; (a) necessary change and innovation activities, (b) management and practices, (c) more creative business models and innovative business areas (Kuratko et al., 1990).

In the literature, intrapreneurship studies generally focused on the effects of factors within the organization. Researchers working on this subject have assumed that internal entrepreneurial behaviors are mostly affected by individual and organizational factors (Şeşen, 2010). For this reason, the effect of environmental factors on intrapreneurial behavior has not been examined in many studies, and the effect of environmental positive or negative situations on intrapreneurial behavior has not been measured sufficiently. Similarly, Naktiyok and Timuroğlu (2009) stated in their studies that entrepreneurship activities and attitudes are behaviors that emerge in line with the intentions and desires of individuals, and with this approach, they ignored the effect of environmental factors.

When the unique characteristics of the internal entrepreneurial individuals in an organization are examined, it is seen that innovation, risk taking and focusing on opportunities come to the fore (Korkmazyürek et al., 2008: 74). Among these, attitudes of taking risks and focusing on opportunities are attitudes that may undergo positive or negative changes especially due to environmental factors (economy, a new approach and environment in the business world, etc.). On the other hand, innovativeness is defined as the transfer of a new idea to business activities and its implementation, resulting in an increase in organizational effectiveness (Arslan, 2001: 42). With this characteristic, it seems normal that the innovative attitude is also affected by environmental risks, threats and opportunities. Opportunities and threats emerge with a rapid change in the environment in which organizations live (Herron, 1992: 3). Although the threats created by opportunities bring certain risks, it is expected at this point to focus on opportunities, that is, intrapreneurship behavior in order to retain a sustainable competitive advantage (Porter, 1980). The ability of intrapreneurs to focus on opportunities enables them to differentiate their organizations by discovering the opportunities in the environment, thus gaining competitive advantage (Wiklund and Shepherd, 2005: 72), and increasing

the effectiveness of organizations and gaining superiority over their competitors (Aloulou and Fayolle, 2005: 35).

Since intrapreneurship is a set of strategies and practices that involve promoting, developing and managing intrapreneurial behavior in the organization in order to create the conditions that make it possible for a company to develop new ideas and business projects or to renew basic ideas, factors influencing by organizations need to be explored and supported (Eugenia Bieto, 2008). Zahra (1991: 261) argues that besides internal organizational factors, business strategy and external environmental factors such as dynamism, heterogeneity and competitiveness of the industry also play a determining role in entrepreneurial success. Antoncic and Hisrich (2004) state that both internal organizational factors and environmental conditions are important for intrapreneurship. Similarly, in the study of Gürel (2011: 103), it has been observed that internal / external factors have an effect on intrapreneurship and intrapreneurship has a positive effect on business performance.

The needs and desires of the consumers affect the entrepreneur's orientation towards innovation and thus their risk-taking behavior. Similarly, economic and political systems have a significant impact on intrapreneurship. In cases where the economy is more balanced, entrepreneurial activities can be more assertive in innovation and creativity. Entrepreneurs can make accurate strategic plans. Economic crises often appear to be a threat to entrepreneurship/intrapreneurship. However, these threats can sometimes be turned into opportunities thanks to the abilities of entrepreneurs (Durak, 2011: 199). These opinions put forward by Durak, again, do not reveal a clear result in which way entrepreneurship and intrapreneurship are affected by environmental conditions and they point out that the influence can be in both directions.

In an environment dominated by fierce competition and characterized by uncertain and complex market conditions, the way to achieve sustainable competitive advantage is through innovation. Because only innovative organizations can adapt to market change. The engine for an organization to innovate is intrapreneurship. New products, new processes, systems and technologies emerging as a result of intrapreneurial activities can give the organization a sustainable competitive advantage (Zahra and Covin, 1995). At the basis of intrapreneurship is the idea of recognizing opportunities in the environment and

bringing together resources and opportunities creatively in an organization in order to create value (Naktiyok and Kök, 2006: 87). When considered in this context, it is seen that organizations with the ability to turn crises into opportunities can turn the situation into an advantage with new products, processes and practices thanks to intrapreneurship. In order to achieve this and to get over your problems, intrapreneurship activities must be continued in crisis and adverse environmental conditions.

Organizations today can be viewed as open systems that receive inputs from their environment and transform those inputs into outputs to achieve their goals (Mullins, 1990: 71). For this reason, the continuity of organizations depends on their ability to adapt to their environment. Because, the uncertain environment created as a result of increasing complexity and change in the environment requires organizations to be sensitive to their environment and greater adaptation capacity (Naktiyok and Kök, 2006). Intrapreneurship also starts with an opportunity seen in the environment. Thinking that they can affect the environment as well as being affected by the environment, entrepreneurs do their intrapreneurial activities in order to respond to environmental turbulence and uncertainty and establish a strong strategic position (Thompson, 1999: 284). For this reason, organizations' entrepreneurial orientation can support or hinder the change, uncertainty and dynamism characteristics of the environment. Perceived environmental negativity or danger other than environmental dynamism, in other words, negative developments in the external environment are also extremely important for intrapreneurship (Antoncic and Hisrich, 2001). Miller and Friesen (1983: 225) investigating how changes in environmental conditions affect entre/intrapreneurial behavior found that changes in innovative behavior and competitive proactivity are significantly associated with changes in environmental negativity. In a study conducted by Zahra and Covin (2001) on 102 manufacturing organizations, it was determined that environmental negativity is in a strong relationship with special indicators of intrapreneurship (product development etc.). One of the studies showing showing this negative relationship is the study by Lekmat and Chelliah (2011). In the said study, it was stated that individual and corporate intrapreneurship were significantly interrupted during crisis periods.

In the study conducted by Naktiyok and Kök (2006) in private enterprises in Denizli, it was determined that the effect of environmental negativity / threat factor on intrapreneurship is higher than the environmental dynamism factor. Although there is no exact consensus on the direction of the impact, there is evidence that

the external environment is the determinant of intrapreneurship in a positive or negative way (Covin and Slevin, 1991: 11; Dess et al., 1997; Morris et al., 2008). Environmental conditions are seen as a multidimensional concept that provides initial conditions that facilitate or restrict a firm's all entrepreneurial behavior (Kollmann and Stockmann, 2008: 14; Zahra, 1993: 10). Based on the work of Miller and Friesen (1983: 226), environment variables such as dynamism (differentiation from the continuous), extreme competition and heterogeneity are widely used in the literature and have been found to affect internal entrepreneurship. Dynamism refers to the perceived instability and ongoing changes in the market. Organizations usually respond to challenging conditions found in dynamic environments by adopting an entrepreneurial stance (Antoncic and Hisrich, 2004). Extreme competition, on the other hand, represents the threat level of the intensity of competition and the up and down movements of the company's main industry. When competitors' products change rapidly or customer needs fluctuate, firms are more likely to become internal entrepreneurs (Kollmann and Stockmann, 2008: 16; Zahra and Garvis, 2000). Heterogeneity encompasses variations between a firm's markets that require diversity in production and marketing orientations. Firms operating in many different markets are likely to learn from their extensive experience with competitors and customers (Entrialgo et al., 2001: 227; Morris et al., 2008). Supporting these studies, Lekmat and Chelliah (2011) found that the external environment is an important determinant for intrapreneurship as a result of their study.

The external environment, which is shown as one of the main determinants of entrepreneurship, affects intrapreneurship in many ways also (Miller, 1983: 227; Khandwalla, 1987: 45; Covin and Slevin, 1991). Researchers who construct probability models to explain and predict entre/intrapreneurship and its consequences have included a number of variables that exist in the external environment (Zahra, 1991, 1993; Antoncic and Hisrich, 2001, 2004). While some environmental features such as dynamism, technological opportunities, growth of the market and industry, demand for new products are seen as favorable for entrepreneurship, other features such as negative changes and crises, excessive competition are seen as negative. Environmental positive features are specified in four dimensions. These are dynamism, technological opportunities, industry growth, and demand for new products (Zahra, 1993). It has been determined in many studies that these environmental features may be suitable for intrapreneurship. Environmental characteristics (dynamism, technological opportunities, industry growth, demand for new

products) were found to be highly and positively associated with internal entrepreneurship in the study conducted by Antoncic (2007), whose sample was companies in Slovenia and the USA.

3. COVID-19 Pandemic Impacts and Predictions for The Future

Covid-19 (Corona) virus first appeared in Wuhan in December 2019, spread to different parts of China and quickly became a global epidemic in March 2020. It has been clearly seen in the process that a biological agent has the potential to affect the whole world. In addition to the problems caused by the pandemic and the crisis environment, many evaluations and predictions are made on the possible economic, political and security consequences of this pandemic in the upcoming period. It is thought that the upcoming process will cause a huge transformation in the world after the industrial revolution and the internet revolution and bring along disruptive innovations but maybe some significant problems.

According to Harari (2020), who stated that we will encounter a different world after the pandemic, not only health systems but also economy, politics and cultures will be shaped. According to Ulutaş (2020:14), the economic dimensions of the pandemic that we have not yet predicted will cause human mobility, political turmoil and transformations on a global scale. For this reason, those who will manage the transformation in the global system after the epidemic should be actors with the vision and capacity to take responsibility in economic restructuring. Similarly, Hanioglu (2020: 26) states that the degree and extent of the effects of the Covid-19 pandemic will be determined according to its duration and destruction. At this point, he emphasizes that it would be meaningful to expect results such as global economic stagnation, strengthening of authoritarianism, widespread use of remote working and artificial intelligence, narrowing of private life and increasing the shares allocated to health and emergency planning in the short term.

According to the pessimistic scenario, the pandemic situation may cause serious damage to trade and economic relations and the movement of people and goods between countries, and normalization will take time. All economies will experience a serious recession in the upcoming period, which harms global production. As a matter of fact, export quantities and investment rates have begun to fall in the world and all strategic planning has suddenly lost ground. Manufacturers in every sector are somehow affected by this

crisis and pose a risk of failure to survive for many. During this period, some producers completely stopped their production, while there was a great decrease in demand in some sectors, a great increase in demand was observed in others. According to Fernandes (2020), it is assumed that in the crisis period, service-oriented sectors will be more affected than agriculture or industry.

Studies have been carried out on technologies such as the internet, artificial intelligence and robotics for a long time in order to reduce labor costs and save labor. Robotic technologies and artificial intelligence in particular have begun to replace humans (less human / more intense technology). During this period, it was possible to experiment on these technologies. In addition, the Covid-19 virus not only affected people, but also made the just-in-time system and globally distributed production questionable. Isolationist policies that countries have started to implement may lead to innovations and rapid channels in the logistics sector. According to Hanioglu (2020:26-27), states, companies and societies try to strengthen their capacity to cope with prolonged periods of economic self-isolation. Companies will now be able to rethink and downsize the multi-stage, multi-country supply chains that dominate production. With localized production facilities, less foreign-dependent production models will be built. The aim will be to create a reliable domestic market that is less dependent on the outside. The localization of technologies in critical areas such as medicine, agriculture and defense will accelerate.

Thanks to digital technologies, it is predicted that distance education and on-line shopping systems will become more widespread. During the epidemic period, businesses that do not have an online service option have been facing financial difficulties and gaining this ability is more expensive than usual. Businesses that want to stay competitive after Covid-19 will find ways to have online services, including logistics and distribution systems, even if they have physical locations (Marr, 2020).

There is widespread use of new technologies in conjunction with medical / healthcare treatment to effectively fight the disease and reduce the risk of its spread. Numerous innovative technologies have been used in different countries to identify affected people, control their mobility, reduce the risk of transmission, and develop proactive recovery strategies and actions. Artificial intelligence (AI), big data, 5G, drones, autonomous vehicles, robotics, etc. technologies have been used in conjunction with other new technologies

(Shaw, Kim, and Jinling, 2020). These systems and technologies have been used extensively in the field of education and health, especially in the production and service sectors.

Four strategic areas are emphasized by Sneader and Sternfels (2020) that businesses will focus on to enable them to exit this process. These are rapid recovery of revenues, restructuring processes, rethinking organizational structures and accelerating the adoption of digital solutions. Profitability will decrease, but supply stability will increase. In addition to the supply chain, the pandemic can open the door to great changes in our lives and a new industrial revolution.

The process experienced has shown us the importance of technological infrastructure. In addition to the work that can be done with technology, an opportunity has been created to experience remote out-of-office working methods. It is thought that the epidemic will accelerate the development of the infrastructure required for online work. It has been observed that meetings, trainings and interviews can be made by using technologies such as virtual reality, augmented reality and extended reality and applications such as Teams, Skype, and Zoom without the need for physical coexistence. By making use of these experiences, meetings to be held in different offices and / or between factories and offices will continue to be held in the same way after this crisis is over.

Digital workflows and automation have become a necessity beyond being a target that companies have stated in their vision. The world is going through a rapid and continuous digitalization process and is transitioning to a digital structure. With the increase in the resources provided after Covid-19, this paradigm change process is expected to accelerate. Prior to the crisis, the driving force behind Industry 4.0, which was to provide competitive advantage, cost reduction, increasing productivity, reducing labor costs, flexibility, sustainability and innovation were focused on (Robinson, 2020). Technologies such as artificial intelligence, data analytics, cloud computing, robotics, automation, internet of things, 3D printing, which have been used for a long time, are increasingly taking the place of humans. It is expected that “smart factories” that can produce by coordinating and optimizing themselves almost independently of people will rapidly and widely expand their field of activity. The process that started with the virus will lead to the prevalence of digital transformation in all businesses. According to McMahon (2020), the pandemic has revealed the reality of Industry 4.0. Considering the financial impact of the crisis on producers, it is seen

that it has caused a large decrease in expenditures and investments that are not currently required. Many Industry 4.0 solutions that are currently being considered or implemented fall into the category of non-core business activities. However, as the crisis is over, it will be accepted that progress in Industry 4.0 is much more necessary (Robinson, 2020).

New tools, methods, rules and systems will be developed to ensure optimum benefit from new technologies. A new change in consumer behavior is expected with new producer behavior. With the beginning of the industrial age, it is predicted that the working hours, shift, desk or working requirements depending on a specific location will decrease over time. New habits such as video meetings and the proliferation of remote work will redesign the workplace of the future, which is constantly changing and developing, and the way it works will be renewed. Thus, working hours will decrease and more effective and productive works will be done with less time. The consumer behavior changes that occur with the pandemic force companies and entrepreneurs to be flexible, adapt to change, and reflect on digital creative solutions that can meet new needs. Although the use of some technologies started before the pandemic, it has become widespread or new technologies have started to emerge during this process. In this process, most people and companies have been able to effectively use their communication infrastructure, computer and mobile communication technologies. Thanks to instant messaging and video conferencing applications, the fear of infection that entered our daily lives before the epidemic, and the "stay at home" practices, we frequently use applications where we share information such as voice, file, message and location. Similarly distance education, a method that has been used by some educational institutions for a long time and is mostly used as a complementary application, has come into life as a necessity in this period. The existing infrastructure is considered as an advantage for distance education. Since the ability to adapt to technology is very high compared to the past, it is ensured that this process is effectively evaluated by both teachers and students in a short time. Regardless of where you are, the opportunities provided by being able to reach every part of the world will be used by many institutions and people after the end of this process.

During and after the global Covid-19 pandemic, many changes are experienced in social life, whose socio-psychological and behavioral effects may be relatively longer. These changes occur either as a result of the decisions taken or the restrictions imposed, or the realization of the mistakes people have made in social life

so far and they learn many lessons. With the help of technology, new applications, new tools, methods, rules and systems will develop in order to obtain benefit from these changes. As a matter of fact, the pandemic forces humanity to innovate, work and change the way they live (Marr, 2020). Serious change has also been made possible in working conditions. Flexible working hours and home-working models, which have become easier thanks to new technologies, are becoming widespread.

As seen and evaluated, the effects of the pandemic we are experiencing will be significant in all areas. These effects will have impacts on the business world and the manpower, which is the main resource of the business world. These impacts will have impacts from the way the workforce in question does business to many in-house processes. One of these areas is predicted to be entrepreneurship behavior that will respond to these macro level changes. However, the direction of this effect and whether it varies according to some characteristics of the employees was evaluated problematically.

4. Research

4.1. Purpose of the Research

The main purpose of this study is to determine the effects of the Covid-19 pandemic and the changes in environmental factors (with threat and opportunity approaches) in which all organizations are involved, on organizational or individual intrapreneurial behavior. Most of the studies based on the importance of intrapreneurial behavior for all organizations have focused on the effects of internal factors. There is not enough study and no established consensus on the impact of environmental factors on intrapreneurial behavior for organizations. In addition, situations with global effects such as Covid-19 are not the type that can be created artificially and studies can be made on the results. For this reason, many studies are conducted to measure the possible effects of this new situation, which has emerged and has widespread effects as mentioned in the 3rd part.

The importance of intrapreneurship is mentioned in the literature section. Based on this importance, studies are carried out to determine the factors that will increase the intrapreneurship behavior and performance in all organizations, especially for profit-making companies. It is not possible to say that studies on the effects of environmental factors have reached a full consensus. Global crises such as Covid-19 have a potential to

have a negative or positive impact on internal entrepreneurship due to reasons such as health concerns, restrictions, impossible teamwork, etc., as well as changes in customer expectations, new products, methods, processes and service requirements. The level of affecting the intrapreneurship attitudes and behaviors of these positive and negative effects according to some demographic characteristics of the employees may also differ. The following questions were sought in the study in line with both the general purpose and the secondary aims;

RQ1: What are the intrapreneurship levels of the workforce in the sample before Covid-19?

RQ2: What are the intrapreneurship levels of the workforce in the sample during the Covid-19 process?

RQ3: Is there a significant difference between workforce's intrapreneurship levels before and during the Covid-19 pandemic?

RQ4: Do intrapreneurship levels before and during Covid-19 differ according to the ages of the workforce in the sample?

RQ5: Do intrapreneurship levels before and during Covid-19 differ according to the gender of the workforce in the sample?

RQ6: Do intrapreneurship levels before and during Covid-19 differ according to the education levels of the workforce in the sample?

RQ7: Do intrapreneurship levels before and during Covid-19 differ according to the internal positions of the workforce in the sample?

RQ8: Do the intrapreneurship levels before and during Covid-19 differ according to the institution where the workforces in the sample work?

4.2. Scope and Method of the Research

The sample of this study consists of workforce (managers and other employees) working in different organizations at the level of associate, undergraduate and graduate education. The purpose of this selection is the acceptance that they can better perceive the environmental changes caused by the Covid-19 pandemic and the impact of these changes on intrapreneurship. In addition, it was assumed that this sample participating in the research could represent the intrapreneurship level and change level of the organizations they work with. The measurement developed with this acceptance has been sent to a total of 973 people

from the public and private sectors. Although there is no sector discrimination, 202 respondents were answered by different sectors, especially education, defense, food and agriculture sector, higher education, textile sector, service sector and health sectors. The sample size is acceptably adequate for statistical significance testing with 10% error rate (Yazıcıoğlu and Erdoğan, 2004). Non-parametric statistics are often used when there is no in-depth numerical information about the application and depends only on the subjective judgements of the data providers. Because they rely on fewer and weaker assumptions, non-parametric methods are also used as powerful statistics, even if data on a quantitative scale are available. In this study, this issue was taken into consideration, and a test was conducted on 202 participants. This figure more than meets the sample size requirement for the study. The working framework does not target a clearly defined universe, it generally targets a population working in any business area. The scope of the research is limited to the effects of the Covid-19 pandemic period experienced by the participants on intrapreneurship as an external factor.

It has been evaluated that some of the Covid-19 pandemic and its consequences may positively affect internal entrepreneurship, while others may negatively affect it. In order to find answers to the research questions posed as a result of this evaluation, a measurement development study has been carried out. In the literature, there are many measurements developed for studies on intrapreneurship performance and descriptors of internal entrepreneurship (Sayeed and Gazdar, 2003; De Jong and Wennekers, 2008; Wakkee, Elfring and Monaghan, 2010; Şeşen, 2010; Durmaz, 2011; Rigtering and Weitzel 2013; Gawke, et.al., 2017: 91; Sezgin, 2020). In this study, 2 of the above-mentioned studies are taken as the basis for suitability for the purpose. Studies by Şeşen (2010) and Sezgin (2020) are used in terms of both inclusiveness and the suitability of the questions to a single-factor study, and a 20-question measurement has been selected with the contribution of 2 field experts. Since the general purpose of the study is not focused on sub-factors of intrapreneurship attitude and behavior, the intrapreneurship measurement (scale) has been designed as a single factor. Briefly, the general scope is to determine whether the environmental factors created by the Covid-19 pandemic affect the intrapreneurship attitudes and behaviors of the organization's employees, and if so, in what way.

The scale created has been sent via e-mail and social media (Whatsapp groups, LinkedIn, Instagram etc.) to people working in managerial and employee positions in the public and private sectors determined by the convenience sampling method. The adequacy of the questionnaire has also been asked in order to get their opinions and test the scale, since some of the respondents in question are subject experts and do academic studies. 41 of the 47 people who answered this question has given positive opinions, and 6 states that the questions in the scale are similar. Similar questions are not excluded from the scale because they have asked similar behavior under different conditions.

4.3. Analysis of Data

SPSS 25 (Statistical Package for Social Sciences) statistical analysis program has been used to analyze the data obtained in the study. First of all, reliability and validity dimensions have been investigated in order to draw meaningful results from the questions used in the Intrapreneurship Scale. The cronbach alpha coefficient for the 20-item scale in this study is 0.947, and the total variance explained for the scale is 66.367%. Considering these coefficients, it can be accepted that the scale is reliable.

Normality tests have been conducted to find answers to the research questions and the tests to be applied have been determined according to the results obtained. Kurtosis and skewness values and Kolmogorov-Smirnov test results have been examined to determine whether it shows normal distribution. Findings obtained from different tests applied to research questions are given in the next section.

5. Results

In this section, the findings obtained as a result of the analysis of the data obtained within the scope of the research are included.

5.1. Demographic Findings:

Table 1: Distribution of the participants according to their demographic characteristics

Gender	N	Percentage
Female	69	34.2
Male	133	65.8
Age	N	Percentage
18-24	11	5.4
25-34	32	15.8
35-44	44	21.8
45-54	104	51.5
55-65	8	4
65 and over	3	1.5
Education Status	N	Percentage
Associate degree	4	2
Undergraduate	90	44.6
Postgraduate	108	53.5
Position at Work	N	Percentage
Manager	101	50
Employee	101	50
Institution	N	Percentage
Public	116	57.4
Private	86	42.6
Total	202	100

The demographic findings given in Table-1 show that 65.8% of the 202 participants participating in the study are men and 34.2% are women. When the age distributions are examined, it is seen that the sample is mostly in the 35-54 age range. Most of the participants are from the middle age group. When the educational status of the participants is examined, it is understood that 98% of them have received undergraduate and postgraduate education. Managers and employees participated in equal numbers of studies. 57.4% of those working in the public sector and 42.6% of those working in the private sector.

5.2. Intrapreneurship Levels of Participants

The internal entrepreneurship levels of the individuals before and during the Covid-19 pandemic period are given in Table-2.

Table-2: The internal entrepreneurship levels of the participants before and during Covid-19

	N	Mean	Standard deviation	Minimum	Maximum
Before Covid-19	202	3.8329	.73516	1	5
During Covid-19	202	3.5163	.85452		

To test whether there is a significant difference between the intrapreneurship levels of the participants before and during the Covid-19 pandemic, it has been first tested whether the distribution is suitable for a normal distribution. For this purpose, Kolmogorov-Smirnov test was performed (Table-3).

According to the test, since the intrapreneurship levels are below 0.05 significance values both before ($D(202) = 0.079$, $p = 0.004$) and during ($D(202) = 0.067$, $p = 0.027$) the Covid-19 pandemic period, a normal distribution condition is not met. For this reason, Wilcoxon Signed Sum of Ranks Test, which is a nonparametric equivalent of dependent samples t-test, has been used to determine whether there is a difference between the two measurement results. The data have been sorted before testing.

Table 3: Intrapreneurship measurement Kolmogorov-Smirnov test

	Statistics	df	p
Before Covid-19	.079	202	.004
During Covid-19	.067	202	.027

The Wilcoxon signed sum of ranks test shows that there is a statistically significant difference between levels of intrapreneurship before and during the Covid-19 pandemic period. It is shown in Table-4 as the mean of the ranks before the pandemic = 79.45, the mean rank of the score during the pandemic = 49.50, $z = -7.688$, $p = 0.000$.

Table 4: Intrapreneurship measurement Wilcoxon Signed Ranks test

During Covid-19	N	Average Rank	Rank Sum	Z	p
Before Covid-19					
Negative Rank	117	79.45	9,295.5	-7.688	0.000
Positive Rank	29	49.50	1,435.5		
Equal	56				
Total	202				

The Kruskal Wallis test, one of the non-parametric tests, and the non-parametric test of the Mann-Whitney U Test, have been used for the measurement of the differences that group size may cause in intrapreneurship behaviors depending on the age and educational status of the participants included in the study.

5.3. Internal Entrepreneurship Levels by Age Group of the Participants

The results of the Kruskal Wallis test applied to test whether there is a significant difference between the intrapreneurship levels of the participants before and during Covid-19 and age groups in terms of the answers given are shown in Table-5.

Table 5: Kruskal Wallis test analysis for the difference between the age group and intrapreneurship levels of the participants

Groups	N	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19
		Rank Averages		Kruskal Wallis H		sd		p	
18-24	11	120.77	140.36	17.355	15.557	5	5	.004	.008
25-34	32	68.27	74.77						
35-44	44	93.89	108.77						
45-54	104	112.53	104.37						
55-65	8	117.38	99.81						
65 and over	3	72.17	42.50						

Intrapreneurship levels differ significantly both before and during the Covid-19 pandemic period according to the ages of the participants ($H = 17.355$, $SD=5$, $p=0.004$; $H = 15.557$, $SD=5$, $p=0.008$). As seen in the table, there is a statistically significant difference between the answers given by age groups, since the level of significance is less than 0.05. When the averages are examined, an increase is observed in the levels of internal entrepreneurship, especially in the ages that can be considered young and up to the age of 44, while the negative effects of the Covid process are observed in the age groups 45 and over.

5.4. Intrapreneurship Levels of the Participants by Gender

The results of the Mann-Whitney U test applied to test whether there is a significant difference between the genders of the participants and their intrapreneurship levels are shown in Table-6.

Table-6: Mann-Whitney U test analysis for the difference between the gender of the participants and the level of intrapreneurship

	Gender	N	Average Rank	Rank Sum	U	P
Before Covid-19	Female	69	85.59	5,905.5	3,490.5	.005
	Male	133	109.76	14,597.5		
During Covid-19	Female	69	89.72	6.191	3,776	.039
	Male	133	107.61	14.312		

Since the p value is less than 0.05 as a result of the Mann-Whitney U test, there is a statistically significant difference between the answers given. Depending on the gender of the participants, intrapreneurship levels differ significantly both before and during the Covid-19 pandemic (U = 3,490.5, p=0.005; U = 3,776, p=0.039). Throughout the pandemic, intrapreneurship has had a positive effect on women and a negative effect on men.

5.5. Intrapreneurship Levels According to the Education Levels of the Participants

The results of the Kruskal Wallis test applied to test whether the intrapreneurship levels before and during Covid-19 differ significantly according to the education levels of the people in the sample are shown in Table-7.

Table-7: Kruskal Wallis test analysis for the difference between the education levels of the research participants and their intrapreneurship levels

Groups	N	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19
		Rank Averages		Kruskal Wallis H		sd		p	
Associate degree	4	65	79.25	4.160	7.419	2	2	.125	.024
Undergraduate	90	94.95	90.06						
Postgraduate	108	108.31	111.86						

There is no difference in the intrapreneurship levels of the participants according to their education levels before the Covid-19 pandemic (H = 4.160, sd=2, p=0.125; p>0.05). However, during the pandemic, intrapreneurship levels differ significantly in terms of education levels (H = 7.419, sd=2, p=0.024, p<0.05).

5.6. Intrapreneurship Levels of the Participants According to Their Internal Positions

The results of the Mann-Whitney U test applied to test whether there is a significant difference between the in-house positions of the participants in the research and their intrapreneurship levels are shown in Table-8.

Table-8: Mann-Whitney U test analysis for the difference between the in-house positions of the research participants and their level of intrapreneurship

	Class	N	Average Rank	Rank Sum	U	p
Before Covid-19	Manager/Administrator	101	113.8	11,494	3,858	.003
	Personnel / Employee	101	89.2	9,009		
During Covid-19	Manager/Administrator	101	112.04	11,316	4,036	.01
	Personnel / Employee	101	90.96	9,187		

Since the p value is less than 0.05 as a result of the Mann-Whitney U test, there is a statistically significant difference between the answers given. The level of internal entrepreneurship varies according to the location in the institution (U = 3,858, p=0.003; U = 4,036, p=0.01). Internal entrepreneurship levels of managers are significantly higher than their employees.

5.7. Intrapreneurship Levels of the Participants According to the Institution They Work

The results of the Mann-Whitney U test applied to test whether there is a meaningful differentiation in the intrapreneurship levels of the participants according to the institutions they work with are shown in Table 9.

Table 9: Mann-Whitney U test analysis according to the difference between the institutions where the participants work and their intrapreneurship

	Institution	N	Average Rank	Rank Sum	U	p
Before Covid-19	Public	116	96.55	11,199.5	4,413.5	.162
	Private	86	108.18	9,303.5		
During Covid-19	Public	116	91.44	10,607	3,821	.004
	Private	86	115.07	9,896		

As a result of the Mann-Whitney U test, it is seen that there has been a significant difference during the pandemic (U= 3,821, p=0.004; p<.05), although there has been no statistically significant difference between the public and private sector employees in terms of intrapreneurship levels before the Covid-19 pandemic (U= 4,413.5, p=0.162; p>.05). When the difference is examined, it is noteworthy that the average of the answers given by private sector employees participating in the study to the questions at the intrapreneurship scale increased, while there was a decrease in the public sector.

6. Conclusion and Discussion

Covid-19 pandemic has been perceived as a "Crisis" in almost every field all over the world. In parallel with this perception, although its results differ from country to country, it has created negative effects, especially human health and economy. Various measures have been developed in order to cope with the pandemic crisis, but all measures have yielded limited results in reducing the negative effects of the pandemic.

Studies to determine the effects of the Covid-19 pandemic are carried out in all kinds of institutions, especially in the academic world and international institutions. The purpose of these studies is to use this as a decision input after the determination of the effects. In the study that will serve this approach, it is aimed to determine the effects of the pandemic on intrapreneurship (Klanecek and Antoncic, 2007:36; Parker, 2009:20), which is one of the main factors in the achievement of goals of all institutions and organizations, both public and private sector, in their economic development and in the development and maintenance of their mission. For this purpose, using the previous studies, the scale tool has been developed and shared with a heterogeneous group of approximately 973 people. The main purpose of this approach is to determine the effect of the new environmental characteristics created by the pandemic on the intrapreneurial attitude and behavior without limiting it to any specific field. Participants in the study consist of men and women who are at least associate degree graduates, who work as managers and employees in the public and private sectors. The scale has been answered by 202 people.

In the study to determine whether the new environmental impacts created by the main problematic Covid-19 pandemic create a positive or negative significant difference in the intrapreneurial attitudes and behaviors of people, it has been determined that a statistically significant negative differentiation occurred before Covid-19 and during Covid-19. Considering that there is no clear consensus on this issue in the literature, it is clear that although there are no differences in terms of demographic variables, this generally detected negative effect will make a significant contribution to the literature.

The positive or negative effects of environmental factors on internal entrepreneurship have been examined in many studies (Gürel, 2011: 115; Zahra, 1991; Antoncic and Hisrich, 2004; Dess et al., 1997; Morris et al., 2008). However, the findings obtained about the direction of these effects differ. For example, Durak (2011) argued that especially economic crises will create negative effects on entrepreneurial behavior with the perception of threat, but talented entrepreneurs can turn these environments into opportunities. Lenmat and Chelliah (2011) similarly have found that in times of crisis, intrapreneurship at all levels (individual, team and organizational integrity) will be disrupted. Intrapreneurship is essentially an active attitude towards the environment and its effects, and it can be regarded as the behavior of affecting the environment as well as being affected by the environment (Thompson, 1999: 286). With this approach, whatever its impact (threat or opportunity), a macro change in the environment can be expected to change the intrapreneurial attitude and behavior. With the acceptance of a reaction approach towards the environment, it is more plausible that this attitude and behavior change is increasingly in a positive way. In the study conducted by Naktiyok and Kök (2006), the findings that radical changes in the industry, regulatory barriers, decrease in market opportunities, uncertainties regarding products will be factors that accelerate intrapreneurship supports this study. Likewise, Miller and Friesen (1983: 228) stated as a result of their research that innovative behavior and proactive behavior in a competitive environment were positively affected by environmental factors. Covin and Slevin (1991), on the other hand, have found in their study that these environmental effects are related to the performance of organizations in environments with environmental crisis effects and entrepreneurship culture and levels. According to the authors, if an organization is already highly entrepreneurial, it performs better in adverse environmental conditions.

Both periodicals and news published on all sources have shown that the Covid-19 pandemic affects people from almost all walks of life. It has been evaluated that the possibility of this effect to include radical negativities about people's lives (death, severe illness, loss of a relative, etc.) negatively affect the employees of the organization in their work in this period. Instead of tendencies such as doing new things with intrapreneurship, acting proactively, gaining advantage in competition, behaviors such as saving the day, doing the job in the minimum vertical, focusing on health issues in isolation have come to the fore. Studies showing that non-pandemic economic crises and other dynamic environmental changes increase and positively affect intrapreneurship are reasonable results in this approach. However, it is noteworthy that a

negative effect was found in the Covid-19 pandemic period, when issues such as teamwork, close work, physical presence, organizational and team synergy were not possible due to limitations and personal health reasons. Thus, it can be said that if the crisis is a crisis in the form of a pandemic or epidemic, it will adversely affect the intrapreneurial attitude and behavior of the employees in the context of the environmental factors where discussions continue. The result obtained from this aspect seems compatible with some studies in the literature. In addition, the study concerns the individual level from three levels. On the organizational level, it should not be overlooked that intrapreneurship attitudes and behaviors may turn out to be different with the influence of organizational managers. The managers / administrators constitute 50% of the sample participating in this study (n = 101). The intrapreneurship attitude and behavior levels of this group are quite higher than employees. However, if the group in question is evaluated as an organization representative or a unit representative within the organization, similar to the general problem, the internal attitudes and behaviors of this group before and during the Covid-19 pandemic were adversely affected.

In addition, the differentiation before and during the Covid-19 pandemic has been examined according to the demographic characteristics of the people. The purpose is to determine whether the Covid-19 pandemic crisis affects employees differently according to some of their characteristics. Firstly, it has been examined whether there is a differentiation according to the ages of the employees. As a result of the analyzes made, results were obtained in accordance with the general acceptance. With the Covid-19 pandemic, a positive effect is seen on the intrapreneurship attitude and behavior levels in the younger and under middle age group and the levels are increasing. It is considered that this age group is effective in perceiving this situation as an opportunity due to its proximity to technology and the fact that the pandemic process brings the use of new technologies to the fore in business processes. In the middle age group, a decrease in intrapreneurship levels begins with the Covid-19 pandemic and this increase grows with the age group. It is considered that the Covid-19 epidemic, which is more likely to affect people's health with the age criterion, affects employees in a similar way. In addition, the fact that employees become more status quo with age and are more resistant to changes especially in situations of uncertainty, support this finding.

According to the results obtained regarding the effect in terms of gender, the pandemic process affected women positively and men negatively. It is not easy to comment, as no premise has been found to make sense of this. Since the level of positive and negative change is not high, there is no conclusion that this has an important meaning. As a result of the analyzes conducted to determine the exposure status of the employees participating in the study according to their educational status, it has been observed that the intrapreneurship attitudes and behaviors of the undergraduate level employees decreased compared to the pre-pandemic, and the graduate level employees increased their intrapreneurship attitude and behavior after the pandemic. The reason for this is that awareness levels and institutional commitment levels are likely to be higher against larger crises that may arise after the Covid-19 pandemic and the negativities that organizations may encounter.

Analyzes made according to the demographic variables working with the managers / administrators have given similar results, and it is not possible to make sense. The last demographic variable is employees' organizations. In this context, it has been observed that public employees are negatively affected by the Covid-19 pandemic in terms of intrapreneurship and their scores decreased. There is a reverse situation in the private sector and internal entrepreneurship scores have increased. The reason for this is the job guarantee in the public sector, trust in the continuity of the institution and insufficient ownership.

Many studies have been conducted on the Covid-19 pandemic, which cannot be created artificially, and its effects. In this period, where the slogan that nothing can be the same is repeated, even by heads of state, business and institution managers have to plan their future. This study, which will provide input to the measures to be taken on intrapreneurship, which has been determined by many researches to be vitally effective for organizations, has the potential to be expanded by adding other variables.

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In this study, the rules of research and publication ethics were fully followed by authors.