

## CHAPTER 12

# REFLECTIONS OF CHANGING HABITS WITH THE DIGITAL TRANSFORMATION PROCESS IN THE CORONAVIRUS EPIDEMIC PERIOD

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### ABSTRACT

There have been various transformations in social habits with the rapid development of technology. Today, the development of technology has caused a digital transformation in many areas. While digital transformation was slow in some periods, it occurred rapidly in other periods. Digital transformation has gained speed in many areas of the world, including Turkey with the coronavirus epidemic. This virus, which seriously affects the health of society, has caused the formation of a global pandemic. While societies apply various isolation methods to protect themselves from the epidemic, the continuity of economic and social life has been achieved through technology. While a limited lifestyle causes people to be deprived of their daily routines, the digital transformation in the fields of information sharing, money management, business, culture, education, and shopping has contributed to the continuation of the social life order. In this research, examples of digital transformation taking place in different areas during the global coronavirus pandemic process and its effects have been examined. These examples have been discussed under five main headings: information exchange, payment methods, shopping, culture and art, business, and school. Although digital transformation does not progress at the same pace in all areas of our lives, it has been seen that it is a strong alternative for societies to survive in sudden and unpredictable crises. It has been recommended that societies become familiar with digital transformation against possible crisis situations that may be encountered in the future and continue by integrating digital transformation into certain parts of life.

**Keywords:** Digital transformation, coronavirus, pandemic, covid-19, society

## 1. Introduction

In the transition from an industrial society to an information society, some changes have occurred in the lifestyles and habits of society. In today's society, information and knowledge management are very important. The Spanish Sociologist Manuel Castells has said that the 21st century will be the information age and this age can be described as an age of technological revolution. Castells has emphasized that information management will be at the forefront of this new age and many understandings will change with network technology (Castells, 1996). In this process, considering society, there has been an aspect of digital transformation that needs to be managed about many issues, such as human resources, financial, and technological infrastructure (Matt, Hess & Benlian, 2015). Gulsecen has emphasized that knowledge was very important in the past and was expressed in various proverbs and discourses (Gulsecen, 2012). She has stated that the information in people's minds is capital. Known as the Communication Theorist, Marshall McLuhan has emphasized that technological advances will turn the world into a global village with the concept of "Global Village". McLuhan, who was seen as an advanced thinker of his age in the period when the internet was not discovered, has emphasized that the concept of time and space has disappeared and that access to information can be achieved through digital transformations (Powers & McLuhan, 2015). The concept of a global village, which is thought to express the Internet, has helped to work in all community systems regardless of location.

The coronavirus epidemic, which threatens the health of millions of people globally, has emerged as of the end of 2019. The countries have taken various measures like the curfew with the increasing number of patients and death rates and have continued to work to prevent the epidemic. Despite the availability of effective drugs, there has been no definitive medicine available for the complete treatment of the epidemic. Therefore, government authorities especially have warned people to stay at home. It has been clear that there will be changes in many habits, behaviors, and lifestyles of individuals who continue their lives in their homes away from their routine social lives. The new normal has emerged in countries after the coronavirus pandemic. The new normal is the settlement of a new order that has an impact on economic and social life with the onset of a social crisis. The concept has first used in the 2007-2008 economic crisis and today after the coronavirus pandemic. (El-Erian, M. A. & Per Jacobsson, 2010). The studies carried out by many research companies also support this idea. The global research company Ipsos Turkey CEO Sidar Gedik has said that situation especially health size will go down in history with the social and economic impact and perhaps we live in an era that will change the layout. He said that the coronavirus pandemic could cause

changes in attitudes and behaviors in the community (Ipsos Turkey, 2020). The fact that people must stay in their homes during the coronavirus epidemic process, the existence of digital transformation is felt in shopping, education, business, culture, and many other areas. The power of technology and the internet has been much more understood.

This study has been aimed at investigating the effect of different social transformations in the digital context after the coronavirus pandemic occurred in Turkey. Working steps have been applied with the relational research method, which is one of the qualitative research methods. The idea that the coronavirus pandemic in Turkey is related to the technology adoption the society constitutes the hypothesis of this study. In line with the literature review and current data, it has been determined that the coronavirus pandemic is related to five main headings in the technological field in Turkey. The literature has been searched by following a qualitative method, and within the scope of the analyzed findings, five main headings have been identified in which digital transformation has been observed. Digital transformation has intensified as areas where information sharing, payment methods, shopping, culture and art activities, business, and school are presented. In the conclusion and discussion section, the domains and speed of impact of digital transformation have been commented on. Since there are many possible areas affected by the coronavirus pandemic, the research universe is limited to daily life where technology is actively used. In addition, the limitations of this study are the uncertain aspects of the coronavirus pandemic and the inability to determine the possibility that the affected areas are variable. The study has been expected to provide information about the digital transformation effect on the coronavirus pandemic process and to benefit all researchers in the field.

## **2. Digital Transformation**

The phrase of digitization was first described in the publication by Gottfried Wilhelm von Leibniz, *Explication de l'Arithmétique Binaire* in 1703 (Leibniz, 1703). The phrase digitalization, which was initially evaluated as 1-0, has started to exist in many areas with the development of technology and devices. With the development of technology, various transformations have taken place to facilitate the workflow in social lives. Digital transformation has been defined as the application of innovative ideas by taking advantage of the power of technology instead of developing traditional methods of business management (Lankshear & Knobel, 2008). In other words, digital transformation has been defined as the adoption of the digital use of business processes and applications to help organizations compete effectively in an increasingly digital world (Kane, 2017).

### 3. Digital Transformation in the Coronavirus Pandemic

Digital transformation has a structure that progresses in the process of society. However, the digital transformation speeds and processes of societies might differ from each other. Aristovnik et al., who conducted research to measure the speed of digitalization in the Covid 10 pandemic, observed that the digital transformation rates of the Czech Republic, Germany, Poland, Romania, and Slovenia countries have increased. Among these countries, Germany and Romania stand out in terms of digitalization, while emphasizing that digital transformation in the public sector is still progressing slowly (Aristovnik et al., 2021). This study will examine the pace of Turkey’s digital transformation process. With the coronavirus pandemic being sudden and unpredictable, the speed of digital transformation has varied. The digital transformation has gained momentum with the sudden and unpredictable coronavirus pandemic in Turkey. In this context, transforming habits have been investigated and examined in detail under five main titles (See Figure 1).

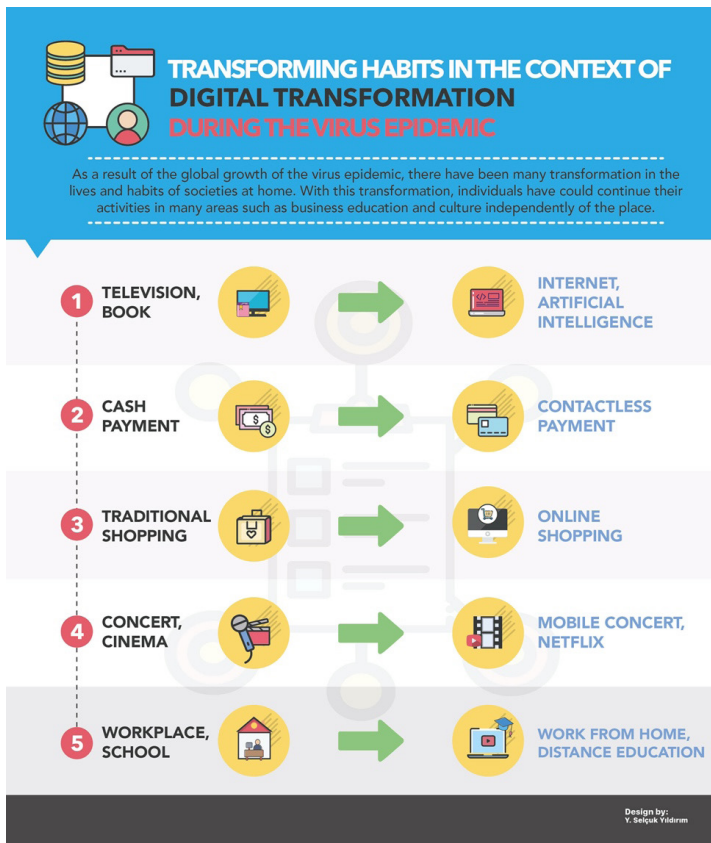


Figure 1: Transforming Habits in the Context of Digital Transformation in the Virus Outbreak Process

### 3.1. Information Sharing and Management in Digital

Sharing, disseminating, and delivering information to the masses has gained importance with the internet. The World Health Organization (WHO) has provided information about the coronavirus pandemic via its website to inform people globally and to follow the epidemic course and transmit instantly updated information in the form of a report (World Health Organization, 2020). With fast data sharing and high accessibility, news follow-up with the Internet has come to the fore. It is of great importance today to transmit information instantly by staying behind the news on television.

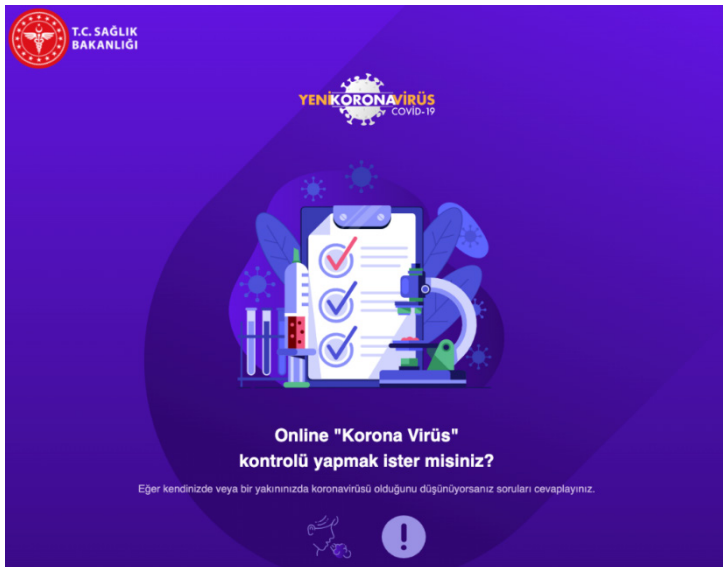
It has been possible to reach and measure more people with the internet compared to traditional media tools. While social media is the first to have a wide range of instant data sharing, there might be gaps in the reliability of this data. So much so that there has been the possibility of uncertain and unreal information circulating through social media channels. For this reason, in the management of any crisis that might occur in society, it has been very important that state authorities exist on online networks and information sharing through these platforms. Within the scope of the coronavirus epidemic, state authorities in many countries have shared information from their own accounts through social networks such as Twitter and Instagram. The Republic of Turkey's Health Minister Dr. Fahrettin Koca also actively has been shared and provided information on his personal Instagram, Twitter, and Facebook social media accounts, as well as on live television screens, through his press conferences, in order to inform the public. Sharing up-to-date information with the public at the same time every evening since his first announcement, Koca's social media accounts have become accounts actively followed by social media users. While Turkey Coronavirus cases is yet unexplained, Dr. Fahrettin Koca's number of Twitter followers has been around 300 thousand, after the first announcement, the number of followers has approached 6 million as of May 30, 2020, and this increase by days has been seen (Çalışkan, 2020). As of August 8, 2021, Dr. Fahrettin Koca has 11 million 700 thousand Instagram followers.

On the New Coronavirus Disease website established by the Ministry of Health, the total number of coronavirus tests performed in Turkey, the total number of patients, the total number of deaths, the rate of pneumonia in patients, the number of severe patients, and the total number of recovered patients are instantly shared with the citizens, as well as the measures and measures that can be taken in the society, it also has been published social distancing rules and recommendations (Ministry of Health, Korona Onlem, 2020). In the context of this data, it can be said that the use of internet channels independent of time and place, rather than the limited data sharing hours determined in traditional media, has more prominence in accessing

data. Within the context of the process, not only health institutions but also universities and public institutions have actively used the internet environment for information sharing. While people follow information from traditional media such as newspapers and television, they also prefer to receive information from social media.

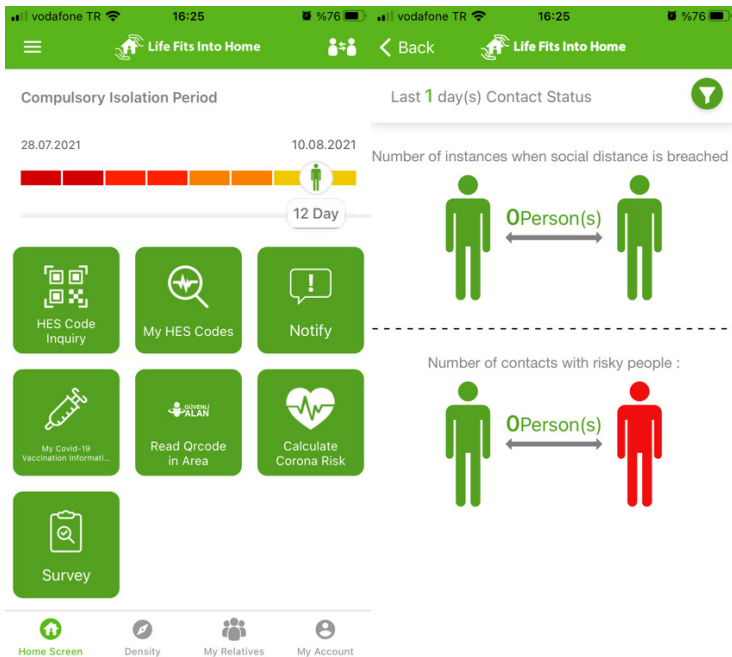
Various studies have been conducted on the applications of artificial intelligence in the field of health. In particular, one of the most important fields has been the early diagnosis of cancer diseases. The Ministry of Health announced the establishment of the “Artificial Intelligence Institute” in December 2019. Minister Koca has stated that there will be systems and approaches that aim to use health systems more efficiently, detect diseases in advance with artificial intelligence early diagnosis systems, and to make it easier for citizens to access health services (Karaaslan & Yener, 2019).

With the coronavirus epidemic in Turkey, technological systems have been used in process management. Disease control with online systems has been important to prevent the accumulation of hospitals and the increase in epidemics. With the “SABİM Alo 184” line established by the Ministry of Health, it has served all people who feel sick by calling. It has been reported that with the online coronavirus screening system established by the Ministry of Health, all citizens who have been sick can check their coronavirus concerns over the internet without coming to the hospital (see Figure 2).



**Figure 2:** Online Corona Virus Control (Ministry of Health, Covid-19 Info, 2020).

During the epidemic, the management of community relations and social distance rules have gained importance. An application called “Hayat Eve Sığar (HES)” was developed by the Ministry of Health and this application has been offered to users for free in the Apple Store and Google Play. The application aims to prevent the spread of the epidemic while informing citizens about the Coronavirus. Through the map on the application, until patients, pharmacies, supermarkets, and subway stops are access information about the epidemic intensity and the rate of risk, it seems. The interface of the application is shown in Figure 3. The rapid production and correct operation of this application can be considered a strong example of the sharing and distribution of information through digital services.



**Figure 3:** HES Application Screenshots (Google Play, 2020).

### 3.2. The Importance of Digital Currency and Contactless Payment

One of the important points of the digital transformation is digital money. In recent years, digital wallets, digital money, and contactless payment concepts have emerged as an alternative to the traditional paper money habit. Digital money has been defined as a payment method in an electronic environment with the help of the internet (Mathur, 2019). With the digitalization of every product used in society, the use of digital money has increased rapidly in addition to traditional money. With the development of digital payment methods, account-based systems have been created that allow anyone with an e-mail address to send and receive

online payments, such as PayPal, known as a digital wallet or payment system (Avaliani, 2004). Digital wallets allow users to pay online with their credit cards or bank accounts. Contactless payment is a payment method without the contact of the store staff, where the user makes purchases with a bank or credit card without touching the cash. Payment is made by bringing the card closer to the contactless reader and communicating with an antenna connected to the chip on the card and the reader on the POS over radio frequency waves (Bankalar Arası Kart Merkezi, Temassız Ödemeler 2020).

WHO has announced that cash can be effective in the spread of the virus during the coronavirus pandemic and emphasized that people should prefer digital money and contactless payment methods in order to prevent the spread of the virus (Gardner, 2020). Due to the virus epidemic, the Interbank Card Center has directed consumers to contactless payments. According to the data provided by the Interbank Card Center, card payments increased by 29% in February 2020, and 1 out of every 7 card payments made in-store was made by contactless payment. The number of contactless payments increased 2.5 times and 31 million contactless payments were made in the first 11 days of March. Contactless payments increased by 23% compared to the same period of the previous month. In addition, as of March 18, 2020, the Interbank Card Center has increased the contactless payment limit from 120 TL to 250 TL per day (Bankalar Arası Kart Merkezi, Temassız Ödemeler , 2020). Thanks to this payment method, citizens have prevented someone else from contacting their personal credit card for their daily grocery shopping. The Contactless payment method has been a good solution for people who care about social distance and hygiene in order to protect themselves from the coronavirus epidemic.

### **3.3. The Rise of Online Shopping and E-commerce**

Online shopping has kept its place as an alternative to traditional shopping since its existence. The rapid rise of electronic commerce around the world has enabled transformations in consumers' shopping habits. According to TUSIAD- Deloitte Turkey's 2019 E-Commerce Report, the leader of electronic commerce in the world is China with 634 billion volumes, followed by America with 504 billion, third Japan with 123 billion, the fourth United Kingdom with 103 billion, and fifth Germany with 70 billion. The global electronic commerce volume has been expected to reach 3.5 billion USD in 2019 (Deloitte Digital & TUSIAD, 2020). E-commerce volume in Turkey has been announced as 31.5 billion TL for multi-channel retail and online retail only, and 28.4 billion TL for non-retail transactions (holiday travel and online legal betting). Turkey's growth trend has continued at 42% (Deloitte Digital & TUSIAD, 2020). During the epidemic, people have turned to online shopping due to being isolated



at home, shopping malls being closed, and the exhaustion of many products in traditional markets. According to the data of the Interbank Card Center (ICC), card payments have been made online reached 6.4 billion TL in the first 11 days of March 2020 (Bankalar Arası Kart Merkezi, Temassiz Odemeler, 2020). When the data has been compared with March 2019, when the total monthly payment was around 28 million TL, it has been observed that there was an increase in the contactless shopping area due to panic in the epidemic (Bankalar Arası Kart Merkezi, İnternette Yapılan Kartlı Odeme İşlemleri, 2020).

According to the data shared by the Ideasoftware company, which provides infrastructure services to more than 25 thousand e-commerce sites in Turkey, in April 2020 home textile, hobby toy products, agricultural products, dowry-glassware, stationery materials, music, white goods, jewelry, hunting and camping products sales increased significantly compared to March when the first case has been announced (Table 1). In addition, the company has shared the monthly sales data in this process with the live shopping tracking system it has established (Ideasoftware, 2020).

Category	Increase Rate Compared to the Previous Month
Home Textile	61,19 %
Games, Hobbies, Toys	52,73 %
Agriculture and Organic Products	46,46 %
Dowry and Glassware	44,32 %
Office and Stationery	41,78 %
Musical Instruments	39,09 %
White Goods and Home Appliances	30,07 %

Staying at home for a long time due to the epidemic, the fear of insufficient food stock and the development of contactless shopping habits could be counted among the reasons for the increase in the number and amount of shopping.

### 3.4. Digital Concerts, Museums, Exhibitions, and Conferences

While curfews have been imposed in many countries around the world due to the coronavirus epidemic, the Ministry of Health has also implemented a curfew for certain periods, and as of June 2020, Turkish citizens have been warned not to go out and be cautious unless there is an emergency. All cultural activities such as concerts, museums, cinemas, shopping malls, parks, and weddings where people could come together have been canceled periodically and Health Minister Dr. Fahrettin Koca has continued to warn citizens every

day (Ministry of Health, Tedbir Alir, Yayilmayi Onlersek Hayat Normale Doner, 2020). So much so that, following the increase in cases, all cultural and artistic activities have been canceled for some periods throughout Turkey for an indefinite duration. In these periods, digital environments came into play and allowed the continuation of some of the cultural activities with the home concerts of the artists (Üner, 2020). With the emergence of online platforms in recent years, the audience has met with internet channels. People who had to stay in their homes due to the coronavirus epidemic preferred digital channels as an alternative to television to spend time. Live broadcast chats on social media have increased, and many celebrities have resorted to interacting with their profile lovers on digital platforms. With the increase in TV series viewing rates, the internet broadcasting channel Netflix and the video-sharing network Youtube have announced that they have reduced the broadcast quality to meet this abnormal loading, in other words, the increasing traffic (Martin, 2020). The fact that Netflix is a highly preferred internet channel in the global media and the increase in views during this period supports the view that people's tendency to watch TV series and movies during the epidemic period has increased. Within the scope of the process, online activities that may attract people's attention have been shared on digital channels. In this process, where digital transformation is strongly felt, the concept of online event announcement has emerged, and individuals have started to follow the events they could attend from their homes. So much so that the announcement of the events that will take place online has been shared under the title of "online events of the week" (Kultur Istanbul, 2020). Digital exhibitions and museums have been preferred by users due to the fact that museums and exhibitions are closed periodically (Milliyet, 2020). In this context, it has become possible for cultural activities have been carried out digitally, independently of time and space. The number of online conferences has increased, and it has been emphasized that information sharing can take place independently of place. Eventbrite, the event sharing and ticketing site, has shared a list of upcoming online events (Eventbrite, 2020). Istanbul City Theaters also has wanted to keep up with this transformation and close the distance between them and their audience. Announcing that it will open a curtain in the digital environment special for the 27 March World Theater Day, City Theaters has announced that it will make a first for the audience with its online theater experience and then started to perform online play screenings every week (See Figure 4). Thanks to the power of the internet, people's ability to benefit from cultural and social activities has been made possible independently of their location.



**Figure 4:** City Theaters June Online Game Program (Istanbul Buyuksehir Belediyesi Sehir Tiyatrolari, 2020).

### 3.5. Mobile, Remote Work, and Education

Due to the global spread of the epidemic, the public or private sector in many countries has announced that they have switched to mobile work and that their employees can continue working from their homes. National Aeronautics and Space Administration one of these organizations, announced that they have canceled many events due to the coronavirus, that their employees will continue their work from their homes, and that mobile work is possible with telephones, teleconferences, and many remote working tools (National Aeronautics and Space Administration, 2020). With the circular published in the Official Gazette in Turkey, it has been stated that public employees can work remotely on a rotating basis (Official Gazette, 2020). In this context, the applicability of the working from home method has been seen for many employees who can work via computer and the internet.

In many countries struggling with the epidemic, education has been suspended for certain periods in primary schools and universities during the epidemic process. New decisions were made in education due to the covid 19 pandemic in many countries globally (Oyedotun, 2020). According to the data provided by the United Nations Educational, Scientific and Cultural Organization, education was suspended in 166 countries in March 2020, and then many countries switched to synchronous or asynchronous online education (United Nations Educational, Scientific and Cultural Organization, 2021). China, Italy, Australia, and South Africa are among the countries that have transitioned to online education (Babbar, M., & Gupta, T. 2022). With the agenda of suspending education, it has been emphasized that this process is not a holiday in Turkey, and education will continue with the distance education

model. Through Egitim Bilisim Agi TV, prepared by the Ministry of National Education, he has announced the slogan “distance education, not a vacation”. While primary and secondary school students continue their education from their homes, educational materials for each class and course have been brought together for the students (Egitim Bilisim Agi, 2020). Yuksek Ogretim Kurumu (YOK) has announced that universities will switch to a distance education model with their own infrastructure and techniques, and stated on the web page the digital courses that students can benefit from (Yuksek Ogretim Kurumu, Yok Dersleri, 2020). YOK has prepared an information page about the Coronavirus and actively shared and updated the information in this process (Figure 5). For students who might experience internet use and quota problems in the distance education process, the higher education institution has provided each student with a 6GB quota of education support (Yuksek Ogretim Kurumu, Ogrencilere Egitime Destek Kotasi, 2020). With the technological infrastructure that has been previously available for the distance TV education model, almost all universities have kept up with the distance education model, and the continuity of education has been made possible thanks to digital systems.

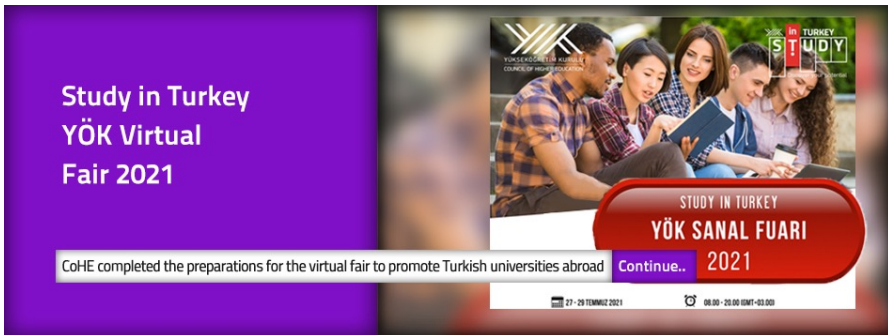


Figure 5: Coronavirus Information (YOK, 2020).

#### 4. Results, and Discussion

The Internet infrastructure has supported the technological development of societies. Rapid information sharing independent of time and place could be seen as an advantage for societies in possible crisis situations. The coronavirus epidemic, which emerged suddenly and caused unpredictable results, has affected many countries around the world and caused high numbers of deaths. The epidemic, which threatens the lives of people, has also disrupted the health and economic infrastructure of countries. So much so, that reducing communication and interaction to the minimum level in order to protect against the virus, and the cessation of transportation between countries have also been the harbinger of a global economic crisis. The

internet has been an important platform for societies to protect themselves from this epidemic and to continue their daily lives.

Curfews has been imposed on various scopes in the early stages of the epidemic in Turkey, and then daily life continued with the concept of a new normal to continue social life. In this process, there has been a rapid digital transformation process in many areas because of the internet and the country's readiness for technological infrastructure. While digital transformation is an ongoing process in e-government, the Central Hospital Appointment System, online banking, and many other areas, it has found its more active place in many parts of life with the coronavirus epidemic. While a limited lifestyle causes people to be deprived of their daily routines, the digital transformation in the fields of information sharing, money management, business, culture, education, and shopping has contributed to the continuation of the social life order.

In the study, first, digital transformation in information sharing and management has been examined. It has come to the fore that social media is used more actively than traditional media in sharing information. Against all kinds of untrue news on social media, state authorities have continued to exist on these channels and have continued to communicate and share information with people. The Ministry of Health has developed the HEPP application for coronavirus disease tracking and epidemic prevention in the new normal process and has provided control and monitoring of the health of individuals with mobile applications. It has been thought that using the HES application will be easy for people who are familiar with the use of the e-pulse application and central hospital appointment systems.

The second area where digital transformation exists has been digital money and contactless payments. The credit card usage rate has increased within the scope of the process, with the possibility of paper money shopping being a virus carrier, and the health authorities have warned about this issue. So much so that people who have not to want to pay for their grocery shopping with paper money have been able to make contactless payment transactions without giving their cards to a second person. This ease of payment method has helped people adopt digital payment methods faster and has allowed people to shop with confidence.

The third area where digital transformation is experienced has been determined as the tendency of people to do online shopping. E-commerce, with the concept of online shopping for the consumer, offers the opportunity to shop independently of time and place. In line with the announced statistics and e-commerce reports, it has been observed that online shopping has increased very rapidly during the epidemic period. The closure of shopping centers,

people's fear of staying at home for a long time, possible lack of food stock, and virus-related hygiene problems explain the increase in online shoppers.

The fourth area where digital transformation is experien'ed has been art activities that can be participated in online. In the context of the process, cultural and artistic activities in closed environments have been stopped. Artistic activities such as concerts, theaters, museums, and exhibitions have been moved online. These cultural activities that people can attend from their homes have been a medicine for the psychological distress caused by staying at home for a long time.

One of the last and most important areas where digital transformation has been experienced has been mobile work and education. Curfews have prevented disruptions in workflow and process management by allowing corporate personnel to work from home with the possibility of a coronavirus epidemic. The rapid transition to the concept of mobile working has supported the viability of digital transformation in working life. Primary education and universities have also continued their educational activities by switching to distance education. Business and education processes, which can be realized independently of place, have allowed people to manage their daily lives on different platforms.

The importance of internet technology has emerged within the scope of all the topics examined in the impact of digital transformation during the coronavirus pandemic period. Although digital transformation does not progress at the same pace in all areas of our lives, it has been seen that it is a strong alternative for societies to survive in sudden and unpredictable crises.

In many areas where digital transformation is experienced in society, it has been predicted that after the epidemic, digital transformation will be kept up and this transformation will be integrated into the traditional process. Many new experiences have occurred that were previously unaware of that may seem challenging. It is an important difference to see that there can be a digital transformation in many areas with the power of the internet and that these transformations have to facilitate effects on the lives of individuals. These transformations experienced during the unprepared epidemic period have created experience within the scope of measures that can be taken for a similar situation that may occur in the future. When the coronavirus pandemic is over, the continuity of digital transformation will be seen in many areas. People and societies have gained an innovative perspective on their daily lives and workflows after the period they experienced. It has been predicted that the social order will be less damaged by digital transformation as a result of possible epidemic problems or natural

disasters that will affect the area. It has been recommended that societies become familiar with digital transformation against possible crisis situations that may be encountered in the future and continue by integrating digital transformation into certain parts of life.

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