

THE ERA OF COVID-19 UNCERTAINTY SPILLOVER EFFECTS OF THE GLOBAL PANDEMIC

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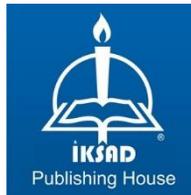
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FOREWORD

The 21st century extreme situations represent major collective upheavals for people and societies. These “black swan” situations refer to low-probability and high-impact events that defy any expert prediction and tend to shape history. Humanity has encountered various natural and man-made disasters that despite their apparent heterogeneity share many common characteristics, such as novelty, unpredictability, complexity and uncertainty. Since the dawn of time, human beings have been facing several devastating pandemics, among which are the Black Death pandemic during the Late Middle Ages, several Great Plagues pandemics or the Spanish Flu pandemic of 1918 causing unprecedented mortality across the world. The pandemic circumstances challenge directly the resilience of human beings and societies in the midst of an emergency oscillating between life and demise.

The current era of the global COVID-19 Coronavirus pandemic, that overwhelmed the world in 2020, has thrown the world's ecosystem into disarray. Indeed, people's lives and societies have been shattered by important transcendental damages caused by the invisible and intangible SARS-CoV-2 virus of 120 nm in diameter. These extraordinary circumstances lead to various breakdowns and tend to elicit a range of adaptive responses of people and societies that allow primordial adjustments to the COVID-19 upheaval. As a matter of fact, the COVID-19 pandemic threat that the world is facing nowadays place human beings' future under the “sword of Damocles”. During the global COVID-19 pandemic, people and societies are forced to navigate in the “fog of war-like times” due to numerous misleading patterns and pervasive uncertainty. Therefore, individual and collective social construction processes allow to fill the void caused by the unknown SARS-CoV-2 virus of uncertain consequences.

The Global Risks Report 2022 highlights the COVID-19 economic and societal consequences that represent a critical threat to the world. The global COVID-19 pandemic creates various divergences that might elicit important local and global tensions leading to cascading impacts. Thus, specific spillover effects of the global COVID-19 pandemic encompass various network effects that are primarily due to the unexpected consequences of globalization. These pervasive effects are impacting various domains ranging from economic, social, environmental to political and societal impacts

of the global COVID-19 pandemic. Therefore, scholars from different disciplines investigate various aspects, causes and consequences of the COVID-19 pandemic that invaded the world. The floating landscape can be countered by scientific evidences that make easier to navigate the era of COVID-19 uncertainty.

The current book dedicated to the global COVID-19 pandemic issues, entitled “*The Era of COVID-19 Uncertainty: Spillover Effects of the Global Pandemic*” aims to investigate and construct solid knowledge foundations in order to seize the complexity of the global COVID-19 pandemic and its consequences. The book chapters aim to offer an interdisciplinary journey into the depths of the causes and consequences of the unprecedented COVID-19 pandemic. Firstly, the beginning chapters offer an investigation of the specificities of SARS-CoV-2 virus based on innovative methods combining multiphoton microscopy and social representations approach, modes of transmission of the virus and related symptoms, and public health policies that allow people and public instances to deal with the sanitary crisis. Secondly, the following chapters aim to investigate direct effects of the COVID-19 pandemic on educational settings and print media. Thirdly, several chapters encompass an investigation of the spillover effects of the COVID-19 pandemic on the field of economics, with the analyses of specific COVID-19 effects on energy sector, cargo industry and human resources management.

The current book that provides a holistic overview of various causes, consequences and spillover effects of the global COVID-19 pandemic contributes to dissipate uncertainty. Although, additional investigations of the COVID-19 pandemic effects on human beings and societies remain necessary in order to foster global cooperation and restore social cohesion that are crucial to address the global COVID-19 pandemic challenges and strive for more resilient societies.

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CHAPTER 1

COVID-19: FROM BIOLOGICAL IMAGE TO THE SOCIAL CONSTRUCTION OF A VIRUS **

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Abstract

The 21st century extreme societal situations, such as the global COVID-19 Coronavirus pandemic, represent major upheavals for people and societies. The COVID-19 pandemic breakdown that has been elicited by the invisible virus SARS-CoV-2 has led to the collapse of representations of the common reality and it has shattered many important aspects of people's lives worldwide. Although, SARS-CoV-2 virus which is at the origin of COVID-19 Coronavirus disease remains unseen to people. The invisibility of this virus gives rise to various representations, projections and imaginations which have a preponderant importance within the population because they drive human beings' cognitions, emotions and behaviours. Therefore, a multidisciplinary research approach is necessary to challenge the "invisible" enemy and the related "domino effects" of consequences. The current research aims to offer a thorough multidisciplinary investigation of this enemy that represents SARS-CoV-2 virus, based on innovative collaboration between hard and soft sciences. To create this synergy, the first objective is to deploy methods from the field of physics, computational sciences and nanometric solutions of microscopy that allow to investigate the biological image of SARS-CoV-2 virus which is an enveloped particle of 120 nm in diameter. Then, the second objective is to investigate the socially constructed representation of SARS-CoV-2 virus by the social representations approach. Therefore, this innovative collaboration that has as main goal the construction of a multidisciplinary overview of SARS-CoV-2 virus images contributes irrevocably to an improved multi-level crisis management effectiveness of current and future pandemic breakdowns.

Keywords: COVID-19, SARS-CoV-2 virus, invisibility, biological image, social constructivism, crisis management

“If the COVID-19 virus could talk, it would have said:

I don't need any weapons to kill a lot of people.”

(Anonymous female, 63 years)

1. INTRODUCTION

The 21st century extraordinary events represent major collective upheavals for people and societies. The COVID-19 Coronavirus pandemic has shattered many aspects of people's lives globally during an extended period. To date, the worldwide COVID-19 Coronavirus pandemic has caused more than 383 509 779 confirmed cases and 5 693 824 deaths (World Health Organization, February 3, 2022). The global COVID-19 Coronavirus breakdown has led populations, health, social and economic systems into a total or partial lockdowns that have never been encountered before. Such an unprecedented pandemic breakdown has been apprehended as a rupture by many individuals that have been forced into social isolation impacting in a harmful manner various aspect of their lives. The COVID-19 Coronavirus disease is caused by an “invisible” and “intangible” virus SARS-CoV-2 of 120nm in diameter which arouses many assumptions, representations, projections, and imaginations that have turned people's reality upside down.

1.1. COVID-19: An Unpredictable Threat of Extreme Consequences

The invisible SARS-COV-2 virus represents major large-scale societal threat nowadays whose public comprehension and people's representations are the results of complex social construction processes. Social construction of reality remains preponderant especially due to the large-scale, unseen, uncertain and intangible nature of the unknown SARS-CoV-2 virus (Pelletier, McLaughlin, Valette, Lefort, & Boespflug, 2021). The COVID-19 Coronavirus pandemic represents irrevocably an emblematic 21st century extreme situation whose nature is inherent to the human condition. Yet, as Giddens (1994) has pointed out, the paradox of our modern societies is that people lead more secure and comfortable lives than ever before, in a world that is plenty of new dangers and tensions. The extraordinary situations, whatever their origins and consequences, elicit a rupture between the usual configuration of the state of the world and people's common perception of

reality. Indeed, major crisis situations are similar to a sudden chaos that could be qualified as a "*cosmology episode*" (Weick, 1993, p. 633) which refers to a profound upheaval in people's universe.

These unprecedented circumstances that invaded people's lives during the COVID-19 Coronavirus pandemic are marked by uncertainty, ambiguity, novelty of the situation, and the feeling of fear that amplifies the perception of an imminent threat that exacerbates the fragility of human existence. Thus, the global COVID-19 Coronavirus pandemic represents an emblematic situation of major collective threat that leads to a loss of usual stable benchmarks (Pyszczyński, Lockett, Greenberg, & Solomon, 2020). Under these extreme circumstances, external and internal conflicts, tend to hamper the understanding and the acceptance of this new reality. Nevertheless, the "*lifting of chaos*" in extreme situations becomes possible, primarily through meaning-making and social construction processes (Jodelet, 2020; Pelletier, 2016) that allow people to overcome the collective trauma (de Jong, Ziegler, & Schippers, 2020; Pelletier & Drozda-Senkowska, 2019a). Specifically, the "invisible" and "intangible" SARS-CoV-2 virus requires the build-up of a concrete representation of this unknown and dangerous virus that has quickly spread across the globe. Although, the lay perception of SARS-CoV-2 virus is irrevocably underpinned by numerous distortions between the biological image of the virus and people's social representations.

Therefore, the global COVID-19 Coronavirus pandemic requires the collaboration of multiple research disciplines that offer a holistic investigation of the unprecedented situation. The interdisciplinary approach of CoviZion research program, conducted currently in France, is based on innovative collaboration between hard and soft sciences. The aim of this research is to investigate thoroughly various images of SARS-CoV-2 virus that remains the unseen enemy with a thousand faces.

2. COVID-19: BIOLOGICAL IMAGE OF A VIRUS

2.1. Importance to Investigate Biological Images of the Virus

Because of their apparent complexity, scientific research is sometimes misinterpreted by a population informed on these topics only through the prism of mass media that holds incomplete information. This dark side that

surround researchers' world and isolate the information for the rest of the population can engender mistrust of the whole research world. This is the case, for example, of genetically modified organisms (Wunderlich & Gatto, 2015) and of certain infectious diseases, that were recently experienced with the COVID-19 Coronavirus. An appropriate way to elicit people's interest for scientific results is by diminishing this informational shadow through simplified experiments combined with explicit and significant results of infectious agents or by any other scientific advances that are debating in society. In this perspective of simplification, we turned to the observation of endogenous fluorescence on the part of the proteins of viral particles of SARS-CoV-2 to provide the best possible information about the new virus and to induce responsible behavior to people through reliable health instructions. Thus, the additional aim of the current investigation is to contribute to restore trust between basic research and the population (Kreps & Kriner, 2020).

On the basis of this reflection about the prevention of the pandemic, it seems relevant to investigate the questions of the population in order to better understand the scientific approaches and the resulting sanitation policies (Pelletier, McLaughlin, Boespflug, Ferrandon, & Lefort, 2021). Information about virus and diseases can be very sensitive and unqualified orator or institution can provide contradictory advices under the guise of scientific council. Thus, making people understand the importance of the scientific work rather than imposing their vision is one of ways to reduce the share of skeptics within the population.

2.2. New Methods to Study 120 nm Objects

Insofar as we want to address the greatest number of people, the presentation of results requires the acquisition of obvious images of the biological mechanisms that researcher aims to explain. However, microscopes are subject to the diffraction limit making these soft solutions difficult to observe objects such as organisms smaller than 200 nm. The SARS-CoV-2 viral particles presenting a diameter 100 thousand times smaller than a human hair (around 120 nm) is therefore necessary to go beyond the diffraction barrier. Several solutions have been affordable since the emergence of super-resolution technologies. The purpose of these techniques is to reduce the

impact of the Airy profile at the image through the complete knowledge of the point spread function (PSF) of the system (Lefort, Chouzenoux, Magnol, Massias, & Pesquet, 2020), induced when the sample is excited by a light source. The reduction of this information overflow emitted by the sample will make it possible to refine the signal source that comes from the sample and thus improve the resolution of the image or the ability to discriminate two points side by side on the image.

Recently, many different super-resolution microscopy techniques have appeared (Hell et al., 2015), and below are some examples. PALM microscopy seeks to activate the fluorescence of fluorophores randomly to have only one PSF per fluorophore and then reconstruct a final image combining a multitude of sample images. This technique requires labeling with fluorophores able of extinguishing and activating depending on the given light signal. Light sheet microscopy (Wan, McDole, & Keller, 2019) will collect the light signal emitted by the sample perpendicular to the sample excitation signal, improving resolution especially in the optical axis, and enabling 3D acquisitions. STED-type microscopes will use a de-excitation beam around the excitation beam, reducing the PSF around the fluorophore and thereby improving resolution. Adding spinning disk to a confocal microscope also improves contrast and resolution, requiring a posteriori reconstruction of the final image. The drawbacks for some of the techniques mentioned above is that the sample must be marked and / or fixed to obtain quality images. In this way is not possible to acquire in depth images quickly without damaging the living sample.

Another image analysis technique rests on the implementation of specific computational strategies for the image analysis and the extraction of information lost in blur and noise. The Figure 1 highlights the effect of the instrument on the image deformation for object dimensions in the same range of the resolution (Lefort, Chouzenoux, Magnol, Massias, & Pesquet, 2020). The distortion of the object on the image can be corrected by image processing algorithms to reduce image convolution and render it closer to the original object. In this study, fluorescent microspheres similar in size to viral particles were used to calibrate the image processing software. It is in this context that the microscopy images obtained from the viruses were processed by the FAMOUS deconvolution system (Lefort et al., 2021), developed by the

Digital Vision Center (CVN) from CentraleSupélec (Paris-Saclay University, France) in collaboration with Xlim Research Institute (University of Limoges, France), starting from an image recorded in multiphoton microscopy.

The technology inherent in multiphoton microscopy (Larson, 2011) uses a pulsed beam that allows the emission of photons in a region localized at the optical plan, removing in this way the parasite light that is usually produced in more standard solutions of optical microscopy (bright field or confocal for example). This optical solution reduces the damage inflicted on the sample during the acquisition and refine the emission of the signal from the sample by targeting a single focal plane. It was with these parameters that we acquired the images of viral particles and calibrated the parameters used for deconvolution by the FAMOUS system.

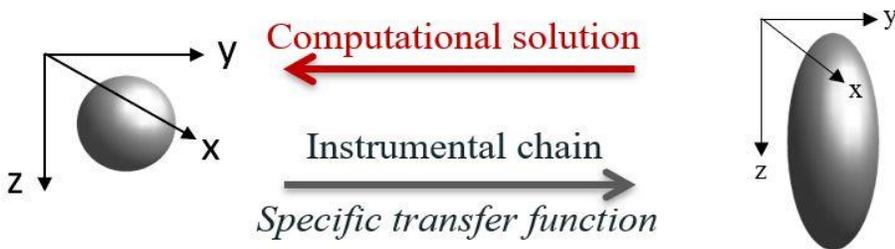


Figure 1. Impact of optical microscope on the image and correction by a computational solution resting on a deconvolution process (red arrow).

2.3. Study of Biological Images of SARS-CoV-2 Virus

To obtain endogenous fluorescence image acquisitions of viral particles and reduce the impact of parasitic fluorescence under a multiphoton microscope it was necessary to purify the sample as much as possible from cell debris and culture medium. This purification took place in three stages. First, the supernatant from infected cell culture media was clarified to remove cell debris and passed under UV beam for 1min to inactivate the viral particles by breaking DNA or RNA bonds in their genetic material. The medium was filtered by centrifugation in Amicon 4mL tubes for 10min at 5000g to keep only virus-sized particles. Finally, the filtrate was taken and transferred to 2mL Eppendorf tubes, diluted by half in PBS and filtered by 40 μ L beads on a magnetic rack after 30min of incubation. This protocol was realized in a biosafety level 3 laboratory (BSL3) specialized in virus

treatment. Free inactivated cytomegalovirus and SARS-CoV-2 label-free virions were used for these acquisitions. The same preparations were analyzed with a multiphoton microscope and an environmental scanning electron microscope (ESEM) to have a different view of the surface of the viral particles at higher magnification. The ESEM images presented in Figure 2 were acquired with FEI ESEM Quanta 450 FEG.

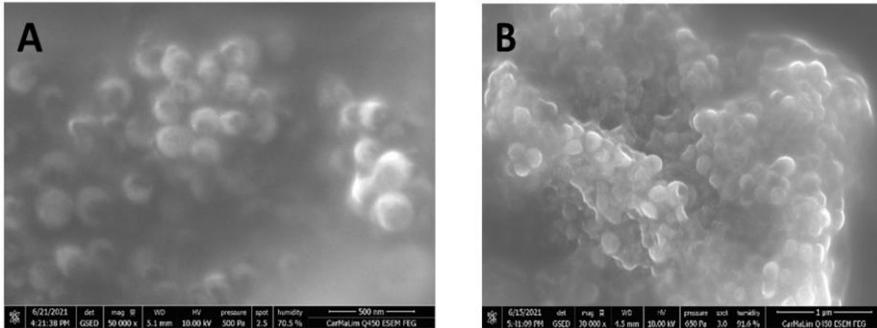


Figure 2. Images acquired at the environmental SEM of samples of CMV coupled to magnetic beads (A) and of SARS-CoV-2 coupled to magnetic beads (B).

As observed in this figure the viral particles have a dark marking on their envelope and a smooth surface. The shape of the viral particles and their size seem to correspond to the expected scales and the prolonged zooms at high pressure induced their destruction in a few seconds. These images allowed a better understanding of the observations of multiphoton microscopy in the distribution of the viral particles around the magnetic sphere.

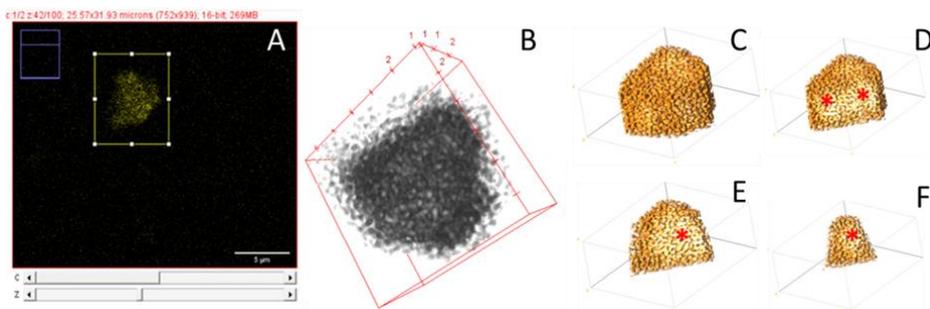


Figure 3. 2D (A) and 3D images of the agglomerate of labeled virions around the magnetic sphere, wavelength: 770nm, emission filter 495-540nm, average power at the sample stage: 5mW, PSF estimated by FIGARO of 275 nm in diameter. C to F. 3D image of the agglomerate of a cluster of labeled virions coupled to the magnetic sphere (red stars) at different resected plans.

In this way, the viral particles coupled to the magnetic sphere could be observed under a multiphoton microscope and reconstructed in 3D and are presented in Figure 3. The images obtained under a multiphoton microscope show us the presence of spherical elements grouped in clusters in PBS between slide and coverslip, with a scale between 0.5 and 1 μ m. After digital processing of the 3D stacks images of the area of interest by the FIGARO algorithm, we could obtain a more resolute stack visible under 3Dviewer in ImageJ. From a 3D image digitally processed by FAMOUS, it is also possible to visualize the reconstruction of the image according to different slices, allowing to observe the magnetic spheres inside the cluster of viral particles.

In summary, the acquisition of ESEM images allowed us to better understand the data acquired with a multiphoton microscope, especially in terms of the distribution of virions around the magnetic spheres and the quantity of potential clusters present at the end of the preparation. The presence of darker areas on the surface of the viral particles in the ESEM images may be the result of the pressure inside the microscope chamber, causing the virion envelope to burst. Although the resolution is better with this technique, we can only observe the surface of the clusters while multiphoton microscopy allows us to observe the sample in all its depth. Observation of viral particles, although they are very small, is therefore possible under a multiphoton microscope. However, it is thanks to deconvolution that we can have such a 3D rendering. We must keep in mind that this are preliminary results, and we need to take a step back about our observations and conclusions. By improving the efficiency of the image processing software, in the future, the acquisition of such images, will provide concrete support for medical biology on the possibilities of observing cells undergoing infection without labeling. Such images are also an asset for the social sciences in explaining and preventing the COVID-19 Coronavirus.

The results of the current research offer interesting perspectives: the observation of the endogenous fluorescence of viruses in a cell during infection appears particularly interesting for understanding the precise infection strategy. Additionally, these findings are relevant to different research disciplines such as medical biology, image processing, artificial intelligence and also social sciences.

3. COVID-19: SOCIAL CONSTRUCTION OF A VIRUS

3.1. Importance to Investigate Social Representations of the Virus

The invisible SARS-CoV-2 virus that is at the origin of the COVID-19 pandemic has shattered various aspects of people's lives and societies worldwide. Therefore, the invisible SARS-CoV-2 virus of 120 nm in diameter represents one of the major current large-scale societal threats. Such a major collective upheaval causes the rupture of continuity between individual's common perception of reality and new circumstances brought by this pandemic. Therefore, the collapse of representations elicited by the unpredictable and uncertain large-scale societal threat requires the reconstruction of meaning of the situation that allows people to cope with these extraordinary circumstances (de Jong, Ziegler, & Schippers, 2020; Pelletier & Drozda-Senkowska, 2019a). Indeed, as other large-scale societal threats, there are numerous discrepancies between the real threat that represents the biological contamination by SARS-CoV-2 virus and the perceived threat that is based on people's social representations of the virus. Thus, social sciences have a primordial role in investigating social representations of SARS-CoV-2 virus and related consequences of the COVID-19 Coronavirus pandemic on the population.

Indeed, human beings' cognitions, emotions and behaviors are driven primarily by subjective comprehension of the pandemic reality. Therefore, social sciences that emerged in the 17th century during the Age of Enlightenment in Europe have as a primary aim the rational study of various social relationships that underpin our societies. Social sciences that encompass a range of disciplines such as sociology, anthropology, history, economy, social psychology, human geography, management and political sciences focus specifically on the investigation of complex societal issues within given context by multiple methodologies (Backhouse & Fontaine, 2010). Indeed, the perception of the biological COVID-19 threat is irrevocably anchored in a historical and social context. Consequently, individuals' perception of the large-scale societal threat is the result of complex social construction processes encompassing various projections,

imaginings, and situations experienced at the individual and collective levels (Jodelet, 2017). Further, the perception of the biological threat elicited by an invisible virus is distorted by mass media, political and institutional communications that tend to amplify or attenuate the characteristics and consequences of this real biological threat (Kasperson, Kasperson, Pidgeon, & Slovic, 2010; Pelletier & Drozda-Senkowska, 2019b).

3.2. Social Representations Theory: The Construction of Common Reality

Social sciences offer a unique opportunity for conceptual and methodological bridge-building that allow to seize the complexity of extreme societal issues related to the current COVID-19 pandemic reality (Pelletier, 2021). The fundamental work of the sociologist Emile Durkheim (1895/1988) mentions the concept of “*collective representations*” which are collective mental products that allow individuals to construct a representation of an abstract object. This central idea brought in the field of social psychology by the theory of social representations (Moscovici, 1961/1976) postulates that “*social representations*” are aggregations of individual’s beliefs and values which are collectively shared and tend to primarily emerge during daily interpersonal conversations. Social representations are a kind of “theories” that express a common knowledge about a social object with words that are loaded with affects and meanings. Thus, social representations are a form of knowledge which is socially created and shared with others and enable the population to construct a vision of a common reality (Jodelet, 1989/2007, p. 53). In addition, social representations also have a practical aim because as a system for interpreting reality, social representations allow individuals to organize and direct behaviors and interpersonal communication.

Further, it is important to emphasize that the theory of social representations is deeply rooted in the logic of symbolic interactionism that postulates that social interaction processes have a preponderant role in the construction of reality (Mead, 1934/2015). Thus, language tends to be seen as a central tool for the social construction of reality that allows individuals to share a common meaning of abstract objects and situations (Berger & Luckmann, 1966). The social representations that are transmitted and shared through interpersonal communication carry specific cognitive and affective

elements that allow the appropriation and internalization of reality. In addition, interpersonal communication allows the dissemination and transformation of social representations. Therefore, the interpersonal communication is a main process that underlies the construction of common COVID-19 pandemic reality.

The COVID-19 pandemic, as any other new and extraordinary situation, obliges people to reconsider their ideas and their usual way of thinking in order to adapt to the new situation which is becoming a part of the 21st century history. According to the "ternary" psychosocial reading proposed by Moscovici (1984), our interpretation of facts and relations, such as the unprecedented COVID-19 pandemic, are the result of complex social construction processes, represented in Figure 4. These social construction processes are the sum of the interaction between “**Ego**” which refers to an individual, a social group, an institution or a mass media and “**Alter**” which represents another individual, another social group, another institution or another mass media. According to the theory of social representations (Moscovici, 1961/1976), two different human thinking processes operate simultaneously allowing individuals to construct and to appropriate the representation of an abstract or new object, such as the COVID-19 Coronavirus pandemic.

These two human thinking processes are the anchoring process and the process of objectification that tend to emerge in language and interpersonal communication. Specifically, anchoring process refers to human thinking by analogy which enables individuals to understand the event, assimilate it into their pre-existing thinking system and related beliefs and values. Therefore, the anchoring process necessarily relies on individual and collective memories of a similar object or a situation. Further, the process of objectification allows selecting new information, wherein solely the information consistent with individual’s previous beliefs is retained and transmitted to others. In addition, the process of objectification tends to transform an abstract or unknown object into a more familiar and tangible purpose. Additionally, that is through the processes of anchoring and objectification that common ideological consensus is constructed about an object or a situation. Therefore, the individuals’ common social representation

is driven by a subjective logic that is the result of complex individual and collective social construction processes.

The COVID-19 pandemic is elicited by unseen biological contaminations through SARS-CoV-2 virus that people tend to anchor in their daily lives by various projections, representations and imaginations. Thus, the unprecedented COVID-19 pandemic situation requires that people construct social representations of the “invisible” SARS-CoV-2 virus, related modes of transmission, and the overall consequences of the COVID-19 breakdown, including the attribution of responsibility for this global pandemic (Apostolidis, Santos, & Kalampalikis, 2020).

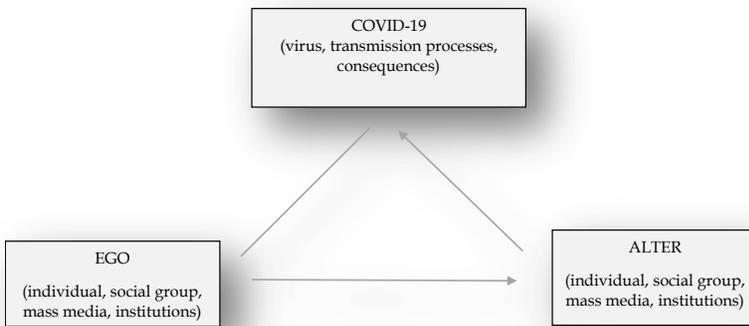


Figure 4. The “ternary” psychosocial reading that underpins the construction of the social representation of COVID-19 pandemic (adapted from Moscovici, 1984).

3.3. Social Constructionist Pathways of SARS-CoV-2 Virus

The SARS-CoV-2 virus causing the Coronavirus COVID-19 disease remains unseen to people, therefore this “invisible enemy” requires a proper investigation within given context. The data from this research were collected by an anonymous and strictly confidential questionnaire administered online during the COVID-19 pandemic breakdown on a representative sample of inhabitants of the Nouvelle-Aquitaine region in France. The sample of participants ($N = 928$), aged from 18 to 84 years ($M = 45.41$, $SD = 3.99$). The sample was composed of 52.60% females and 47.40% males. Further, 60.80% of participants declared that their family members or friends have been infected by the COVID-19 Coronavirus disease.

Participants have apprehended the COVID-19 sanitary containment during the pandemic lockdown in France as a sanitation policy that protects them against the COVID-19 Coronavirus “disease” (*maladie*) that represents a “danger” (*danger*) of “death” (*mort*). The containment (*confinement*) and other related COVID-19 sanitation policies, such as « masques » (*masques*), “hydroalcoholic gel” (*gel hydroalcoolique*), “barrier gestures” (*gestes barrières*) or “vaccination” (*vaccination*) that protects “fragile populations” (*population fragile*). Although, the COVID-19 sanitation policies tend to elicit negative issues such as “loneliness” (*solitude*), “tiredness” (*fatigue*), “sadness” (*tristesse*), “depression” (*depression*) and “isolation” (*isolement*) that impede usual “social life” (*vie sociale*), represented below in the middle green cluster.

Participants expressed their “worries” (*inquiétude*) and willingness to “protect” (*protéger*) their family members, such as “children” (*enfants*), “parents” (*parents*) and “grandparents” (*grand-parents*), represented in the pink cluster. Further, participants expressed their ambivalence related to the fact that might be simultaneously a vector of the virus and that they might “transmit” (*transmettre*) and “contaminate” (*contaminer*) their loved ones (e.g., “parents” and “grandchildren”), but also “catch the virus” (*attraper le virus*). The awareness of the transmissibility of the virus elicits aversive feelings and emotions, such as “fear” (*peur*), “stress” (*stress*), “anxiety” (*anxiété*) and “uncertainty” (*incertitude*), represented in the brown cluster.

Furthermore, the participants represent the “virus” (*virus*) in the dark green cluster, as “dangerous” (*dangeroux*) and “worldwide” (*mondiale*) “killing” (*tuer*) virus that is at the origin of the “pandemic” (*pandémie*) of “global magnitude” (*ampleur mondiale*). The “new” (*nouveau*) virus that can be transmitted by a “touch” (*toucher*) such as a “flu” (*grippe*) causes important “sequels” (*séquelles*) and impediments with regard to “see our loved ones” (*retrouver les gens qu’on aime*) and usual daily activities, such as “work” (*travail*) and “university courses” (*vie scolaire*). The representation of the virus is underpinned by “mass media” (*média*) that convey “information” (*information*) to make people to “feel concerned” (*sentir concerné*) about the “sanitation campaign” (*campagne*), represented in the blue cluster; and by political communication elicited by the “government” (*gouvernement*) that

“makes decisions” (*prendre décisions*) about “sanitation policies” (*mesures sanitaires*), represented in the purple cluster.

These results have been confirmed and refined by the multivariate technique of factorial correspondence analyses represented in Figure 6. The results demonstrated three main discourse categories based on the corpus of text dataset. Thus, participants’ representations of the invisible virus refer mainly to (Class 1) the worldwide spreading and dangerous virus that elicits aversive reactions and fear (46.24%), *virus*, $\chi^2 (88, N = 84) = 92.61, p < .001$; (Class 2) the consequences of sanitary containment and policies during the COVID-19 pandemic lockdown and related difficulties experienced primarily due to the social isolation (32.23%), *containment*, $\chi^2 (140, N = 88) = 73.75, p < .001$; and (Class 3) the fear of death that elicits the feeling of anxiety and other aversive reactions, including stress, sadness and anger (21.53%), *death*, $\chi^2 (46, N = 36) = 93.28, p < .001$.

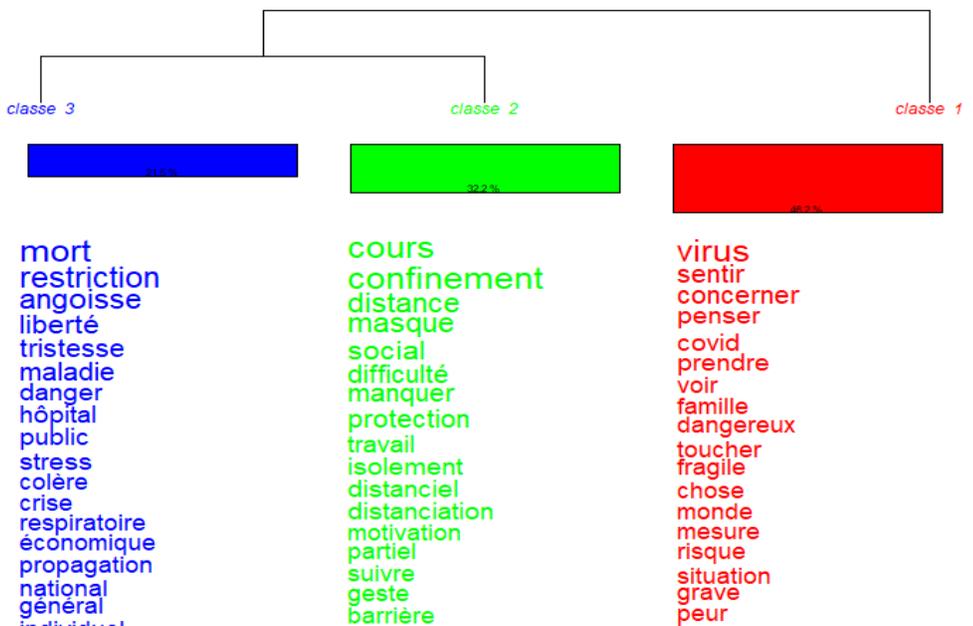


Figure 6. Graph of multivariate technique of factorial correspondence analyses for the three main discourse categories.

These results demonstrate the importance of people's narratives in the construction of social representations of the invisible SARS-CoV-2 virus. The "war metaphor" largely conveyed by the mass media and political communications testifies the universal human reflex to narrate, to tell stories, in an attempt to understand and to construct meaning of the unprecedented COVID-19 pandemic (McLaughlin, Pelletier, & Boespflug, 2022). Moreover, people's narratives place the virus in the role of an enemy to demolish and the COVID-19 narratives tend to divide civilians into distinct armies: those who are on the front line to act, those who must stay at home to protect themselves and others, those who are the most important "vectors" of the virus, and those who are the first victims of COVID-19 Coronavirus disease.

4. CONCLUSION

The current research offers a thorough multidisciplinary investigation of the invisible enemy that represents SARS-CoV-2 virus, based on innovative collaboration between hard and soft sciences. Specifically, the biological image of SARS-CoV-2 virus has been investigated by methods from the field of physics, computational sciences and nanometric solutions of microscopy. Further, the socially constructed representation of SARS-CoV-2 virus has been investigated by the social representations approach and completed with semiotic analyses. Therefore, the current research that offers a multidisciplinary overview of different images of the invisible and intangible SARS-CoV-2 virus aims to construct relevant knowledge that irrevocably contributes to an improved multi-level crisis management effectiveness of current and future pandemic breakdowns.

In particular, the current research highlights discrepancies between the biological image and the socially constructed image of SARS-CoV-2 virus. The gap between the biological microscopy image of SARS-CoV-2 virus and the complex socially constructed image is therefore significant. These main results indicate a difficulty in apprehending the biological

microscopy image within the population that attempts to appropriate the unseen and unknown virus rather by socially constructed representations elicited primarily by mass media and his or her own living experience. Indeed, the current research demonstrates the primary influence of mass media and political communications that underpin the construction of social representations of SARS-CoV-2 virus. Therefore, an efficient crisis communication, that contributes to the overall crisis management effectiveness, should focus also on the diffusion of the biological microscopy image of SARS-CoV-2 virus in order to limit various fake news and conspiracy theories related to the possible non-existence or misrepresentations of SARS-CoV-2 virus and related COVID-19 Coronavirus disease.

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CHAPTER 2

**COVID-19 TRANSMISSION AND SOCIAL DISTANCING
POLICIES IN THE EAST AFRICAN COMMUNITY: A PANEL
DATA ANALYSIS**

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Abstract

Several interventions and policies have been adopted by countries to reduce the spread of COVID-19. Apart from Tanzania, countries in the East African Community followed the developed world to implement measures particularly those that restricted social gatherings and meetings. Despite numerous literature on developed countries, there is a dearth of studies generally on developing countries and East African Community in particular that examine the effectiveness of the policies in reducing COVID-19 infection rates in the highly integrated East African economic block. Therefore, this study uses panel data methodologies to examine the relationship between the Non-Pharmaceutical Interventions (NPIs): school closures; internal movement restrictions; public transport closures; workplace closure among others and the transmission of COVID-19. The fixed effects results show a negative relationship between Workplace closures; Closure of Public Transport; International Travel Controls; School Closures; Cancel Public Events and COVID-19 transmission. More profoundly, the effectiveness increases as more restrictive measures of these policies are instituted. Therefore, the study recommends that efforts to reduce infections and cases need to consider these measures. However, the policies can be varied given their impact on the economy. Where possible, less restrictive but effective categories can be adopted.

Key Words: COVID-19, Social Distancing Policies, East African Community, Panel Data, Non-Pharmaceutical Interventions (NPIs),

JEL Classification: C22, C58, F31

1. INTRODUCTION

COVID-19 has profoundly affected the social, health and economic livelihoods in developed and developing countries. As of August 16th 2021, the East African countries registered a total of 420,000 COVID-19 cases and 8370 deaths. These countries have implemented several policies to curtail the rise of the virus so as to flatten the curve of the disease transmission announced as a pandemic in March, 2020 (WHO, 2020a). Importantly, this was critical in the early phase since the performance and safety of the appropriate medicines was still unclear. Above all, there was no approved vaccine to prevent COVID-19 (WHO, 2020).

Non-Pharmaceutical Interventions in form of social distancing policies have played an important role as a strategy (Akiyama, et. al., 2020), main policy measure (Chowdhury et al., 2020) and as an approach (Hick & Biddinger, 2020) used to control the spread of the virus especially in communities with large social interactions and gatherings (Ahmed et al., 2018; Mal et al., 2020; & Kar et al., 2020). Notwithstanding the above definitions, these policies entailed closure of selected or all levels of education or institutions; public transport closures; internal movement restrictions; instituting stay at home requirements, and public events cancellations. The East African Countries³ (EAC) have implemented these policies. On the other hand, Tanzania decided to remain opened and therefore the government never implemented a nationwide lockdown.

Due to socio-economic and boarder peculiarities of Sub Sahara African (SSA) countries, the social distancing policies that have been adopted by several countries may have limited effectiveness in Sub-Sahara African countries (Amaechi et al., 2020). However, the debate on the effectiveness of the NPIs is still unclear (Regmi & Lwin, 2020). In the literature, some studies reveal that NPIs can lead to decline in the virus infections and cases (Gonzalez and Niepelt., 2020; Chernozhukov et al.,2020; Askitas et al.,2020; Chen and Qiu., 2020). However, the impact depends on the degree of limitations of the policies as regards to social gatherings and differences between countries (Jinjarak et al., 2020). In California cases reduced due to the implementation of NPIs (Friedson et al., 2020). In addition, the infection

³ The five East African countries include: Kenya, Uganda, Tanzania, Rwanda, Burundi, and South Sudan.

rate reduced from 2.35 a week before implementation to 1.05 seven days after implementation of travel restrictions. Similar results were found in Chinese cities for example in Wuhan after implementing a lockdown (Fang et al., 2020).

Despite the implementation of NPIs in EAC, there is at the moment no empirical study that has investigated whether the social distancing policies have been able to reduce COVID-19 transmission. However, this region is unique as most countries (Uganda, Rwanda, Burundi and South Sudan) are landlocked. To facilitate international trade in the Community, Tanzania and Kenya mainly act as gate ways to the sea through the Dar es Salaam and Mombasa port respectively. Import of goods to Rwanda, Burundi and South Sudan pass through Uganda. In this regard, there is an increased risk of new COVID-19 cases from goods handling, and boarder movements of both passenger and cargo across the region.

Due to the existence of a new COVID-19 strain and a likely occurrence of third and fourth waves of the pandemic, knowledge about the extent of impact of the different NPIs that have been adopted over time to reduce the spread of the virus is relevant for subsequent policy making. In this regard, the contribution of this study to policy discussion and debate is of relevance to Sub-Sahara African Countries that are highly integrated within the East African economic block. Therefore, the findings are timely for evidence based policy making on particularly deciding whether these policies should be deployed, intensified or lifted. However, Le et al., (2020) argues that maintaining these policies is critical especially in developing countries with weak public health systems to manage the many cases. Thus, it is against this background that this study investigates the impact of the NPIs on COVID-19 transmission in the East African Community (EAC).

2. METHODOLOGY

2.1 Theoretical Framework

Several studies in the literature (Castex, et al., 2020; Chen and Qiu, 2020) have employed the Susceptible Infected Recovered (SIR) model to examine the impact of NPIs on COVID-19 transmission. In the same vain, we use this model to analyze the impact of Social Distancing Policies on COVID-19 Transmission in the East African Community as shown in equations 2.1:

$$\begin{aligned} \frac{\partial X_d}{\partial t} &= -\frac{\theta_j(t)X_d(t)}{N_d}Y_d(t) \\ \frac{\partial Y_d}{\partial t} &= -\frac{\theta_d(t)X_d(t)}{N_d}I_d(t) - \gamma_d(t)Y_d(t) \dots\dots\dots 2.1 \end{aligned}$$

$$\frac{\partial Z_d}{\partial t} = \gamma_d(t)Y_d(t)$$

The model assumptions include: firstly, categorization of the population, N_d , in country d in three groups: susceptible, $X_d(t)$, infected, $Y_d(t)$, and recovered, $Z_d(t)$. Secondly, the model assumes a constant population size; thirdly, the model assumes a short time horizon. Following from equation 2.1, $\theta_d(t)$, the model assumes each country with its own changing time parameter that indicates the transmission rate of the virus, shown by θ . $\theta_d(t)$ is responsive to behavioral changes or interventions. The likelihood of transmission is $\frac{\theta_d(t)X_d(t)}{N_d}$, and that of recovery rate is $\gamma_d(t)$. When N is large and assuming both the outbreak at the start and a classical SIR model, then $X(t)/N \approx 1$. The reproduction rate, is given as $Z_{0d} = \theta_d(t)/\gamma_d(t)$. The infections will be many if $Z_{0d} > 1$.

With the dynamic SIR model, Z_{0d} can vary with $\theta_d(t)$. The change in $\theta_d(t)$ due to implementation of NPIs can then be estimated assuming constant γ . In this case, equation 2.2 gives the country specific change in the number of infected individuals:

$$Y_d(t + 1) - Y_d(t) = \frac{\theta_d(t)X_d(t)}{N_d}Y(t) - \gamma_d(t)Y_d(t) \dots\dots\dots 2.2$$

And then, $\theta_j(t)$, becomes,

$$\theta_d(t) = \frac{Y_d(t+1) - Y_d(t)}{Y_d(t)} \frac{N_d}{X_d(t)} + \gamma_d(t) \frac{N_d}{X_d(t)} \dots\dots\dots 2.3$$

From equation 2.3, we assume a constant recovery rate, $\gamma_d(t)$ across time and countries (Atkeson, 2020), and in which case we consider $\gamma = 1/18$. Equation 2.4 presents the impact of p social distancing policies (NPI) in country d ,

$$\theta_d(t) = \exp(\alpha_d + \sum_{p=1}^P \delta_{dk} NPI_{dtp}) \dots\dots\dots 2.4$$

Where the country fixed effect is given by α_d and:

$$NPI_{d,t,p} = \begin{cases} 1 & \text{if } t < t_p^* \\ \exp\left(-\frac{(t-t_p^*)}{\tau}\right) & \text{if } t \geq t_p^* \end{cases} \dots\dots\dots 2.5$$

The time when the social distancing policies (NPI_p) was endorsed is t_k^* . The incubation period⁴ of COVID-19 is assumed $\tau = 8$, and this controls for the time-lag effect in the polices, δ_{dp} summarizes the difference in the NPIs across the five countries - Kenya, Burundi, Rwanda, South Sudan, and Uganda.

2.2 Empirical Framework

The study employs an approach that considers differences in characteristics in specific countries within the EAC. Therefore, the study uses panel data regression methodologies to examine the relationship between NPIs and θ_{jt} . The empirical specification is shown in equation (2.6),

$$\log \theta_{jt} = \alpha_{0j} + \sum_{k=1}^K \alpha_{1k} NPI_{jtk} + \mathcal{E}_{jt} \dots\dots\dots 2.6$$

A panel data model where $\log \theta_{jt}$ is the country j transmission rate of the virus at time t ; α_{0j} is a intercept for country j that is constant in the period of analysis; NPI_{jtk} are the NPIs and α_{1k} are the coefficients of the corresponding NPI; and the error term is \mathcal{E}_{jt} . To decide between fixed or random effects model, we used the Hausman test where the null hypothesis is

⁴For example, Lauer et al. (2020) and Linton et al. (2020) that find that incubation period of COVID-19 is 5.2 days on average; Li at al. (2020) reports 4.1 to 7.0 days; and Wu et al. (2020a) find this period to be 6.1 days. Combining the length of the incubation period with feeling symptoms, being tested and results reported, we set the time-lag effect of interventions at 8 days.

that the preferred model is random effects vs the alternative the fixed effects (Hausman, 1978).

2.3 Variables and Data Sources

2.3.1 Variables

The dependent variable is the total number of COVID-19 cases collected for each county. This variable is further transformed into natural log (LnCOVID-19). The explanatory variables include a selected set of NPIs: School Closures (SC); Work place Closures (WC); Public Transport Closures (CPT); Movement Restrictions (MR); International Travel Restrictions (ITR); Public Events Cancellations (CPE); Stay-at Home Restrictions (SHR); Restrictions of Public Gathering (RG). The NPIs are categorical variables taking different values as described in table 6.1 in the appendix. From Table 6.1 in the appendix, it can be noted that policies follow sequentially and all are implemented after 5 days, on average.

2.3.2 Data

Oxford COVID-19 Government Response Tracker (OxCGRT) is the source of the data for all variables. The data on COVID-19 cases is reported daily for 201 countries. 139 countries out of the 201 countries have enacted at least one NPI. Table 6.1 in the appendix summarizes the variables and their average start dates. The estimation period for the study is between 14th March 2020 and 16th August 2021.

3. ESTIMATION RESULTS

3.1 Descriptive Statistics

In Table 3.1, we present the descriptive statistics for the dependent variable, LnCOVID-19 cases. On the other hand, percentage distributions by country and overall East Africa are provided for the NPIs. These include; international travel restrictions, workplace closures, internal movement restrictions, restrictions of public gatherings, stay-at-home, public events cancellations, school closures, and lastly public transport closures. Over the estimation period, there are 2,548 observations (days with at least 3 COVID-19 Cases). The mean is 8.445 cases and standard deviation of 2.397. For the categorical variables like School closures, 72.74 percent of the estimation

days in Burundi have been covered without school closures. On the other hand, all levels of education institutions in Uganda have been closed for about 48.37 percent of the estimation days followed by Rwanda at 47.22 percent and Kenya at 39.16 percent. Overall, the education institutions have been closed for 34.63 percent of the estimation days.

For workplace closures, Uganda for 89.83 percent of the estimation days, workplaces were closed or some sectors or categories of workers worked from home. Rwanda followed with 83.69 percent of the days and South Sudan with 42.42 percent. On the other hand, Burundi has had no workplace closures for 64.68 percent of the days. Overall, the East African countries closed the workplaces or some workers from non-essential categories of sectors of the economy worked at home for 55.89 percent of the days. For public transport, table 3.1 shows that no public transport closures within the estimation days for Burundi. On the other hand, Kenya closed public transport for 85.22 percent of the days. Overall, the East African countries had 45.49 percent of the days with no public transport closures.

Unlike Burundi, the other countries implemented internal movement restrictions with Kenya and Rwanda restricting movement for 58.54 percent and 58.57 percent of the days respectively. South Sudan restricted movement for 23.42 percent of the days. Regarding international travel controls, East African countries have majorly implemented screening controls at 24.76 percent of the days compared to quarantine arrivals at 39.92 percent and total border closure at 17.54 percent of the days. With exception of Burundi, the other countries cancelled organization of public events for more than 50 percent of the days. With Stay-at-home Restrictions, Rwanda and Uganda have for 89.83 percent and 88.1 percent of the days respectively people were not leaving homes only with exceptions. On the other hand, the East African countries have for 60.73 percent of the days implemented the Stay-at-home Restrictions.

Table 3.1: Descriptive Statistics for the dependent and Independent variables

Variable	Obs	Mean	SD	Min	Max	
Dependent Variable						
COVID-19 Cases	2548	8.445	2.397	1.099	12.308	
	Countries					Region
Independent Variables	Burundi	Kenya	Rwanda	South Sudan	Uganda	East Africa
School Closures (SC)						
No Closures	72.74	0.19	4.22	15.93	7.29	20.08
Recommend closing	27.26	17.27	37.62	10.36		18.5
Require selected closing		43.38	10.94	35.32	44.34	26.79
Require closing all levels		39.16	47.22	38.39	48.37	34.63
Workplace closures (WC)						
No Closures	64.68	0.19	2.5	42.61	2.11	22.42
Recommend closing or work from home	9.6	62	1.34	7.1		16.01
Close workplaces or workers from some sectors or categories of workers work from home	25.72	37.81	83.69	42.42	89.83	55.89
Require closing or work from home for all sector but essential workplaces			12.48	7.87	8.06	5.68
Public transport closures (CPT)						
No Closures	100	10.75	34.36	47.6	34.74	45.49
Recommend closing		85.22	45.87	32.44	26.49	38
Require closing		4.03	19.77	19.96	38.77	16.51
Movement restrictions (MR)						
No Restrictions	100	21.11	27.55	35.12	38	44.56
Recommend movement restriction		20.35	13.88	41.46	12.48	17.68
Restrict movement		58.54	58.57	23.42	49.52	37.76
International travel restrictions (ITR)						
No measures	7.29					1.46
Screening	25.72	31.09	13.44	10.75	42.8	24.76
Quarantine arrivals	40.88	31.29	55.09	55.66	16.7	39.92
Ban on high-risk regions	23.61	11.32		10.94	35.7	16.31
Total border closure	2.5	26.3	31.48	22.65	4.8	17.54
Public events cancellations (CPE)						
No Cancellations	100			15.16	14.59	25.95

Recommend cancelling			15.93	16.31	31.86	12.82
Require cancelling		100	84.07	68.52	53.55	61.23
Stay-at-home Restrictions (SHR)						
No Restrictions	100	2.5	2.5	31.48	3.07	27.91
Recommend stay at home		9.4	4.99	15.93	8.83	7.83
Require stay at home with exceptions		73.13	89.83	52.59	88.1	60.73
Require stay at home with minimal exceptions		14.97	2.69			3.53
Restrictions of public gatherings (RG)						
No restrictions	98.46			0.38	9.02	21.57
Limit on very large gatherings for people > 1000			4.03			0.81
Limit gatherings for people between 100-1000		15.74	9.79	4.03	39.73	13.86
Limit on gatherings for people between 10-100	1.54	52.02	64.49	72.94	8.25	39.85
Limit on gatherings of people less than 10		32.25	21.69	22.65	42.99	23.92

Source: Author's Computation

3.2 Pairwise Correlation Matrix

To understand the direction of association between variables, Table 3.2 presents the pairwise correlation matrix. This is a basis for confirming collinearity among the independent variables. As shown in the table 3.2, majority of the variables are positively related. In particular, the negative relationship is amongst COVID-19 cases and NPIs: international travel controls and school closures. This therefore means that the implementation of these two NPIs resulted in a reduction in the COVID-19 transmission rate. Furthermore, the correlation coefficients are below the 0.80 threshold of detecting the absence of collinearity problems except that between limiting of gatherings and public events cancellations that is slightly above the threshold. Nevertheless, these can be included in the model without worrying of collinearity problems and the results are presented in table 3.3.

Table 3.2: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	1.000								
Intotal_cases									
(2) SC	-0.044*	1.000							
(3) WC	0.102*	0.510*	1.000						
(4) CPT	0.105*	0.523*	0.541*	1.000					
(5) MR	0.031	0.631*	0.475*	0.489*	1.000				
(6) ITC	-0.469*	0.396*	0.209*	0.228*	0.377*	1.000			
(7) CPE	0.187*	0.757*	0.503*	0.584*	0.688*	0.250*	1.000		
(8) SHR	0.354*	0.639*	0.653*	0.547*	0.595*	0.242*	0.758*	1.000	
(9) RG	0.244*	0.677*	0.459*	0.495*	0.590*	0.206*	0.809*	0.691*	1.000

Note: * shows significance at the .05 level

Table 3.3 shows the results of the fixed effects model while the random effects model results are reported in table 6.2 in the appendix. The Hausman test statistic (see table 6.2) suggests the preferred model is the fixed effects model.

Table 3.3: Estimated NPI impact on COVID-19 transmission rate, Fixed effects Model

Ln Total COVID-19 Cases	Coef	St.Err.	[95% Conf	Interval]
School Closures				
Recommend closing	0.903***	0.103	0.701	1.105
Require closing	0.328***	0.114	0.105	0.551
Require closing all levels	-1.437***	0.125	-1.682	-1.192
Workplace closures				
Recommend closing	0.839***	0.116	0.611	1.068
Require closing	1.423***	0.096	1.235	1.611
Require closing but essential workplaces	-1.306***	0.153	-1.606	-1.006
Close Public Transport				
Recommend closing	0.151*	0.084	-0.014	0.315

Require closing	1.058***	0.086	0.889	1.227
Internal Movement Restriction				
Recommend movement restriction	0.834***	0.091	0.657	1.012
Restrict movement	1.163***	0.087	0.993	1.333
International Travel Controls				
Screening	-0.115	0.256	-0.617	0.387
Quarantine arrivals	-1.168***	0.261	-1.679	-0.657
Ban on high-risk regions	-2.175***	0.260	-2.685	-1.664
Total border closure	-2.684***	0.273	-3.221	-2.148
Cancel Public Events				
Recommend cancelling	-2.770***	0.147	-3.059	-2.481
Require cancelling	-3.707***	0.164	-4.028	-3.385
Stay Home Requirements				
Recommend stay at home	1.257***	0.161	0.942	1.573
Require stay at home with exceptions	1.555***	0.150	1.261	1.849
Require stay at home with minimal exceptions	0.461**	0.198	0.073	0.848
Restriction Gatherings				
Limit on very large gatherings for people > 1000	-0.237***	0.305	-0.836	0.362
Limit gatherings for people between 100-1000	0.849***	0.205	0.448	1.251
Limit on gatherings for people between 10-100	1.691***	0.202	1.294	2.088
Limit on gatherings of people less than 10	0.646***	0.194	0.266	1.027
Constant	8.900***	0.296	8.319	9.482

Mean dependent var	8.412	SD dependent var	2.39
R-squared	0.742	Number of Obs	3
F-test	311.822	Prob > F	0.00

Note: Coefficients are presented and their corresponding standard errors. *represents 10% level of significance, **represents 5% level of significance, and ***represents 1% level of significance.

F-test under fixed effects model shows that there are statistically significant individual effects. Thus, pooled OLS regression is not appropriate. Therefore, the results from the fixed effects model indicate that as more

restrictive measures are instituted, there is a negative significant relationship with most of the NPIs: School Closures; Workplace closures; Close Public Transport; International Travel Controls; Cancel Public Events and COVID-19 transmission. In particular, requiring closing all levels of education institutions reduces COVID-19 transmission by 1.4 percent compared to not closing schools. The results further reveal that recommending closing and requiring closing of selected education institutions compared to the reference of not closing schools increases the risk of COVID-19 transmission with 0.9 and 0.3 percent respectively. In this regard it is evident from the results that closing all schools is the most effective policy measure to reducing the COVID-19 transmission. However, this result is contrary to findings from some developed countries. In particular, Iwata, et al., (2020) find the intervention of closing schools ineffective in reducing COVID-19 infections in Japan. Nevertheless, the study by Dong et al., (2020) finds negative effect of closing schools with the influenza epidemic. However, the impact happens when the policy is applied simultaneously with other measures.

Furthermore, the results show negative relationship when workers work from home except for those from essential workplaces. This policy option reduces infection rate by 1.3 percent compared with the policy of not closing workplaces, recommending closing or work from home and lastly closing workplaces for some categories of workers. Chung & Chan (2021) find similar results while, WHO (2021) reveals leaving some workplaces open is actually a hindrance to fight against increase in COVID-19 cases. This can be so especially when workplaces with limited space to promote social distancing, limited ventilation, limited spaces for eating areas are open.

Concerning international travel controls; total border closures are effective in reducing COVID-19 infections compared to Screening with 0.12 percent; Quarantine arrivals with 1.17 percent; ban on high-risk regions with 2.18 and the reference of no closure. Burns et al., (2021) shows that travel restrictions have been beneficial in reducing infections.

There is a positive effect of closing public transport, enacting restrictions on internal movements, and implementing stay at home restrictions on COVID-19 transmission. The impact is however pronounced even when more restrictive measures are implemented. In particular, closing of public transport increases the transmission of COVID-19 by 1.06 percent.

However, recommending closing of public transport is only effective at 10 percent level of significance. The positive impact of public transport closure can be explained by the connectedness of the East African countries that even facilitated public movement within communities and across borders even after the closure of public transport. In light of this, the same results are not surprising for both Internal Movement Restriction and Stay Home Requirements. The results show that even with the stay at home unless when need arises to go shopping or daily exercise, there is higher impact than the rest of the policy options with 1.56 percent increase in transmission. Similarly, the restriction of movement as well increases transmission by 1.16 percent compared with no restriction and recommendation to restrict movement at 0.83 percent. On the other hand, Chung & Chan (2021) find Internal Movement Restriction and Stay Home Requirements effective in reducing COVID-19 transmission.

4.CONCLUSION

Even as the cases and deaths COVID-19 continue to upsurge within the East African Countries, some countries like Uganda have implemented a second lockdown in order to delay the occurrence of the subsequent waves of COVID-19. In this regard, we investigate the impact of different NPIs on reducing COVID-19 transmission within the 5 East African Countries based on the dynamic SIR model. The results from the fixed effects model indicate that School Closures; Workplace closures; Close Public Transport; International Travel Controls; Cancel Public Events and COVID-19 transmission are negatively related as more restrictive measures are instituted. In particular, the policies are categorically more effective when more restrictive measures are implemented. Therefore, the East African countries need to implemented these policies to reduce the spread of COVID-19. However, without exception of no implementation policy, the implementation of these policies can be varied given the economy wide impact of the policies. Where possible, less restrictive but effective categories of the policy can be adopted.

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6. Appendix

Table 6.1: Timing of NPIs in the East African Countries

S/N	Social Distancing/Lockdown Policies	Average starting date
1	School closures	14 th March 2020
2	International travel restrictions	
3	Workplace closures	24 th March 2020
4	“Stay-at-home”	26 th March 2020
5	Restrictions of public gatherings	17 th March 2020
6	Public transport closures	23 rd March 2020
7	Public events cancellations	14 th March 2020
10	Movement restrictions	25 th March 2020

Source: Oxford COVID-19 Government Response Tracker (OxCGRT) data.

Table 6.2: Estimated NPI impact on COVID-19 transmission rate, Random Effects Model

Intotal_cases	Coef.	St.Err.	[95% Conf	Interval]
School Closures				
Recommend closing	0.811***	0.114	0.587	1.035
Require closing	0.499***	0.122	0.259	0.739
Require closing all levels	-1.339***	0.129	-1.592	-1.086
Workplace closures				
Recommend closing	1.741***	0.118	1.510	1.971
Require closing	1.118***	0.102	0.918	1.319
Require closing but essential workplaces	-1.869***	0.162	-2.187	-1.552
Close Public Transport				
Recommend closing	0.910***	0.084	0.745	1.074
Require closing	1.079***	0.094	0.894	1.264
Internal Movement Restriction				
Recommend movement restriction	1.033***	0.092	0.853	1.214
Restrict movement	1.491***	0.095	1.305	1.676
International Travel Controls				
Screening	1.080***	0.279	0.533	1.628

Quarantine arrivals	-0.230	0.287	-0.792	0.333
Ban on high-risk regions	-1.077***	0.285	-1.637	-0.518
Total border closure	-1.415***	0.297	-1.997	-0.833
Cancel Public Events				
Recommend cancelling	-2.877***	0.161	-3.192	-2.562
Require cancelling	-3.686***	0.170	-4.018	-3.353
Stay Home Requirements				
Recommend not leaving house	1.422***	0.168	1.092	1.751
Require not leaving house with exceptions	1.874***	0.153	1.574	2.175
Require not leaving house with minimal exceptions	1.710***	0.210	1.299	2.121
Restriction Gatherings				
Restrictions on very large gatherings (the limit is above 1000 people)	0.813***	0.297	0.232	1.395
Restrictions on gatherings between 100-1000 people	2.415***	0.147	2.126	2.704
Restrictions on gatherings between 10-100 people	3.124***	0.128	2.874	3.375
Restrictions on gatherings of less than 10 people	1.954***	0.142	1.676	2.232
Constant	5.989***	0.281	5.437	6.540

Mean dependent var	8.412	SD dependent var	2.393
Overall r-squared	0.763	Number of obs	2517.000
Chi-square	8009.484	Prob > chi2	0.000
R-squared within	0.700	R-squared between	0.970

*** $p < .01$, ** $p < .05$, * $p < .1$

Hausman test statistics: 494.49 (Prob>chi2 = 0.0000)

CHAPTER 3

A STUDY ON THE SAMPLES OF PUBLIC SPOTS “WE OVERCOME COVID 19 WITH MEASURES AND VACCINE PUBLIC SPOTS (FAMOUS)” THROUGH RECEPTION ANALYSIS

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INTRODUCTION

Health is defined by the World Health Organization (WHO, 2006: 1) as “*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.*” Social and economic problems may arise due to the negative impact of health. For this reason, communication gains importance in the health system, which aims to protect the health of individuals in the society and raise awareness and health communication, comes to the fore as an important discipline. As communication is a two-sided process, it is possible to observe health communication from a much broader perspective. Within the scope of health communication, public service announcements, which have the same characteristics as announcements, are used, together with other communication applications, for purposes such as informing, raising awareness, changing attitudes or behaviors, and gaining positive health habits. Within the scope of health communication campaigns exploiting public relations, advocacy in the media and social marketing methods to support and improve health, public service announcements are especially preferred by public institutions and non-governmental organizations (Schiavo, 2007: 5). Far from being a commercial approach, public spot announcements, which aim to solve social problems and are used as a means of influence on public awareness, are broadcast with the prospect that the target audience will change their behavior in the desired direction after watching the relevant spot. With this expectation, the stages of coding and decoding the content of the message in public service announcements are important.

Having inflicted the whole world, the new type of Coronavirus (Covid-19) appeared for the first time in December 2019 in Wuhan, China. The disease has rapidly turned into a global crisis threatening the whole world as well as raising public health concerns and has been declared as a global epidemic (pandemic) by the World Health Organization (WHO, 11 March 2020). In Turkey, with the first case officially announced on March 10, 2020, the footsteps of the epidemic were felt and measures were implemented gradually to fight against the disease (AA, 13 March 2020). Infectious diseases have always been of great importance throughout human history. Many epidemic diseases such as plague, cholera, smallpox, typhus, and flu throughout history have caused the death of millions of people throughout

history. With the development of modern medical practices, it has been observed that vaccines are applied to protect people from epidemics and various viral bacteria, and it is known that its history dates back to ancient times. The word “vaccine (vaccine)”; derived from “Vaccinia virus”, which is a low-infective Poxvirus and has been used to prevent smallpox. As a result of his observations that milkmaids contracting cowpox protected them from smallpox, Benjamin Jesty vaccinated his wife and two sons with material from a lesion in the udder of a cow during an epidemic in 1774. Edward Jenner declared this observation to the world in an article he prepared based on clinical trials and named this method as vaccination (vaccination), in which the pus from cowpox lesions is inoculated into the arm of the person to be immunized (Kutlu and Altındaş, 2018: 48). In the Ministry of Health’s COVID 19 vaccine information platform (2021), it was stated that the studies for vaccine production in Turkey took place during the first Ottoman Empire, and in 1721, in a letter written by the British Ambassador's wife Lady Mary Montagu to her country stated, “something called a vaccine” was used against smallpox in Istanbul (varilation method) and that this letter is accepted as the oldest document reached regarding vaccine production.

Minister of Health, Fahrettin Koca, announced on November 25, 2021 (sozcu.com.tr) that an agreement was signed with Sinovac company for the Covid-19 Vaccine and that 10 million doses of vaccine will be provided. On 30 December 2020 (dw.com.tr), the first batch of CoronaVac vaccines was brought to Turkey by air and the vaccines were analyzed by the Turkish Medicines and Medical Devices Agency for two weeks. Subsequently, emergency use approval was given for the vaccine (dw.com.tr). The vaccination process in Turkey started on January 13, 2021 (dw.com.tr), with the Minister of Health Fahrettin Koca and the members of the Scientific Committee being vaccinated on a live broadcast to encourage citizens to be vaccinated. According to Our World in Data (Ourworldindata, 2021), which compiles worldwide vaccine statistics daily, 57 percent of the world's population states that they have at least one dose of COVID-19 vaccine. According to the instant data available on the Ministry of Health website, 56 million 755 thousand 471 first dose, 51 million 324 thousand 846 second dose, 16 million 266 thousand 937 third dose, a total of 127 million 285 thousand 128 doses of COVID-19 vaccine were administered in Turkey.

Within the scope of combating the coronavirus epidemic, the first dose of the population aged 18 and over is 91.43 percent in Turkey; while the second dose average was 82.68 percent.

It has been felt from the very first days that the pandemic, against which all the countries of the world are fighting, produced its own mistakes in a global communication order. Various views have emerged alleging that the virus that causes Covid-19 is a laboratory production, that the Covid-19 crisis is a hoax; the transmission rate is different according to the genetic characteristics of the races, the precautions to be taken, the studies on the vaccine and oppositions to the vaccine. In this sense, in the face of this great challenge, where the social and individual health can be ensured predominantly by social and individual measures, the necessity of active and effective use of the mass communication process by reliable sources has emerged. In the process of combating the global epidemic, all countries made many attempts to manage the social information process and to prevent information pollution. Among these initiatives, public service announcements aiming to change the way people behave and draw attention to social problems gained particular importance. The Turkish Ministry of Health has started to make announcements using official data on the Covid-19 outbreak since 2020. An effort was made to raise awareness in the society by publishing 52 Public Announcements under the title (Ministry of Health COVID-19 Information Platform, 2020); 8 different public service announcements under the title of 'We Are Covering the Arms (Covid-19) public spots', and 18 different public spots under the title of 'We Are Overcoming Covid 19 with Measures and Vaccines (celebrities)' (Ministry of Health SGGM, 2021). Sertap Erener, Demet Akbağ, Candan Erçetin, Cedi Osman, Şener Şen, Okan Bayülgen, Mehmet Öz, Kıvanç Tatlıtuğ, Haluk Bilginer, Ezgi Mola, İlber Ortaylı, Beyazıt Öztürk, Şerif Sezer, Hayko Cepkin, Cem Yılmaz, Engin Altan, Zeynep Bastık and Sevcan Orhan came before the camera and invited the society to be vaccinated thus endorsing the campaign carried out by the Ministry of Health to ensure that the vaccination studies initiated in the fight against Covid-19 reach wider audiences. The effect and reception of these public service announcements has emerged as an area that needs to be analyzed. Livingstone (2005: 32) emphasized the importance of reception analysis, which will be carried out by in-depth

interviews with people or by forming a focus group, in order to obtain information regarding the differentiation rate of the approaches of the audience after watching the public service announcements, how their opinions got affected by these announcements and whether their views changed after watching.

In this research, first of all, a literature review was carried out in order to better understand the concept of public service announcements as a tool for maintaining health communication. Then, an answer was sought to the question of how the public service announcements of the “We are Overcoming Covid 19 with Measures and Vaccines” (celebrities), which the Ministry of Health started to broadcast in 2021, were received by the audience. With the data obtained from 14 volunteer participants, a general assessment was made about the reading of public service announcements, and the general view on the sustainability of public health and the creation of public awareness was described, which is likely to contribute to the literature.

1. PUBLIC SERVICE ANNOUNCEMENTS IN THE CONTEXT OF HEALTH COMMUNICATION

The concept of health communication is defined as “the type of communication needed in the field of health” in the most general sense (Yüksel, 2018: 16). Health communication, which started to develop in the 1970s in the USA, is defined by the Centers for Disease Control and Prevention (CDC, 2019) as “*The use of strategies related to communication science in order to be effective and inform on the health-related decisions of individuals and society.*” Health communication, summarized as “*dissemination and interpretation of health-related messages*” by Ray (2005: 53), “*is very important in the protective understanding of public health. Persuasive health knowledge is a primary social process that regulates people's behaviors to protect their health.*” according to Kreps and Thornton (1992: 198).

It is possible to talk about different aspects of health communication in line with the classification for the forms of use of communication. These are grouped under the headings of internal communication, interpersonal communication, group or team communication, corporate communication and mass communication.

In the dimension of internal communication, there is a form of communication that motivates people and helps people to comprehend what is in their minds with their needs. In interpersonal communication, the mutual communication of all people defined as service recipient and service provider with each other is discussed. Group or team communication describes the communication styles, roles, influences and group dynamics of the people in the group. Corporate communication encompasses all communication efforts of senior corporate executives towards the employees of the institution and the target audience of the institution. As a more general framework, in the mass-social communication title, communication campaigns, public relations activities in the most general sense, and communication through the media, mass media are discussed together with social services and practices related to health. All kinds of campaigns take place at the level of mass communication aiming to change the unhealthy attitudes and behaviors of the people, develop healthier behaviors, protect, improve and develop public health, preventive medicine, raising awareness against individual and social health risks, as well as those campaigns for changing or changing the lifestyle, protecting public health and preventing diseases (Yüksel, 2018: 16-18). Within the scope of health communication campaigns that use public relations, advocacy in the media and social marketing methods to support and improve public health, public service announcements are especially preferred by public institutions and non-governmental organizations (Schiavo, 2007: 5).

In the 1920s, public service announcements first took their place in cinema, then in radio and television broadcasting in the USA. The concept used as “Public Service Announcement” (PSA) in English is defined by the American Federal Communications Commission as “any non-commercial, promoting programs, activities or services of federal or local governments or the programs, activities, services of non-profit organizations as well as all kinds of announcements and time signals, routine weather conditions and other announcements that are considered to serve the interests of the society, apart from announcements” (Encyclopedia of Television, 2013: 1849). Contrary to the classical advertising argument, public service announcements are texts with social content, which are prepared with the aim of benefiting individuals and societies, aiming to cultivate attitudes, behaviors, habits and

awareness on the target audience, and contain the element of guidance (Akova, 2017: 18).

The concept of public service announcements, in the first applications it was used in Turkey, was named as public interest announcements considering the benefit it involves. In Turkey, announcements containing public benefit content in 1927 and public spot announcements that started to be broadcast on the radio and television in 1981 referred to the harms of smoking, traffic safety, the disabled and the environment. In parallel with the increase in the number of non-governmental organizations in the 1990s, there was an increase in the examples of public service announcements. While the number of public service announcements drawing attention to traffic problems increased in the 2000s, in the 2010s, public service announcements began to be widely used as an important tool for the campaigns carried out by the official institutions of the state and the ministries they are affiliated with (Aytekin, 2016: 250-252). Public Service Announcements are defined as: *“Informative and educational films and sounds and sub-bands that are considered to be in the public interest”* within the scope of the Law on the Establishment and Broadcasting Services of Radio and Television and Supreme Council, dated 15/2/2011 and numbered 6112. The difference between public service announcements and other announcements, whose content is organized within the framework of education and information in accordance with the 5th paragraph of Article 10 of the Law No. 6112 on the Establishment and Broadcasting Services of Radio and Television, public spots are broadcast free of charge and are not regarded as announcements by RTÜK (RTÜK, 2011). In Turkey, Public service announcements with information and educational objectives that draw attention to social and individual health were broadcast (Ministry of Health, 2021) as well as city hospitals, rational use of antibiotics, the harms of smoking, COPD, diabetes, organ donation, obesity, breast milk, heart health, blood donation and Covid 19 disease, which was declared as an epidemic worldwide as of the first quarter of 2020.

Public service announcements aim to change people's behavior patterns and draw attention to social problems, not to change consumers' attitudes towards a certain service or product or to increase purchasing efficiency (Litvinov et al., 2019: 352). Therefore, what is expected from the

public service announcements can be expressed as avoiding the situation where there is a possibility of harm, drawing attention to the subject or the development of a behavior change in the direction that is completely suggested. The use of persuasive communication techniques is an important element in creating this behavioral change (Elden and Bakır, 2010: 75). Different forms of attractiveness are used in public service announcements, which are shaped by the urge to persuade the target audience. It is possible to classify these attractiveness types in terms of rational and emotional attractiveness. Rational attractiveness is based on the belief that knowledge or awareness of the problem will lead to behavior change. Emotional attraction is realized by applying variables such as fear, guilt, shame, empathy, love, pride, joy and humor (Kotler and Lee 2006: 50). In addition to informing, which is one of the important ways to attract the attention of the target audience, especially in announcements and public service announcements created for social purposes, the attraction of fear created by attracting attention through negative emotions is among the frequently preferred message structures. In an effort to create emotional empathy towards the announcements, the attraction of fear appeals to the target audience by acting from physical, social or personal fears in the process of arousing consumer interest. Advertising appeals can be adapted to all media where the announcement is published (Belch and Belch, 2003).

Public service announcements, created with the perspective of knowledge and education in the direction of behavioral transformations in modern societies, aim to inform and persuade the target audience with their content. In this sense, the effort to determine the ways in which the messages conveyed by public service announcements are viewed by individuals and societies takes its place in the national and international literature as the subject of many studies. Martiniuk et al. (2010) examined the public service announcements about epilepsy and pointed out that the announcements fulfill the basic informative function. Klimes-Dougan and Lee (2010) examined the public service announcements on the prevention of serious crimes in the degree of murder. Yaman and Göçkan (2015) conducted a survey with 400 people on the effects of public service announcements on smoking. In their study, Ti, Fast, Small, and Kerr (2017) examined the public service announcements created by the Canadian Government for the anti-drug

campaign. Akova (2017) conducted a focus group interview with 40 people and revealed the effect of Stop Smoking, Don't Quit Life public spot announcements with a reception analysis. Gencoglu et al. (2017) evaluated public service announcements as a social marketing tool and evaluated whether the spots about smoking reduce consumption and found that they had no effect.

In the study prepared by Özbük and Öz (2017), the public service announcements accessed from TRT's website between the years 2012-2016 were examined. Kutlu and Doğan (2018) analyzed and compared public service announcements on occupational health and safety published in Canada and Turkey using the method of critical discourse analysis in their study. In the study conducted by Gazi and Çakı (2018), UN public service announcements about discrimination against blacks were analyzed within the framework of semiotic analysis. In her study, Gülada (2018) evaluated the use of fear appeal in public service announcements prepared for the purpose of preventing traffic accidents. In the study published by Mazıcı and Çakı (2018), public service announcements about Adolf Hitler were selected by purposive sampling method and semiotic analysis was made within the scope of fear appeal. In their study, Ezhova and Zamozhnykh (2018) drew a conceptual framework that aimed to develop the bipolar theory of communication strategies, revealing the positive and negative propaganda techniques to be used in public spot advertising. In another study of Gazi and Çakı (2019), which deals with public service announcements, they evaluated the announcements prepared against immigration discrimination within the scope of semiotics. The public service announcements titled "*You Can Succeed*", which the Ministry of Health started to broadcast in 2019, was analyzed by Sabırcan and Öztürk (2020) with the method of reception analysis. In their study, Ersan and Afşar (2020) made a semiotic analysis on the public service announcements of the Ministry of Health regarding the Covid-19 epidemic and found that the Ministry of Health presented the encouraging preventive messages aimed at society through emotional and rational coding. In the study of Yıldırım (2020), the appealing aspects of the public service announcements regarding the use of medical masks and social distance against the new corona virus (Covid-19) disease were made with reference to the main attraction list made by Moriarty. Devenci and Cesur

(2021), asked about the reason for the role of the famous TV series characters Ateş Hekimoğlu and Ali Vefa in the public service announcements named “*Coronavirus is not stronger than the measures we will take*” prepared by the Ministry of Health, in the scope of Baudrillard’s simulation theory, and the recognition of these characters as an element of trust. Yurttaş (2021) analyzed the effectiveness of public service announcements by using the phenomenology method in his study in which he examined the public service announcements on Covid-19. When the literature is examined, it is observed that the efforts to determine the way in which the messages conveyed through public service announcements are viewed by individuals and societies and this has been the subject of many studies. However, no specific research has been found in the literature to analyze the question of how the public service announcements related to the vaccination studies initiated by the Ministry of Health in the fight against Covid-19 are received. In this sense, the research aims to contribute to the literature.

2. PURPOSE AND METHOD OF RESEARCH

In the study, it is aimed to reveal how the public service announcements used within the scope of health communication campaigns are received by the audience. For this purpose, the public service announcements of the Ministry of Health titled “*We Are Overcoming Covid 19 with Measures and Vaccines (celebrities)*” have been analyzed using reception analysis as a data collection technique. How the relevant public service announcement was received has been analyzed by in-depth interview method, limited to 14 participants selected as a sample, and using a semi-structured questionnaire. Reception analysis enables to reveal the interpretations, decodings, meaning productions, perceptions or understandings of the audience about the media messages. Thus, social and individual factors related to reception can be determined. In uptake analysis studies, the effect of three formations is observed. The birth of reception analysis studies in mass communication studies is based on the British Cultural Studies tradition. Stuart Hall (1974), an important representative of British Cultural Studies, argues in his article “Coding and Decoding in Television Discourse” that the dominant ideology is accepted as the preferred reading in media texts, but this is not accepted without question by the readers. According to reception analysis, the

interpretation of each message by readers or viewers is different from each other. In other words, there is no single way of reading. Secondly, it is known that reception studies are related to the “Uses and Gratifications” approach and have an impact on these studies. In this approach, there is active reader/audience thinking, who uses the messages to their advantage. Another one is reception theory, which developed in Germany in the late 1960s under the influence of literary criticism. According to the proponents of this theory, the evaluation and interpretation of a literary work is shaped by the experiences of the reader and therefore may vary from person to person. Individuals, who are positioned as readers in the audience, are not only passive parties but also active receivers that produce meaning (Alasuutari, 1999: 1-21). Analyzing the media content and identifying the elements reflected in the audience's perception of the text will ensure the successful conduction of the analysis. Measurement and evaluation techniques, validity and reliability measurements in classical methodology have been largely abandoned. Here, every data obtained in interviews with the audience is given importance and every data is included in the evaluation. The data obtained from the audience interviews are evaluated together with the message analysis in the texts (Güngör, 2011: 111).

A questionnaire was created with the help of literature review in order to reveal how the audience perceives the public service announcements. Within the scope of the research, in-depth interview method was used within the framework of reception analysis. Due to the difficulty of sample representation, interviews were conducted by taking a sample from a small cluster in order to collect consistent data. Participants who agreed to answer the questions by watching the public service announcements have been determined randomly. The study has been carried out with a total of 14 people, 7 men and 7 women, between the ages of 18-65 who agreed to participate voluntarily. In the selection of the participants, a study group consisting of individuals with different characteristics was preferred. The most important reason for the selection of different participants will also increase the diversity of different data in the context of the theme of the study. The individuals participating in the study have been considered to have understood and answered the questions correctly. In order to keep personal

information confidential, coding has been done between K1 and K14 for the participants.

In order to obtain data suitable for the purpose of the study, interview questionnaires consisting of a total of 7 questions were prepared in advance, but additional questions were asked or explanatory speeches were added according to the flow of the interview and needs. In the interviews, some of the participants were interviewed via digital platforms and some of them face-to-face. In order to ensure the effective use of the meeting time, the video links of all public spot announcements published on the Ministry of Health website (Ministry of Health SGGM, 2021) were sent via e-mail 3 days before the planned meeting day thus communicating to the participants. According to Hall, audiences receive media texts in three ways. These are the dominant, the negotiator, and the (opposite) opposition. The answers given in the question form were analyzed in terms of content in accordance with these receptions. Dominant reception is expressed as the viewer's taking the meaning directly by accepting the point of view reflected in the message. Cultural prejudices are common between the parties. Deliberative reception is the partial acceptance of the point of view that dominates the message content, but there may also be codes that the audience, equipped with enough codes to decipher the message, can resist. In oppositional reception, which is expressed by Hall as the third form of decoding, the shares are culturally common, but the audience interprets the content with their own codes by giving a very clear meaning to the message. In the image-meaning relationship here, the past of each individual leads to different interpretations in the opening of the codes and the individual may show resistance (Hall, 2005: 85-97). In line with this information, a study was carried out by using in-depth interview technique by seeking an answer to the question of how public service announcements are received, based on the different reception of media contents. Within the scope of the research, the emotional impact of the public service announcements, the clarity of the message, the persuasiveness and the mobilizing impact of the announcements were based on the questions asked to the participants other than age, gender, education information. Accordingly, the questions asked to be answered by the participants are as follows:

1. If you had to describe the public service announcements you watched, how would you describe it?
2. Did you find the public service announcement believable?
3. Can you evaluate the visual and auditory elements used in the public service announcements that draw your attention?
4. Did you find the message of the public service announcement understandable?
5. Did the public service announcements you watch have an impact on your decision to get vaccinated?
6. Can the public announcement you watch motivate those who are not vaccinated to get vaccinated?
7. What do you think a public service announcement should be like?

3. FINDINGS

In the public service commercials analyzed within the scope of the study celebrities including Sertap Erener, Demet Akbaş, Candan Erçetin, Cedi Osman, Şener Şen, Okan Bayülgen, Mehmet Öz, Kıvanç Tatlıtuğ, Haluk Bilginer, Ezgi Mola, İlber Ortaylı, Beyazıt Öztürk, Şerif Sezer, Hayko Cepkin, Cem Yılmaz, Engin Altan, Zeynep Bastık and Sevcan Orhan took the stage and invited the public to get vaccinated. Although the rapid decrease in the age limit for the vaccine and the fact that the vaccines reach more people in a shorter time is pleasing to many, there are many people who are not sure about the safety of the vaccine. Health Minister Fahrettin Koca shared the public spots containing celebrity names on his twitter account in order to prevent this anti-vaccine attitude, and the said public spots have been broadcast on television, radio, social media and various websites since last June. In the public service announcements, which were shot indoors, accompanied by voice-overs and piano background music, the situation was determined primarily by the participating artists and preliminary information was given to the audience of the announcements. Then, it was emphasized that the most effective way to control epidemic diseases was vaccination. The point that makes the commercials original is the description of the vaccine. The testimonies of public or private persons are important in supporting the message or subject and in realizing the communication to the expected extent

(Balci, 2006: 79). In the description in question, the selection of famous people as the main characters and placing them in the commercial also created the interesting side of the commercial film.

In order to determine the general situation of the people participating in the reception study within the scope of the research, questions were asked to the participants in which media they encountered the public spots called “We Are Overcoming Covid 19 with Measures and Vaccines (celebrities)”, age, education, profession, marital status and whether they had a coronavirus vaccine. The age range of the participants is between 18-65. The age distribution of the participants is 3 participants between the ages of 18-30; 6 participants between the ages of 30-39, 2 participants between the ages of 40-50, and 3 participants between the ages of 51-65. 3 of the participants (K1, K3, K14) are on television, 6 (K2, K4, K7, K9, K11, K12) are on social media platforms, and 5 (K5, K6, K8, K10, K13) stated that they watched the aforementioned public service announcements on websites. Of the participants, 1 is primary school, 1 is secondary school, 3 are high school, 7 are under-graduate, 2 are graduate level students. As regards to their marital status, 7 people are married and 7 people are single. While 10 of the participants stated that they had two doses of Covid 19 vaccine, 1 person stated that one dose, 2 people three doses, and 1 person had no vaccination.

Table 1: Demographic Information of Participants

Code	Gender	Age	Education Status	Profession	Marital Status	Vaccination Status
K1	Female	31	Graduate	Academician	Single	Yes. 2 doses
K2	Female	18	High School	Student	Single	Yes. 2 doses
K3	Female	65	Middle School	Housewife	Married	Yes. 3 doses
K4	Female	38	High School	Housewife	Married	No.
K5	Female	48	Under-graduate	Teacher	Married	Yes. 2 doses
K6	Female	30	Under-graduate	Journalist	Single	Yes.2 doses
K7	Female	52	Primary School	Merchant	Married	Yes. 2 doses

K8	Male	24	Under-graduate	Sales Assistant	Single	Yes. 2 doses
K9	Male	34	High School	Merchant	Married	Yes. 2 doses
K10	Male	50	Under-graduate	Financial Assistant	Married	Yes. 2 doses
K11	Male	32	Graduate	Academician	Married	Yes. 1 dose
K12	Male	27	Under-graduate	Journalist	Single	Yes. 3 doses
K13	Male	38	Graduate	Coach	Single	Yes. 2 doses
K14	Male	42	Graduate	Sociologist	Single	Yes. 2 doses

First of all, the participants were asked the question, “If you had to describe the public service announcements you watched, how would you describe it?” After relevant description was made, they were asked to elaborate their answer in order to learn the reasons for expressing it in this way. 10 of the participants stated that the importance of the vaccine was emphasized in the public service announcements and they thought that the public service announcements were informative, aimed at raising awareness, sincere and useful. “I would describe the public service ad I watched as convincing and persuasive. They claimed that the reason for this was that these announcements should raise awareness and make people think a little.” The imaginary meaning of the scene including men and women framed with the middle shot of the camera creates intimacy in line with personal relationships. The public service announcements examined in this context convey their messages about the issue through artists, which was “The most effective way to control epidemics is vaccination today, as it was yesterday.” The credibility and reliability of the source affect the persuasion. Therefore, a message from a credible, reliable and well-known source is one of the important factors affecting the persuasion process (Cüceloğlu, 2005: 522). The participant named K14 points out that he finds the public service announcements sincere and continues as follows: “When we look at the general character of the announcements, it is seen that the slogan and the actors are doing this just for the sake of advertising. However, in the Covid-19 vaccine public spots, I saw that the actor and the spotlight are very sincere in order to ensure the safety of both himself and his surroundings.” K6 said: “I would define it as the guiding statements of people who can be called opinion leaders.” K12 added: “The virus vaccine has created controversy for political

reasons. And many conspiracy theories have come to the fore on this subject. The use of artists with different ideologies in the film has increased the credibility.” K13 conveyed her message as follows: “Giving information to clear up questions about vaccination while encouraging people to vaccinate.”

Two of the participants pointed out that public service announcements should be more effective and convincing, pointing out that opinion leaders are not experts in health. For example, K2 stated: “I think a service that informs people is necessary. But it could be in a more effective and believable way. It had to be the experts.” K3 said, “I don't think it's very successful. The importance of the vaccine could have been emphasized more. Maybe experts could be used alongside the artists.” Another participant stated that public service announcements did not raise awareness. One participant found the public service announcements meaningless. K8, one of the participants, expressed his thoughts as follows: “The solution to the problem in Covid 19 public service announcements is offered to the public as a vaccine. After all, some people do not like this solution because there are still people who are vaccinated and die. Therefore, awareness-raising work in public service announcements is insufficient, as there is no awareness about all aspects of the problem. My opinion is that common consciousness cannot be achieved. I would consider this situation as not being able to raise awareness. It is also an insufficient situation that opinion leaders playing in public spots are not experts in health.” K11 added: “I would describe it as meaningless. Because I think that the prepared content is not suitable for the target audience.”

After watching the public service ad, the participants were asked, “Did you find the public service ad believable? Have the health-threatening factors and the suggested solutions been used together?” In the responses received, the public service announcement was found convincing by 5 participants. K1 said: “Yes, I can say that I find it convincing. In addition to the problem, I think that the solution suggestions are also used effectively. In addition to the mask, distance and hygiene rules, the solution regarding the vaccine has also appeared effectively.” K3 added: “I found it believable because the elements that threaten health and the rules we need to pay attention to were presented together.” K9 stated: “I found the public service ad credible. Elements and solutions are used effectively.” K12 expressed: “The credibility has become even stronger because of the use of artists of all

views in the public service announcements.” While conveying his views as follows, K14 said: "I found the public service ad credible, it is clearly explained that the epidemic threatens both our own health and our environment, and that the only factor in preventing the epidemic is to be vaccinated." It was determined that 9 of the participants used the proposed solution together with the elements that threaten health in the public service ad, but there were factors that prevented the use of actors from being convincing. From the answers given, it was understood that although the subject was considered very important and a real problem, the opinion that the public service announcement was not convincing, especially due to the casting and its brevity. For example, K4 added: “I think it is an important step to raise awareness, but I am in favor of the fact that people who describe threats and suggested solutions in videos do not comply with them. Because many famous people in the pandemic process are talking about it orally to raise awareness, but I have seen that very few people take action.” K6 says: “The duration of the public announcement was short. It may be well-intentioned, but its credibility is questionable. I find it more populist. I prefer to see scientists in these announcements to be solution-oriented.” K11 expresses his/her views: “A solution is not offered in the public service spots, it is only said that vaccination is necessary. It should have been explained with justification why it was necessary to be vaccinated.”

The following question was asked to participant “Can you evaluate the visual and auditory elements used in the public service announcements that draw your attention?” and it is aimed that were provided the chance to tell what was left in their minds after watching the public service ad. However, from the answers given, it was seen that the participants preferred to convey the feelings of these elements instead of making an evaluation about the mentioned elements. Thereupon, the participants were asked what their opinions were about music, effects, and the use of color in public service announcements. 9 participants, who thought that the choice of interior space in the images and the use of home or office as interior space, especially the “staying indoors” calls used throughout the epidemic process functioned as a message conveyor, stated that the citizens were called for vaccination through public service announcements to overcome this situation, and the visual and audio elements used were sufficient. From the answers given, it was

concluded that all the female participants and the male participants numbered 11 and 14 thought that the scene where Haluk Bilginer applauded those getting vaccinated attracted the attention of those who were vaccinated. For example, participant with code ID K14 said: "I thought that public service announcements were messages shot in natural home environments of well-known actors and personalities. Haluk Bilginer's applause scene was motivating. The facial expressions, pleading and striving behaviors of the message givers were remarkable. The piano was beautiful. The color tones were also nice." K13 expresses his views as follows: "I find the music used and the choice of green color to be very impressive for the vaccine, and correctly constructed in such a way that it enters the subconscious of the audience. The use of the green color used in operating rooms as a background can be associated with the reliability aspect of the relevant color. Green, on the other hand, is the color of peace and hope. Looking to the future with hope in the commercial is also related to this color. The constant talk of normalization reminded me of the longing for the old life. The desire to be vaccinated in order not to return to the first times aroused thoughts such as incentives for vaccination." K1 stated: "Public announcements that I came across were decorated with very plain colors. The piano used was in place and played softly in a way that brought the subject to the fore. He especially emphasized that we should pay attention to the solution suggestions and rules. I can't forget Haluk Bilginer applauding those who have been vaccinated." K7 said: "The angle and music used in the public spotlight were chosen in accordance with the subject. So this situation affected me the most. In addition, the colors and text used were prepared to attract attention and the motivation. It was nice that Haluk Bilginer applauded those who were vaccinated." K11 expressed his views as follows: "I think that Kıvanç Tatlıtuğ's saying that health workers are the people who should be admired is one of the things that stuck in my mind the most. I got a message from this statement that everyone admires me and I also admire them. Another catchy thing was Haluk Bilginer's applause for those who were vaccinated. The choice of color and music was adequate."

5 participants stated that the instrumental music used did not stay in their minds, the colors of the public service were pale and the public service announcements, which showed that people who were not vaccinated regretted

in the intensive care unit, affected them more. K3 said: “I did not find the visual and auditory elements used sufficient. I think that if the worrying visuals were used more often and a little more exaggerated, it would attract a little more attention. I didn't remember the music at all and the colors were pale.” Participant K4 added: “Public ad videos in which there is a patient who has not been vaccinated and therefore hospitalized in the intensive care unit worried me more. I was intrigued by the words I wish I had, especially mentioning that the person is not vaccinated. There is no such example in the spots I watch. Therefore, the shooting angle, the colors used and the music are far from being a message.” K9 expressed: “I think the most effective are the public service announcements that show that people who have not been vaccinated regret in the intensive care unit. Auditory elements worried me. The music used had no effect, I don't remember. I also found the colors pale.”

In order to measure the understanding of the message of the public service announcements, the question “Did you find the message of the public service announcements understandable?” was asked. All of the participants stated that the message of the public service announcement was clear, understandable and the only way to prevent the epidemic was to be vaccinated.

To collect the participants' ideas as to whether the public service has an effect on their vaccination after watching the public service announcements, the question “Did the public service announcements you watch have an impact on your decision to get vaccinated?” was forwarded to participants. 5 participants state that the messages in the public service announcements encourage them to demonstrate social effort and state that the said public service announcements are effective in getting vaccinated. 9 participants stated that public service announcements were not effective in getting vaccinated. Some of the responses received are as follows:

K1: “Public spots had no effect on my getting vaccinated. I knew our solution to this epidemic was to get vaccinated and follow other rules. As soon as my right to vaccination was issued, I went and got vaccinated”.

K2: “No, but I can say that it reminded me to think”

K4: “I don't want to be vaccinated. The 3-item responsibility, which is signed by people before the vaccination, makes the individual take the

responsibility for the death of the individual after the vaccination. By not being vaccinated, the individual already takes the responsibility for his death on himself. In both cases, if the responsibility is with the individual who lost his life, he can use his freedom in this matter as he wishes.”

K5: “It did not affect. I already chose to be for my own health.”

K6: “Public spots had no effect on my decision to get vaccinated.”

K8: “The reason why I got vaccinated was due to the fact that I was constantly asked for a PCR test unless I was vaccinated at my workplace.”

K11: “The fact that the artists gave advice and tried to influence people on a subject that is still under scientific debate, on the contrary, reinforced the idea that I should not be vaccinated”.

K12: “No, it did not affect me, at all. Because I knew the extent of the disease because my mother was a healthcare professional. I had no doubts when making a decision about getting vaccinated. I had an immediate vaccination.”

The question, “Can the public spot you watch mobilize those who are not vaccinated to get vaccinated?” was posed to the participants. Nine of the participants answered “yes”. For example, participant identified as K6 expressed: “When we look at the general population, we see that there are many people who will be affected by these announcements and the people starring in these announcements. I think it definitely creates a movement in society.” K14 said: “Public announcements can be a trigger for those who are not vaccinated to take action.” Similarly, K12 expressed the situation as follows: “It can definitely work. The theory of conservation motivation explains this situation.” There are 3 participants who were neutral about the effect of public service announcements on the vaccination decision, whether they could mobilize those who are not vaccinated to get their vaccinations done. Emphasizing that the effect of public service announcements could vary from person to person, participant K4 continued as follows: “I am undecided about the effect of public service announcements. Because there are people who are willing to get vaccinated, and there are also people who are determined not to get vaccinated.” The participant K3 similarly answered as follows: “It can mobilize people at a certain level. I don't think it motivates young people.” K5 added: “I am undecided. People voluntarily get vaccinated

or not.” Two of the participants state that public service announcements cannot mobilize those who are not vaccinated to get vaccinated. K1: “I don't think people who want to get vaccinated will need a public service announcement. They already know that they need to be vaccinated in order to be able to move freely in daily life and stay away from the virus. As for those who are indecisive about getting vaccinated or not, I don't think it will affect them. Those who are conscious have already had their vaccinations.” K11 articulated: “Using opinion leaders in such campaigns is generally a preferred method. Maybe it can affect the indecisive followers and fans of those celebrities to some extent, but I don't think it can affect individuals who research, question and choose not to be vaccinated.”

With the last question asked to the participants, it was aimed to learn the suggestions regarding the content and design of the public service announcements with the theme of “We are Overcoming Covid 19 with Measures and Vaccines (celebrities)” in order to increase public awareness and provide success and impact in shaping the conscience. In line with this purpose, the question was forwarded to participants as follows; “How do you think a public service announcements should be?” From the responses received, it has been understood that it is expected by society that use real life stories will be used and real experts will be included in this announcements. The following responses were received:

K1: “It should present facts and scientific data.”

K2: “I can suggest that it be done in a more convincing, more informative and proven way.”

K3: “I think it would be more effective if they had this disease and conveyed what people really experienced through life.”

K4: “Honestly, I think it would be more effective to have a member of the public rather than seeing famous people in public service announcements. In this way, public service announcements do not seem very convincing to me.”

K5: “People who are sick should be interviewed and their difficulties should be addressed.”

K6: “Experts should be included in the subject on which consciousness is wanted to be raised, and there should be explanations.”

K7: "It must be someone from real life"

K8: "Celebrities may be used as opinion leaders in the spots, but there should have been experts on the subject besides them. I don't think people who have doubts about their health will get vaccinated just because a famous person said we should get vaccinated. Instead of telling people to get vaccinated, if they explain why they need to be vaccinated, they will be convinced and get vaccinated. There is no need to say get vaccinated."

K9: "Better message delivery can be achieved with informative, more actors selected from among the public."

K10: "A public awareness can be created by showing the images, sound recordings and the work done on them by taking the permission of the people who have the disease."

K11: "We see that the messages created within the framework of the campaign appeal more to emotions rather than rational messages. People were confused because of the emergence of very different opinions about the Covid 19 vaccine. The unvaccinated people, who are the target audience of these videos, have not been vaccinated because they already have reservations. The content of the public service announcements should have been in a way that would alleviate the reservations of those who were not vaccinated. First of all, it was necessary to interview people who did not want to be vaccinated to determine why they did not want to be vaccinated and what they had doubts about. According to the results from this, content and messages should be created in a way that will remove the doubts of those who do not want to be vaccinated and convince them in order to achieve success and impact."

K12: "The message is important in public spots. In order for the message to be conveyed effectively to the recipient, some remarkable elements must be present in the public service announcements. For example, the distress experienced by an individual with covid-19 could have been given in the spotlight."

K13: "A plain and understandable language should be used, reminding people of their troubles and past times, showing the good developments that will emerge when the message intended to be given in the public service announcements is realized thus raising awareness."

K14: "Scientific research results could have been included in the spots. In other spots other than Okan Bayülgen's spot, it could have been said

that the arguments of anti-vaccine opponents were far from scientific understanding.”

4. CONCLUSION

Today, the pandemic, against which all the countries of the world are fighting, has taken its place in our lives as one of the most important risks that disrupt healthy living conditions and threaten human existence. The emergence of the covid-19 virus, which affects the whole world, was succeeded by the increase of activities carried out to raise awareness of the people in our country. It is necessary to state that, within the framework of the studies carried out to raise awareness of the society, public service announcements are important all over the world. In this context, in order to reach wide audiences, the vaccination efforts initiated by the Ministry of Health in the fight against Covid-19 were broadcasted under the title of “We are Overcoming Covid 19 with Precautions and Vaccination, public service announcements (celebrities)”, in 18 different public service announcements to raise awareness about vaccination. It was emphasized that the most effective way to control epidemic diseases is vaccination. In parallel with the innovations that emerged with the changes in communication technology, the audience has transformed from passive audience to active audience. In this sense, within the scope of the study, the audience was accepted as active and the public spots broadcast by the Ministry of Health were watched by 14 people and an answer was sought to the question of how the relevant public spot was received.

First of all, the participants were asked the question, “If you had to describe the public service announcements you watched, how would you describe it?” Once they obtained relevant description, they were asked to elaborate their answer in order to elicit their reasons to think that way. 10 of the participants stated that the importance of the vaccine was emphasized in the public service announcements and they thought that the public service announcements were informative, aimed at raising awareness, sincere and useful. Two of the participants pointed out that public service announcements should be more effective and convincing, pointing out that opinion leaders are not experts in health. While one participant stated that the public service announcements did not raise awareness, another participant stated that they

find it meaningless. The public service announcement was found convincing by 5 participants. Nine of the participants state that the health-threatening elements and the proposed solution are used together in the public service ad, but there are factors that prevent them from being convincing about the use of actors. From the answers given, it was understood that although the subject was considered very important and a real problem, the opinion that the public service announcement was not convincing, especially due to the casting and its brevity.

The question, “Can you evaluate the visual and auditory elements used in the public service announcements that draw your attention?” was aimed to enable the participants to tell what the elements that stay in their minds the most after watching the public service announcement. 9 participants, who thought that the choice of interior space in the images and the use of home or office as interior space, especially the “Stay Indoors” calls created during the epidemic process, had the quality of a message, stated that the citizens were called for vaccination through public service announcements to overcome this situation, and the visual and audio elements were sufficient. From the answers given, it was concluded that all of the female participants and the male participant numbered 11 and 14 attracted to the scene where Haluk Bilginer applauded those who were vaccinated. 5 participants stated that the instrumental music used did not stay in their minds, the colors of the public service were pale and the public service announcements, which showed that people who were not vaccinated regretted in the intensive care unit, affected them more. In order to measure the understanding of the message of the public service announcement, the question of “Did you find the message of the public service announcements understandable?” was used. All of the participants stated that the message of the public service announcement was clear and understandable which is the only way to prevent the epidemic was to be vaccinated. 5 participants stated that the messages in the public service announcements encourage them by demonstrating social effort and state that the said public service announcements are effective in getting vaccinated. 9 participants stated that public service announcements were not effective in getting vaccinated. The question, “Can the public spot you watch mobilize those who are not vaccinated to get vaccinated?” was also posed to participants. Nine of the participants answered “yes”. There are 3 participants

who abstain from the effect of public service announcements on the vaccination decision, that they can mobilize those who are not vaccinated to be vaccinated. Two of the participants state that public service announcements cannot mobilize those who are not vaccinated to get vaccinated. With the last question asked to the participants, it was aimed to learn the suggestions about the content and design of the public service announcements in order to increase the awareness of the society and to provide success and impact in shaping the conscience. In line with this purpose, “How do you think a public service announcements should be?” question has been asked. As a result of the responses received, it has been revealed that there is a perception that the audience agrees on finding the message understandable, and that the vaccination campaign supports the fight against Covid 19. However, it has also been determined that real life stories are expected to be used in public service announcements, experts are expected to be included, and it is desired to watch high-convincing public service announcements by making more careful choices in shooting techniques, music and color usage.

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CHAPTER 4

**HOW DID THE COVID-19 PANDEMIC AFFECT HEALTH
WORKERS' HEALTH? A STUDY ON THE COMPARISON OF
PRE- AND POST-TREATMENT SYMPTOMS ON HEALTH
WORKERS WITH COVID-19 DISEASE IN TRABZON
(TURKEY)¹**

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INTRODUCTION

It is of great importance to combat diseases as they can cause other diseases, disability and death in humans. When infectious diseases are not controlled, they can lead to epidemics or pandemics. For example, in the last two decades, many new infections such as Ebola, SARS, Avian Influenza (H5N1), MERS and finally Covid-19 have caused major epidemics (Ülman, 2020).

Thus many people around the world have lost their lives due to the rapid transmission of Covid-19 disease, the inability to take precautions, the lack of treatment protocols and the inability to control it. In the face of this situation, fear, panic and anxiety have become inevitable in all countries of the world and ways of struggle have begun to be sought. Since March 12, 2020, when it was declared a "pandemic" by the World Health Organization (WHO), developments in the diagnosis and treatment of the disease continue.

Although the exact figures are not known, 6643 of the 3.45 million Covid-19 related deaths reported to the WHO belong to HCWs. According to a global population-based estimate, about 115,500 of the 135 million global HCW workforce could die from the pandemic (WHO, 2021).

With the outbreak of the Covid-19 pandemic in China, it can be said that studies dealing with the pandemic in all disciplines have intensified. The search for diagnosis and treatment, in which public health is at the forefront, may have led to some disregard of HCWs who are at the forefront of this struggle. The increasing number of patients following the early days of the pandemic, crowded intensive care units, and extended working hours have led to an increase in psychosocial studies on HCWs. Actually only some of these studies deal with the physical health of HCWs.

If health is a state of physical, mental and social well-being as a whole, the pandemic harms all aspects of health. In times of large-scale crisis such as a pandemic, the protection of HCWs is vital in terms of human

resources, which is the most important part of hospitals at the micro level and the health system at the macro level. For this reason, although "zero deaths" are not possible in such pandemics, it is important to monitor the health status of employees who have Covid-19 disease. Thus, the transition from the pandemic process can be facilitated by keeping the sick numbers of HCWs at a reasonable level and providing treatment for those who have the disease.

1. MATERIALS AND METHODS

1.1. Purpose of The Research

The aim of this study is to compare the ongoing symptoms before and after the treatment of HCWs who had Covid-19 disease in the sample of Trabzon province.

1.2. Population and Sample of The Research

Trabzon Fatih State Hospital has a total of 888 HCWs. 266 of these personnel were diagnosed with Covid-19 at the time of the research. The sample of the study consists of 100 HCWs out of 266 HCWs diagnosed with Covid-19. The following HCWs working in different departments within the hospital were included in the sample: Nurse and midwife, secretary and medical secretary, cleaning and patient care staff, doctor, data preparation control officer, security, janitor, laboratory technician, health officer, anesthesia technician and technician, x-ray technician, technical staff, pharmacist, dialysis technician and technician, audiometry technician, emergency medical technician and others.

1.3. Materials and Methods

The survey form used as a data collection tool in the research was prepared by the researcher İlknur Başaran. It consists of informative questions, two-choice questions and multiple-choice questions. Graphs were designed and data were analyzed using Spss program.

1.4. Ethics of The Research

After obtaining written permission from the Republic of Turkey Ministry of Health, Trabzon Provincial Health Directorate and Trabzon Fatih State Hospital, a survey was conducted for 1 (one) month, between 19.03.2021-19.04.2021.

2. RESULTS

Within the scope of the research, questions such as gender, age, occupation, blood type, chronic disease, smoking, lung disease, vaccination, first symptom, disease severity, examination, medication used, duration of drug treatment, side effects, type of treatment, ongoing symptom were asked.

The total number of employees of the hospital is 888, of which 29.95%, corresponding to 266 HCWs, were diagnosed with Covid-19. Of the 100 participants in the study, 73 were women and 27 were men. Among these HCWs, 51 are in the 35-45 age range, 29 are in the 45-55 age range, 19 are in the 25-35 age range and 1 is under the age of 25.

The occupational distribution of the 100 HCWs who participated in the research was as follows: The disease was mostly seen in nurses with 49 HCWs. This is followed by 11 cleaning staff, 11 secretaries and medical secretaries, 8 security guards, 7 doctors, 5 health officers, 4 technical staff (technicians), 2 data preparation and control officers, 2 patient care staff and 1 pharmacist (Table 1).

Table 1: Occupational Distribution of Hcws With Covid-19 Disease

Occupations	Frequency (Person)	Percent (%)
Nurse	49	49
Cleaning Staff	11	11
Secretary and Medical Secretary	11	11
Security Guard	8	8
Doctor	7	7
Health Officer	5	5
Technical Personnel	4	4
Data Preparation Control Officer	2	2
Patient Care Staff	2	2
Pharmacist	1	1
Total	100	100

It has been determined that the disease is more common in HCWs with blood group A Rh(+). There was no HCWs diagnosed with Covid-19 in the AB Rh(-) blood group (Table 2).

Table 2: Distribution of Covid-19 Disease By Blood Type

Blood Type	Frequency (Person)	Percent (%)
A RH(+)	41	41
O RH(+)	26	26
A RH(-)	15	15
B RH(+)	7	7
O RH(-)	6	6
B RH(-)	3	3
AB RH(+)	2	2
AB RH(-)	-	-
Total	100	100

When the data of HCWs participating in the research are examined, while 70 do not have any chronic disease, 30 have a chronic disease, 85 do not smoke, 15 smoke, while 93 do not have any lung disease, 7 have lung disease. It was observed that 87 HCWs were not vaccinated and 13 were vaccinated against Covid-19.

2.1. First Symptoms of Covid-19 Disease

As can be seen in Table 3, among 100 HCWs, weakness is the first symptom of the Covid-19 disease, with 52 HCWs in the first place.

Frequency analysis of the data shows that "weakness, backache, pain, loss of taste and smell and fever" stand out among the most prominent symptoms of Covid-19 disease; It ranges from weakness (60%) to diarrhea (10%). Other symptoms such as "nausea, nasal congestion, post-nasal drip, sneezing, asymptomatic, conjunctivitis, dizziness, malaria, mood changes, loss of appetite, sore throat" were below 10%.

Table 3: First Symptoms of Covid-19 Disease

First Symptom	Frequency (Person)	Percent (%)
Weakness	52	52
Joint Pain	43	43
Back Pain	43	43
Muscle Pain	37	37
Pain	34	34
Fatigue Quickly	34	34
Loss of Taste and Odor	28	28
Cough	25	25
Fever	24	24
Pain in the Extremities	24	24
Diarrhea	9	9
Respiratory Distress	9	9
Nausea	7	7
Headache	5	5
Nasal Congestion	4	4
Throat Ache	4	4
Postnasal Drip	2	2
Runny Nose	2	2
Sneeze	2	2
Vomiting	2	2
No Symptoms	2	2
Chest Pain	1	1
Conjunctivitis	1	1
Redness in the Eyes	1	1
Dizziness	1	1
Pharyngitis	1	1
Malaria	1	1
Backache	1	1
Spiritual Change	1	1
Tachycardia	1	1
Anorexia	1	1
Forgetfulness	1	1
Stinging Feeling in the Throat	1	1

2.2. Examination and Severity of Disease

It was seen that the disease was moderate in 58 HCWs, mild in 33 HCWs and severe in 9 HCWs. Out of 100 HCWs, 91 were diagnosed with Covid-19 disease by PCR test, 7 by Lung (Thorax) tomography and PCR test, 2 were diagnosed with only Lung (Thorax) tomography.

2.3. Treatment Process

While 86 HCWs received outpatient treatment, 14 received inpatient treatment Favipiravir was used in 83 HCWs, Painkillers in 57, Anticoagulants in 52, Antipyretic in 33, Favipiravir and Plaquenil in 21, and antibiotics in 20 HCWs. In addition, 9 HCWs used steroids, 6 used Vitamins (C-D) and Immune Plasma Therapy, 5 used drugs such as Plaquenil. On the other hand, 8 did not use any medication.

Table 4: Medicines Used in The Treatment of Covid-19

Medicines Used in Treatment	Frequency (Person)	Percent (%)
Favipiravir	83	83
Painkiller	57	57
Anticoagulant	52	52
Fever Reducer	33	33
Favipiravir + Plaquenil	21	21
Antibiotic	20	20
Steroids	9	9
Vitamins (Vit C-D)	6	6
Immune Plasma Therapy	6	6
Plaquenil	5	5
No Medication	8	8

12 HCWs received treatment for 14 days, 32 for 10 days, 20 for 7 days, 27 for 5 days, and 1 for 4 days. On the other hand, 8 did not use any medication.

Among the side effects seen during the treatment process, nausea ranked first with 31 HCWs. This was followed by headache in 27, loss of appetite in 18, respiratory distress in 15, diarrhea in 13, abdominal pain and vomiting in 6, mood changes in 5, cardiac problems in 4, pneumonia in 4.

However, 1 HCW had other (not specified) side effects, but he did not specify what it was. 8 HCWs did not use medicine, and 38 did not have any side effects.

2.4. Comparison of Initial Symptoms, Side Effects and Continuing Symptoms of Covid-19 Disease After Treatment

As seen in Table 5, *weakness* was seen as the first symptom in 52 people, as a side effect in 1 person, and as a continuing symptom after treatment in 37 HCWs.

Although *joint pain* was seen in 43 HCWs as the first symptom, it was not seen as a side effect, but it was seen in 22 as a symptom that continued after treatment.

Back pain was seen as the first symptom in 43 HCWs, it was not seen as a side effect, but it was seen in 38 as a symptom that continued after treatment.

Muscle pain was not seen as the first symptom in 37 HCWs, as a side effect and as a persistent symptom after treatment.

Quick fatigue was seen in 34 HCWs as the first symptom, not seen as a side effect, but it was seen in 37 as a symptom that continued after treatment.

Loss of taste and smell was seen as the first symptom in 28 HCWs, as a side effect in 1, and as a persistent symptom after treatment in 2 HCWs.

Cough was seen as the first symptom in 25 HCWs, as a side effect in 1, and as a continuing symptom after treatment in 9 HCWs.

Fever was seen as the first symptom in 24 HCWs, as a side effect in 1, and was not seen as a permanent symptom after treatment.

Pain in the extremities was seen as the first symptom in 24 HCWs, but was not seen as a side effect or as a symptom that continued after treatment.

Diarrhea was seen as the first symptom in 9 HCWs and a side effect in 13 and was not seen as a persistent symptom after treatment.

Table 5: Initial Symptoms, Side Effects and Continuing Symptoms of Covid-19 Disease After Treatment

Symptom	First Symptom Frequency (Person)	Side Effect Frequency (Person)	Ongoing Symptom After Treatment Frequency (Person)
Weakness	52	1	37
Joint Pain	43	-	22
Back Pain	43	-	38
Muscle Pain	37	-	-
Pain	34	1	-
Fatigue Quickly	34	-	37
Loss of Taste And Odor	28	1	2
Cough	25	1	9

Fever	24	1	-
Pain in the Extremities	24	-	-
Diarrhea	9	13	-
Shortness of Breath	9	15	5
Nausea	7	31	2
Headache	5	27	12
Nasal Congestion	4	1	-
Throat Ache	4	-	1
Postnasal Drip	2	-	7
Runny Nose	2	-	-
Sneeze	2	-	-
Vomiting	2	6	-
Stinging Feeling in the Throat	1	-	-
Chest Pain	1	-	-
Conjunctivitis	1	-	-
Redness in the Eyes	1	-	-
Dizziness	1	1	-
Pharyngitis	1	-	-
Malaria	1	-	-
Backache	1	-	-
Spiritual Change	1	5	1
Tachycardia	1	-	-
Anorexia	1	18	-
Forgetfulness	1	-	29
No Symptoms	2	-	-
Tiredness	-	-	44
Hair Loss	-	1	18
Hypertension	-	1	1
Power Loss	-	-	1
Insomnia	-	-	1
Burning Sensation in Feet	-	-	1
No Symptoms	-	-	11
Stomach Ache	-	6	-
Cardiac Problems	-	4	-
Pneumonia	-	4	-
Severe Acute Respiratory Infection	-	3	-
Itching, Rash, Redness	-	2	-
Constipation	-	1	-
Right-Left Flank Pain	-	1	-
Chill	-	1	-

Urinary Incontinence	-	1	-
The Need to Drink A Lot of Water	-	1	-
Severe Neck and Neck Pain	-	1	-
Other (Unspecified)	-	1	-
Kidney Failure	-	1	-
Loss of Odor	-		1
Kidney Pain	-	1	-
No Medication	-	8	-
No Medication Side Effects	-	38	-

3. DISCUSSION

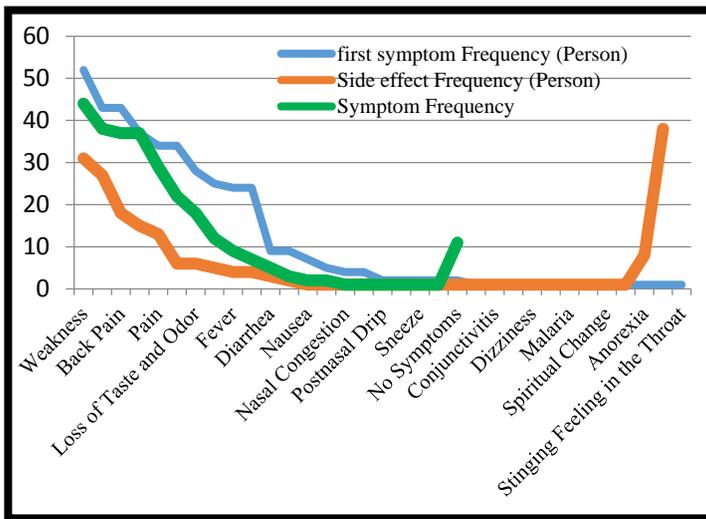
In this study, according to the data obtained from 100 HCWs about the symptoms that existed before and after the treatment of HCWs who had Covid-19 disease; it was determined that

- the disease was seen mostly in women with 73 HCWs,
- in the age range of 35-45 with 51,
- mostly in nurses with 49 HCWs,
- in ARh(+) blood group with 41, but it was not seen at all in the ABRh(-) blood group.

According to Shoja et al. (2020) study, nurses had more scores in mental pressure, physical pressure, time pressure, and frustration compared to the other jobs. Similarly, Vizheh et al. (2020) systematic search shows that nurses, female workers, front-line HCWs, younger medical staff, and workers in areas with higher infection rates reported more severe degrees of all psychological symptoms than other HCWs.

As seen in our study, it can be stated that the risk of catching the disease is higher in the female HCWs who are in one-to-one contact with patients, especially nurses.

As seen in the Graph 1, first symptom frequencies are shown in blue colour, symptom frequencies in green colour, and side effect frequencies in orange colour. The first symptoms with a high frequency are parallel to the symptoms, but with a slightly lower frequency. Similarly, side effect frequencies are lower when compared to the frequencies observed in symptoms. In general, side effect frequencies < symptom frequency < first symptom frequencies can be expressed as.



Graphic 1: Frequency Distribution Of The Initial Symptoms, Side Effects And Post-Treatment Symptoms Of Covid-19 Disease In Hcws

It is noteworthy that the majority of the HCWs in our sample did not have a chronic disease, do not smoke, and did not suffer from any lung disease. It is determined that Covid-19 disease is very common in 70 HCWs without chronic disease, 85 in non-smokers, 93 without lung disease, and 87 who are not vaccinated.

Wu et al. (2020) study with 31,100 samples compared to other ABO Rh blood type, an increased odds of infecting Covid-19 among individuals with A Rh blood group and a decreased odds of infecting Covid-19 among individuals with blood group O Rh were found.

Shaukat et al. (2020) study indicates that the most common symptoms amongst HCWs were fever (85%), cough (70%), and weakness (70%).

Similarly in our study, it was observed that weakness was in the first place with 52 HCWs. Also according to Li et al. (2021) study the prevalence of depression, anxiety, and poor self-rated health was 21.3, 19.0, and 9.8%, respectively, among public health workers.

Salazar de Pablo et. al. (2020) study underlines that HCWs are at high risk of developing physical/mental health outcomes related to Covid-19 syndromes. Their research physical health outcomes is as follows: 75.9% HCW infected by Sars/Mers/Covid-19 reported fever, 47.9% cough, 43.6% myalgias, 42.3% chills, 41.2% fatigue, 34.6% headaches, 31.2% dyspnoea, 25.3% sore throat, 22.2% nausea/vomiting, 18.8% diarrhoea.

When the first sign, side effect and symptoms that continued after the treatment were compared, weakness was the first symptom in 52 HCWs, 1 person in the side effect, the symptoms that continued after the treatment were not seen in the first symptom and the side effects in 37 HCWs. While symptoms were seen in 44 HCWs, loss of appetite, 1 person in the first sign, 18 HCWs in the side effect, it was not seen in the symptoms that continued after treatment.

As it can be understood from this, while some symptoms are high in the first symptoms, they are less and not seen in the side effects and the symptoms that continue after the treatment. During the course of the disease, less or no symptoms may be observed in the first sign or symptoms that continue after treatment.

CONCLUSION

There are many studies that examine the effects of the Covid-19 pandemic on HCWs in terms of psychosocial or mental health. However, it can be argued that the studies dealing with the physical health data of HCWs in the face of the pandemic are limited in this challenging process. In this context, this study aims to present a holistic picture of the symptoms caused by the pandemic on a sample of HCWs operating in the province of Trabzon (Turkey).

Considering the roles played by HCWs, who are important actors of the health system, during the pandemic process, it is clear that the capacity and abilities of HCWs to protect their own health and self-healing should be developed in such crisis periods.

Preventing HCWs from contracting the disease under pandemic conditions, treating sick workers and reintroducing them to the work environment is a managerial issue that needs to be addressed on its own.

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Conflict of Interest

The author declare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: İB; Material, methods and data collection: İB, Tİ; Data analysis and comments: İB, AA, Tİ; Writing and corrections: İB, AA

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CHAPTER 5

**NON-EDUCATIONAL FUNCTIONS OF HIGHER EDUCATION
DORMITORIES DURING THE PANDEMIC PERIOD**

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INTRODUCTION

Due to the covid-19 epidemic that emerged in Wuhan, China at the end of 2019, a Pandemic was declared worldwide on March 12, 2020. More than 4 million people died worldwide due to the deadly Covid-19 epidemic. The pandemic process has undergone radical transformations in all countries of the world, especially in health, from education to economy. It is possible to say that education is the institution most affected by the epidemic after health. As a matter of fact, according to the data shared by UNESCO, as of April 2020, schools and universities were closed in 188 countries due to the Pandemic. On the other hand, the number of students affected by the process is 1,576,021,818, which corresponds to 92 percent of the world student population. (UNESCO, 2020). In this process, with the advice of institutions such as UNESCO and UNICEF, a distance education system has been adopted throughout the world. Universities are at the forefront of the stages that have passed to the distance education system. Universities in Turkey decided to close on March 12, 2020 and continued distance education until the fall semester of the 2021-2022 academic year. As it is known, the Credit and Dormitories Institution affiliated to the Ministry of Youth and Sports is an institution that provides accommodation services to higher education students. In this context, the dormitories that lost the audience they served with the closure of the universities were also closed to service on the same date.

During the pandemic process, public institutions and organizations faced an unusual working system. While the Ministry of National Education encountered a model called distance education that it had not experienced before, the Ministry of Health interrupted the usual treatment processes and worked on red alert. Many of the other public institutions have switched to the remote service model, and one-to-one services have been redefined according to the principle of controlled social life. On the other hand, public institutions have taken the responsibility one by one and are faced with offering many services that do not routinely fall under their mandate. In other words, institutions have done "whatever it takes" to get out of this crisis that the world has gone through, contrary to what is written in the founding laws. This is a normal outcome of the process. As a matter of fact, the Pandemic brought the unknown, and most decisions had to be taken from evening to morning. Dormitories, which were closed to service during the pandemic process, were

neither fully closed nor switched to a distance education model like schools. However, dormitories are sometimes substituted for health services, sometimes for judicial services, sometimes for accommodation services and sometimes for security services. In this context, one of the institutions that moved away from the routine of the pandemic was the higher education dormitories. Although its purpose is to provide accommodation services to university students, the dormitories have almost been positioned as a quarantine center during the Pandemic process. Moreover, the transformation of some dormitories into hospitals is an indicator of how far the institution has gone out of its orbit. In this study, it is aimed to reveal the non-educational functions of higher education dormitories affiliated to the General Directorate of Credits and Dormitories during the Pandemic process. Although the research is based on the participatory observation technique, one of the qualitative research techniques, it has ethnographic codes due to the fact that the researcher is working in higher education dormitories.

1. GENERAL DIRECTORATE OF CREDITS AND DORMITORIES (KYK)

Shelter has been counted among the most important needs of the individual since the very beginning of human history. For this reason, shelter is expressed as basic physical needs along with food and drink at the first level in Maslow's hierarchy of needs. As a matter of fact, it is emphasized that the individual who does not have a place to shelter will not need self-respect, and the needs such as belonging, love and respect will not arise in the individual who cannot meet the need for shelter but cannot meet the security needs at the next level (1943). In this context, higher education dormitories are among the most important institutions of the state in terms of meeting the basic needs of young people. On the other hand, the fact that the dormitories are under the roof of the state minimizes the security concerns of families for their children. The General Directorate of Credits and Dormitories, with its old and more famous name KYK, was established in 1962 with Law No. 351. The purpose of the Law No. 351 is to “construct and operate dormitories for students who have higher education in the country and abroad, to provide nutritional aid, to contribute to their national and spiritual development through education, social, cultural and sports activities, to provide loans or

scholarships to higher education students, and to facilitate their higher education”. explained as.² The institution currently provides services with a capacity of 774 dormitories and 719.000 beds.³ While this is the case, the job description of the institution under ordinary conditions is to meet the accommodation needs of higher education students. The accommodation service includes breakfast and dinner, 24 hours hot water, internet, laundry, ironing services and daily room cleaning. In this context, the institution has a service concept that works in a hotel format. The monthly fees of the dormitories vary between 275 ₺ and 600 ₺. In addition, students are paid a contribution fee of 6 ₺ for breakfast and 13 ₺ for dinner (food allowance). In the dormitories of the institution, veterans and their children, students under the age of 25 whose parents have passed away, the spouse and children of the martyr, if the martyr has no children, his siblings, those who have completed high school or equivalent education under the Ministry of Family and Social Services, and the youth under state protection are accommodated free of charge. In addition to the accommodation service, the institution provides education scholarships and loans to students. On the other hand, students living in the dormitory also benefit from social and cultural activities. As a matter of fact, cooperation is made with the Ministry of National Education, Presidency of Religious Affairs or Municipalities and all kinds of courses and workshops are opened in the dormitories with the trainers obtained from these institutions. The institution benefits from the human resources of these institutions by signing cooperation protocols with private institutions as well as public institutions.

With the transition to the Presidential Government System, the organizational structure of the Ministry of Youth and Sports has changed, and the Provincial Directorates of Credit and Dormitories have been incorporated into the Provincial Directorates of Youth and Sports and structured as service directorates. Currently, the provincial organization of the ministry consists of Sports Services, Dormitory Services and Youth Services Directorates, which

² https://kygm.gsb.gov.tr/Public/Edit/images/KYK/351sayilikanun_yeni.pdf

³ “Turkey is the country with the largest number of public hostels in the world”, TRT Haber, <https://www.trthaber.com/haber/gundem/cumhurbaskani-erdogan-turkiye-dunyanin-en-fazla-sayida-kamu-yurduna-sahip-ulkesidir-612054.html>

are located under the Youth and Sports Provincial Director, and their affiliated units.

Higher education dormitories affiliated to the General Directorate of Credits and Dormitories serve associate, undergraduate, graduate and doctoral students. In addition to Turkish students, foreign students who come by their own means or Turkish Scholarship also benefit from higher education dormitories. Acceptance of students to the institution is made according to certain criteria. Every year, after the placement results are announced by ÖSYM, the institution is announced, and students who have been placed in any higher education program or have been placed before, apply via e-government. The information provided by students applying for dormitories regarding their success, income and social status is confirmed and evaluated by 11 different institutions.

Accommodation of young people in a healthy dormitory environment provides many advantages such as socialization, responsibility, awareness of sharing, getting to know people and managing their lives in the community. Dormitories, which were not preferred by students unless they had to, for a period of time, where many students stay in a small room, and which serve with a single bathroom and single toilet system, today serve in the comfort of a five-star hotel with very serious investments made in the last period. The data of 2014 reveals how much progress has been made in terms of safe accommodation, food and beverage, sports opportunities and cultural activities in the last 10 years (Kavuncu, 2014: 49). There are also dormitories belonging to private institutions where students can stay. However, higher education dormitories affiliated to the General Directorate of Credits and Dormitories give families confidence that their children are under the wing of the state. On the other hand, organizational activities carried out by organizations such as FETO over dormitories in the past also increase the preferability of institutional dormitories. As a matter of fact, state dormitories are reliable, organic and impartial not only physically but also in terms of all kinds of illegal structures.

2. NON-EDUCATIONAL FUNCTIONS OF HIGHER EDUCATION DORMITORIES DURING THE PANDEMIC PERIOD

2. 1. Method

Dormitories affiliated to the General Directorate of Credits and Dormitories are the first choice of almost every student who wins the university in terms of accommodation. The institution, which started its service in 1962, now hosts 719 000 students. Under ordinary conditions, only university students are accommodated in the higher education dormitories, and guests are not accepted for any other purpose. In this context, the service population of the institution is university students, and the habitus of the dormitories is designed to serve these students. However, the pandemic process required intervention in the rhythmic field of higher education dormitories. In this study, it is aimed to reveal the non-educational functions of dormitories during the Pandemic period through the data obtained through participatory observation from qualitative research techniques. Qualitative research seeks to answer the questions of how, why and how, by describing a social event in its natural environment or formation, and tries to portray a certain situation in a holistic way. In this context, techniques such as interview, observation or document analysis are used in qualitative research (Şimşek and Yıldırım, 2000: 19). Observation is one of the indispensable data collection tools of social scientists observing social events and phenomena. The observation process can be a structured process or an unstructured process that follows social reality in its natural flow and formation. The researcher can directly observe a reality, support the observation notes by examining many documents such as movies, serials, press, social media, written or audio documents. In this context, for example, the data obtained on social media about the event or group under investigation may also take its place among the observation notes. In participatory observation, the social scientist is personally involved in the event or group he observes. The most obvious advantage of participatory observation is that the probability of the researcher to denaturalize while observing these events or clusters is very low. On the other hand, the researcher can obtain data that cannot be obtained remotely by penetrating the group or event deeply.

From the point of view of this study, the fact that the researcher has been working in higher education dormitories for 7 years, having sufficient knowledge of the natural environment of the institution and being a direct part of the Pandemic process contributes to the depth of the data to be obtained. In this context, the researcher systematically observed between March 2020 and June 2021 and recorded the observation notes regularly. On the other hand, although the study handled its data through observation, it also has an ethnographic meaning because the researcher works in higher education dormitories.

2.2. Results

2.2.1. Hospital Services in Dormitories

Perhaps the most extraordinary task undertaken by higher education dormitories during the Pandemic period was hospital service. As it is known, due to the insufficient number of beds in many parts of the world, convenient areas such as shopping centers have been turned into hospitals. For example, the 45 thousand square meter exhibition area of Iran Mall, known as the world's largest shopping center, was temporarily converted into a hospital and 3,000 beds were placed. ⁴In Turkey, a similar image can be seen at Atatürk Airport. Pandemic Hospital with 1008 beds built inside the airport is defined as a multi-purpose emergency hospital, and it is stated that the hospital will contribute in the field of epidemic, disaster and health tourism.⁵ On the other hand, in provinces where the number of hospitals and beds is not enough, the first institution that comes to mind to fill this gap was higher education dormitories, and some dormitories were converted into hospitals. For example, Gölcük Dormitory Management in Gölcük has been converted into a hospital due to the Kovid-19 outbreak. The treatment of the patients, whose 14-day quarantine period continued, was carried out in these buildings and their surveillance was carried out here. The fact that the institution is suitable for hospital service is undoubtedly due to the fact that it has a ready-made bed arrangement and is ready for accommodation.

⁴ <https://www.sozcu.com.tr/2020/dunya/iranda-dunyanin-en-buyuk-avmsi-corona-hastanesi-oldu-5701753/>

⁵ <https://www.aa.com.tr/tr/koronavirus/prof-dr-murat-dilmener-acil-durum-hastanesi-kovid-19-yukunu-omuzluyor/1897008>

2.2.2. Quarantine Services in Dormitories

Higher education dormitories served as a quarantine base in the full sense of the word during the Pandemic process. The first quarantine service of the institution was for Umrah travelers returning from the holy lands in the first days of the Pandemic. Citizens who were in Saudi Arabia at the time the pandemic was declared had to undergo a 14-day quarantine period in dormitories due to the possible transmission of the virus. This is the output of the Scientific Committee's recommendations for Turkish citizens who were abroad before and during the epidemic to be kept in quarantine for 14 days if they return to the country (Cited by Yener, Türkoğlu and Yılmaz, 2021: 23). In this context, some dormitories in Ankara and Konya, which were empty due to the pandemic holiday, have been suitable areas for citizens returning from hope. A small number of students currently in the dormitories have been transferred to other dormitories. Approximately 10,000 Umrahs, whose first checks were made at the airport by the health teams, were taken to the disinfected buses and delivered to the dormitories accompanied by an ambulance. Studies on the pandemic period (Kutlu, 2020, İşlek et al., 2020); It is stated that the practice of quarantining those returning from Umrah, as well as those returning from abroad, in dormitories for 14 days is one of the measures taken to prevent the spread of the virus in Turkey. The quarantine service given to the Ummah corresponds to perhaps one of the most difficult processes in the sand. According to a field study conducted with dormitory staff, participants state that they are faced with a situation and job description that they have never experienced before (Duman and Başaran, 2021: 221). As a matter of fact, there were protests in some provinces where the pilgrims did not want to enter the dormitories. The intensity of the arguments increased because the relatives of the pilgrims were also involved in the event, the buildings filled in front of them, or they wanted to see their families. For example, it was reflected in the news that there was a clash between the Umrahists who were placed in dormitories and the police in Konya. In the video footage, it is seen that the Umrah residents who do not want to stay in the dormitory force the doors, and the police force them to stay inside.⁶ Another reason for tension between the dormitory officials and the pilgrims

⁶ <https://t24.com.tr/video/koronavirus-karantinadan-kacmaya-calisan-hacilar-ile-polis-arasinda-arbede-yasandi,26817>

and their relatives during the 14-day quarantine period was the subject of goods, food or clothing that were requested to be delivered to the pilgrims and taken out. In this period, a video that was spread on social media and became the symbol of the process is about the images of an Umrah living in a dormitory. The old Umrah is spitting around and saying, "If I'm sick, you can't put me in prison if I'm going to make you sick too!" in the form of a reaction. In fact, it is possible to establish a link between those who have difficulties in the quarantine process and the act of spitting.⁷ Often, however, spitting on police or officials meant threatening to infect covid-19 against forced detention. Similar images were also found in dormitories. Having difficulties in staying in quarantine, the Umrah spit in the face of the police and homeland security guards.⁸ The fact that most of the pilgrims were old made the process difficult. On the other hand, convincing the young actors of the process and the original owners of the institution fell to the General Directorate of Credits and Dormitories.



Picture 1: (Haberler.com. tr)

⁷ For example, in an incident in Antalya, it was reflected in the news that the person who should have been in quarantine repeatedly spat at the police and used expressions such as "are you scared". <https://www.cumhuriyet.com.tr/haber/covid-19lu-sahis-polise-tukurdu-korktun-mu-korkma-oglum-allahtan-kork-1830693>

⁸ <https://www.birgun.net/haber/umrecilerin-yuzune-tukurdugu-guvenlik-gorevlisi-koronaviruse-yakalandi-iddiasi-295481>

The students, who learned that pilgrims were placed in their rooms, both reacted to the institution and entered into polemics with the Ummah who complained about the dormitory conditions. The main axis of the discussion is about the pilgrim's attitude, which is thought not to act with religious motives, even though he turns from the umrah. In particular, Twitter has been one of the channels where the subject is discussed intensively;

“So they went on a touristic trip to Umrah” (Cemilosko, March 15, 2020).

“These are the types who do their Umrah from a 5-star hotel room, the dormitory does not cut them off... There is an epidemic in the world and you went to Umrah arbitrarily! Well, have a little trouble! Millions of people won't take risks because of your enjoyment (Gece_x, March 15, 2020).

No, the point was they were going to say I came around with their luminous faces, it wasn't his stress. Now they are making excuses to escape from waiting there for 14 days (UAJohn, March 16, 2020).

Umrah pilgrims landed in the country at midnight and were taken directly to the dormitories. A small number of students who stayed in the dormitories the same night had to be evacuated at night. Another reaction of the young people is that they have to evacuate the dormitories quickly when the information that the Ummah will be admitted to the dormitories arrived at midnight.

“They were brought in hastily... There are young children who are hurriedly put in front of the door at midnight for you. You are cleansed of ready sins, sit down where you sit” (AsiyeOnat1, March 15, 2020).

Young people selfishly criticize the elderly. Accordingly, umrahists went to umrah for the sake of Allah, but they acted recklessly about infecting others with viruses. In response to the posts of Ummah criticizing the conditions of the dormitory, the reaction came from the young people, who are the permanent owners of the institution. Another point of discussion that draws attention here is the statements of young people as "If the dormitories are so bad, you should have done charity here instead of giving money to Umrah". The general reaction of the youth has been shaped within the framework of behaviors that would not be expected from an individual who

fulfilled his religious duties. There were many reactions from the world of politics and art to the attitude of the Ummah in this process.⁹

Another quarantine service in the first days of the pandemic is for Turkish workers abroad. Turkish workers were admitted to the country on the condition that they complete the 14-day quarantine period in the higher education dormitories close to the border gates they passed through. Dormitories are the first stop of Turkish workers in Iraq who want to return home even though they were in Iraq at the beginning of the pandemic. In this context, 351 Turkish workers were placed in student dormitories in Kütahya. Kütahya Provincial Directorate has gone through a very arduous process in order to make the guests comfortable in this process. For 351 citizens, each of whom were placed in separate rooms, the officers wore protective clothing and left each meal one by one in front of the doors. In this process, higher education dormitories cooperated with the Governor's Office, Provincial Health Directorate and Turkish Red Crescent, and assumed the role of host in providing the services to the interested parties without any problems. Every day, fever measurements, health checks were made, food, shelter, hot water as well as unlimited wifi service were provided. From time to time, colored squares were also reflected in the press. Since it was the birthday of the Turkish workers in the shelter, the dormitory staff wanted to give a birthday surprise to the citizens in quarantine.¹⁰

⁹ <https://www.sozcu.com.tr/hayatim/magazin-haberleri/polislere-tukuren-o-insanlara-sinem-usludan-sert-tepki/>

¹⁰ <https://www.haberler.com/karantinadaki-3-isciye-dogum-gunu-surprizi-13130629-haberi/>



Picture 2: (www.aa.com.tr)

The people hosted in the dormitories are not just Iraqi workers. With the declaration of the pandemic, Turkish citizens from all over the world, who were sent to their homes or who wanted to return to their homes on their own will, were hosted in the dormitories during the 14-day quarantine period. In this context, workers abroad, business people from all over the world as well as Arabia, students and ordinary citizens were admitted to the country on the condition that they spend the quarantine period in dormitories. According to the statements of the Minister of Youth and Sports, Mehmet Muharrem Kasapoğlu, as a result of the meetings held by the Presidency, the Ministry of Health and the Science Board, dormitories throughout the country have been prepared for those returning from abroad to spend their quarantine. Emphasizing that the citizens of 18 thousand 156 countries are still hosted in the dormitories, the Minister stated that 9 thousand 439 citizens were sent off to their homes, and the dormitories hosted a total of 27 thousand 595 people, including those who stayed and were sent off.¹¹

However, it was not easy to please the citizens who were kept within the four walls. So to speak, the scapegoat of this process was the Credit and Dormitories Institution, and it had its share of anger from the citizens who thought that they were locked up in the country. It is noteworthy that some

¹¹ <https://www.trthaber.com/haber/gundem/47-ilde-3-bin-120-saglik-personeli-yurtlarda-kaliyor-473817.html>

guests used the analogy of "like a barn" for the dormitories while forcing the officials to leave the dormitories. In this case, the young people, who are the real owners of the institution, took the floor and expressed their reactions on social media. In the face of the guests' statements that the dormitories are like barns, the young people stated that they lived there and that they had a residence throughout their education. In this process, the body of the discussions on virtual platforms between the original owners of the institution and the guests was shaped around the polemic of "like a barn". To put it more clearly, the youth perceived these words as an insult directed at them.¹²



Picture 3: (<https://indigodergisi.com/2020/03/ogrenci-yurtlarinda-karantinaya-alinan-vatandaslardan-tepki-ahir-burasi-ahir/>)

“No, it's a shame, this is ingratitude. It's an insult to those who stay there (benmarisenhani, March 15, 2020).

“Let them not be unfair, I have stayed in 4 KYK's in 4 different provinces of the state, what is the barn! Dormitories are fine, not a 5-star hotel, I wonder what they were waiting for” (hemtugbahemsire, March 15, 2020).

“Our pups stay in those dormitories for education. They also do not like places to enter the country with their viruses. They call the dormitories

¹² <https://onedio.com/haber/umreden-donunce-ogrenci-yurdunda-karantinaya-alinan-vatandasin-sozleri-sosyal-medyanin-gundeminde-ahir-burasi-899859>

where our children stayed for years as barns. It's not a barn... Anyway... You'll be in Quarantine from Umrah. The country will not be sick because of you” (yelda1, March 15, 2020).

“The youth of this country live the future in what you call a barn. And they are not oxen like you. It's like they live in the palace, on the construction site”(cemtopal55, March 15, 2020).



Picture 4: (<https://twitter.com/bilalcecin1/status/1239245702603177993>)

“... This is how Gölbaşı KYK YURDU was scribbled by the shameless person who said, “... the barn, this is the barn” (bilalcecin1, March 15, 2020)

Other than the original owner of the dormitories, the other guests were the guards. After the Kovid-19 test of 113 convicts, detainees and 8 guards in the Central Prison was positive, the guards demanded a dormitory to stay until the epidemic ends in order to prevent the virus from spreading to their families.¹³ The demands of the guards were met. In addition to the guards working in Nicosia, higher education dormitories in many provinces in Turkey were allocated to guards. The guards were worked in shifts, they were

¹³ https://www.kibrispostasi.com/c35-KIBRIS_HABERLERI/n397067-koronavirus-cezaevine-sicradi-gerekli-tedbirler-alinmayinca-gardiyanlar-is-birakti

first taken to the wards vacant from the prisoners so that they would not bring the virus to their homes, and when they had to start working again, they were sent to the dormitories to determine whether they were infected or not.

During the Pandemic process of the Ministry of National Defense, the first solution proposal for the privates and contacts with positive Kovid-19 test was again higher education dormitories. For example, in the 58th Infantry Regiment in Burdur, 33 soldiers with positive covid-19 tests were taken for treatment, and 221 contacts who were in contact were detained in dormitories.¹⁴ The point that draws attention here is that although the TSK is an institution with beds, when it comes to quarantine, higher education dormitories are primarily used. According to a field study examining the Pandemic process of the dormitories in Kocaeli, it is stated that the dormitories face the risk of workforce loss and contamination, serve guests from abroad, health and military personnel, and the personnel are adversely affected during this period (Duman and Bařaran, 2021).

Turkey has followed an extremely possessive policy towards its students and citizens abroad in the first days of the pandemic. Before the pandemic, thousands of students who wanted to return home from many countries such as England, Ireland, Iraq, Poland, Switzerland, Italy and Egypt were brought to the dormitory as a result of intense efforts. Moreover, in many countries of the world, especially in Sweden and Bangladesh, our citizens, who had a positive Covid-19 test, were returned to the country via airplane ambulances. According to the statements of Foreign Minister Mevlüt Çavuşođlu, it was stated that 33 citizens who could not receive health services in their countries or whose situation was urgent were brought to the country by ambulance plane. On the other hand, nearly 70 thousand Turkish citizens from 114 countries were brought to our country and subjected to 14-day quarantine.¹⁵ In this context, it is revealed that higher education dormitories serve a wide audience.

¹⁴ <https://www.dha.com.tr/yurt/burdurda-33-askerde-koronavirus-tespit-edildi-221-asker-karantinaya-alindi/haber-1781914>

¹⁵ <https://www.aa.com.tr/tr/turkiye/disisleri-bakani-cavusoglu-114-ulkeden-70-bine-yakin-vatandasimizi-ulkemize-getirdik/1842524>

2.2.3. Those Who Break Quarantine Rules- Security Services

It is possible to count another extraordinary service provided by the institution in this process, in a way, among the functions of the security forces. As it is known, whether the people who have positive Kovid-19 test and their contacts comply with the rule of staying at home during the quarantine are inspected by the filiation teams. Citizens who came for inspection but could not be found in their homes were fined at the beginning of the Pandemic. However, later on, it was decided that these people would spend the quarantine period in the higher education dormitories affiliated to the General Directorate of Credits and Dormitories, as they increased the spread of the virus and endangered public health. In this context, citizens who could not be found in the quarantined residence were brought to higher education dormitories by the police and were taken under control. In the decision taken by the governors of the provinces, it was stated that those concerned would not only be under surveillance in the dormitories, but also that criminal complaints would be filed against them in accordance with Article 195 of the Turkish Penal Code and their dormitory expenses would be collected from them.¹⁶ On the other hand, the news about the famous social media phenomenon Enes Batur breaking the quarantine rules and being placed in dormitories were reflected in the press, and quite colorful images emerged.¹⁷ As a matter of fact, the fan base that came in front of the İyimaya Dormitory, where Batur was staying, chanted slogans for the famous phenomenon and tried to make their voices heard.¹⁸

In this practice, the general distress experienced by the dormitories was experienced with the citizens who forced the officials to leave the dormitory. Citizens evaluated the time they were in the dormitories as if they were imprisoned and conveyed their reactions to the officials. The existence of disadvantaged groups such as substance addicts or the homeless among

¹⁶ <https://www.milliyet.com.tr/gundem/valilikler-art-arda-duyurdu-karantina-kurallarini-ihlal-edenler-yurtlara-yerlestirilecek-6302593> Erişim Tarihi 20.12.2021

¹⁷ <https://www.haberturk.com/son-dakika-koronaviruse-yakalanan-youtuber-enes-batur-karantinadan-kacti-2806964>

¹⁸ <https://www.hurriyet.com.tr/gundem/karantina-ihlali-yapan-enes-batura-hayranlari-boyleslendi-41618447>

citizens and requiring treatment is among the factors that make the implementation difficult.

2.2.4. Accommodation Services for Healthcare Professionals

The occupational group most affected by the pandemic period is undoubtedly healthcare workers. Healthcare workers have both been the direct target of a deadly virus and have come face-to-face with carrying this virus to their families. Health workers who have small children, have chronic diseases or have elderly family members in their families have repeated at every opportunity that they do not want to carry the Kovid-19 microbe they received from the hospital to their homes. So much so that in this process, the images of mother-child or father-child, many examples of which were reflected in the press and did not meet for days, hurt the conscience of the whole society.¹⁹ In this period, the need for health workers to stay away from home, and the problem of accommodation came to the fore. In this context, the first institution that comes to mind in order to eliminate the accommodation problem of the employees has again been the higher education dormitories. According to the statement made by the Minister of Youth and Sports, Mehmet Kasapoğlu, as of April 2020, 3,120 healthcare professionals are hosted in 73 dormitories in 47 provinces. In his speech, the Minister emphasized that dormitories are one of the most important centers in the fight against the coronavirus epidemic. On the other hand, all kinds of needs of the guests were met, and the attendants wore masks, glasses and overalls and served three meals a day, tea and fruit in the rooms. It is also stated that the guests were sent music events, sports equipment for them to do sports, 310 thousand books, and memory books called “Life is in Dormitory” for them to keep a diary.²⁰

The institution asked the Health workers to vacate the dormitories as of June 14, 2020, and cited the preparation of buildings for students in the

¹⁹ <https://www.hurriyet.com.tr/video/doktorun-cocuguna-sarilamadigi-goruntuler-yurek-burktu-41500569> ,
Sağlıkçı Anne Baba Bir Aydır Göremediği Çocuklarına Kavuştu
<https://www.youtube.com/watch?v=-vldwr0W2WQ>

²⁰ <https://www.trthaber.com/haber/gundem/47-ilde-3-bin-120-saglik-personeli-yurtlarda-kaliyor-473817.html>

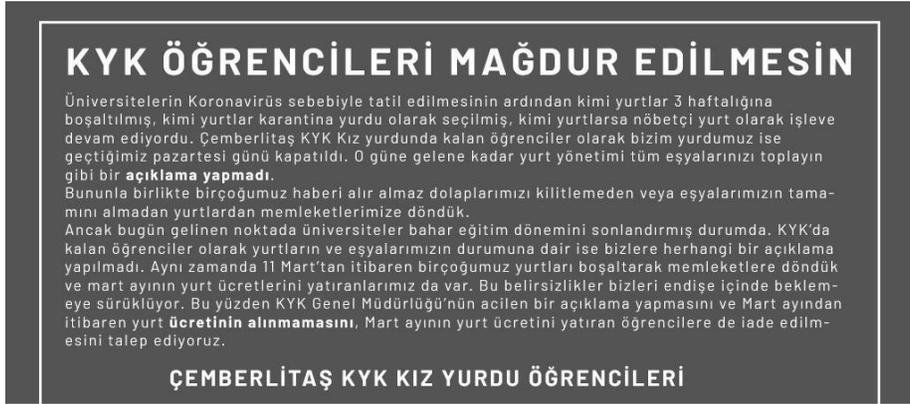
new term as a reason. Indeed, the institution carries out the maintenance, repair, painting and whitewashing of the dormitories during the summer months and prepares the buildings for the students to be admitted in September. However, the decision of the institution to evacuate the guests caused the reactions of the healthcare professionals, and it was stated that at least the employees in the Covid-19 services should stay.

2.2.5. Seven Surety Services for Student's Goods

One of the biggest problems experienced by higher education dormitories during the pandemic process has been towards student belongings. With the holiday of the universities on March 12, 2020, the dormitories decided to close and they conveyed this situation to their students. The students were insistently informed that they should take their belongings, that they would enter an uncertain period and that it would not be known what the process would bring. However, the majority of the young people did not anticipate that the process would be this long and left the dormitory leaving their belongings exposed. However, things did not go as planned and the closure period, which took almost a year and a half, began. In the meantime, the communication traffic between the students and the dormitory staff regarding the fate of the belongings has started. Under ordinary conditions, students who vacate the dormitory in June, when the institution is closed, are required to leave the dormitory by taking all their belongings with them. As a matter of fact, the institution does not accept the responsibility of the goods and does not provide storage services when the student returns to his hometown.

The fact that many dormitories are used for purposes such as the quarantine zone, hotel or hospital described in detail above, further complicated the situation. As a matter of fact, in this case, the source of the problem was how to protect the belongings inside, since it was not possible for another officer to enter the room until the quarantine was over. The loss of some items in this process has caused the problem to grow. The solution that the dormitories found to this situation was to pack the items in the rooms under protection or to lock them under the plinth. On the other hand, a picture emerged in which the students reacted intensely due to the images of some irregular items that fell on the social media. The anxiety and reactions of the

students who learned that their dormitory is a quarantine dormitory increased. Information spread through social media that a group of students used their belongings by guests who were taken to dormitories for quarantine. In order to protest the situation, some support accounts were opened on Twitter and hashtag studies were carried out.



Picture 5: (https://twitter.com/kyk_dynsm)

Dormitory officials took videos of the belongings and shared them with the students in order to convince the students that their belongings are safe. It should be noted that in this process, very interesting demands emerged. There were colorful conversations between students and dormitory staff who wanted their flowers to be watered, who wanted their teddy bear to be shipped because they couldn't sleep without their teddy bear, who wanted a picture of some of the books in the room to prepare for the exams, or who wanted to confirm whether their red sweater was left in the dormitory. In this context, it is possible to say that one of the non-educational functions of the dormitories in this period was seven safe services.

CONCLUSSION

The General Directorate of Credits and Dormitories has been serving since 1962 to find a solution to the housing problem of university students. Higher education dormitories within the body of the institution normally meet the accommodation, scholarship and loan needs of university students. During the pandemic process, there have been radical changes in the core of the

service of many public institutions and organizations. One of these institutions is higher education dormitories. With the decision to close the universities on March 12, 2020, the dormitories also decided to close, but this date corresponded to the period when a very unusual process started for the institution. The dormitories, which were closed to student service, started a series of activities to take on the workload of other institutions. The most risky task undertaken by the dormitories during this period was the hospital service. In some provinces with insufficient number of hospitals and beds, dormitories were converted into hospitals and used for COVID-19 services. While hospitalization rates were higher at the beginning of the pandemic, the practice was adopted to keep only those with severe disease under observation in the hospital in the later period. During this period, the need for hospitals and beds increased, and it was thought that this gap could be filled with dormitories. As a matter of fact, the Ministry of Youth and Sports has repeatedly warned the dormitory administrations to be prepared for a possible hospital transformation. As a matter of fact, at the beginning of the Pandemic, the dormitories were almost sure that they would eventually turn into hospitals. However, in the following period, the practice of sending those who survived the disease mildly to their homes and spending the 14-day quarantine period at home reduced the need for beds and hospitals. However, in this case, the issue of inspecting those who need to stay at home during the quarantine period has emerged. Dormitories, which turned the corner of being a hospital, became the places where those who broke the quarantine rules were taken under control. Those who were found to have violated the quarantine rules during the inspections carried out by the filiation teams were given a fine, an administrative investigation as well as spending the remaining quarantine period in the dormitory. However, dormitories as the enforcement units of the punishment became the face of the reaction.

The institution's quarantine service was not limited to this. In the first days of the pandemic, pilgrims who are still in the holy lands were quarantined directly in the dormitories after entering the country. This process is one of the most painful periods of the institution. As a matter of fact, the pilgrims did not want to stay in the dormitories and there were very tense processes between them and the dormitory officials. Law enforcement officers

were also involved in the incident, and the images of the pilgrims forcing the dormitory doors and the security forces trying to stop them were reflected in the press. On the other hand, dormitories have been the subject of the prerequisite for the admission of thousands of citizens of countries abroad at the beginning of the Pandemic. Workers in Iraq, Turkish business people in Arabia, citizens who have not been treated in the country they are in even though the covid-19 test is positive, Turkish citizens who are all over the world for education or travel have been admitted to the country on the condition of staying in dormitories for 14 days. Again, in addition to the guards in the prison, the privates under arms in the TAF have completed their quarantine periods in the dormitories. Another non-educational function of the institution was hotel services. Health workers working in Covid-19 services did not want to go to their homes after the shift in order not to carry the virus to their families. Higher education dormitories provided accommodation services to health workers in this process. Another unusual function of the institution is to preserve student belongings. With the closure of universities, students who left the dormitories without taking their belongings got into arguments with the dormitories about the fate of their belongings as the dormitories were used for quarantine one by one. In this process, the relationship between the original owners of the institution and the dormitories was based on the preservation of the belongings.

Undoubtedly, the reasons such as being ready for accommodation, having high-standard rooms and services, and having many arrangements such as hot water and heating in the cafeteria are indisputable in this kind of use of the dormitories. However, the obligatory silent actors of the process have been the dormitory personnel. Dormitory staff could not go to their homes for days and had to carry out many services such as food, shelter, cleaning, food and even personal shopping for positive or contact groups. The following point should be emphasized here. This time, dormitories have become the homes of healthcare professionals, which they do not go to in the evening to avoid infecting the virus. The same is true for guards and privates. In this context, the dormitory workers faced a situation they had not experienced before and became the officers of the buildings where the virus was brought in the evening. As a matter of fact, it was observed that the cases of Kovid-19 increased in the employees of the institution in this process. On

the other hand, the staff of the institution, so to speak, is the direct address of the reactions of the guests who are brought to the dormitory involuntarily or even compulsorily. As a matter of fact, dorm staff are almost informal guards for all guests who want to leave the dormitory and think they are being held by force. In this case, the duty of absorbing the reactions fell to the employees of the institution who work in isolation overalls. Dormitory employees, who could not express their reactions or share the troublesome process they experienced due to being civil servants, were under a service obligation that they had never experienced before. Especially the high average age of the pilgrims and the expected respect for returning from the pilgrimage made the process quite complicated. This segment itself and their relatives have been the group that the institution had the most problems with. On top of that, this mass is a mass whose practice of action has not been determined within the framework of the regulations and respects its age more than the institution against it.

When the table is read holistically, it is seen that higher education dormitories undertake many non-educational functions and share the workload of institutions during the Pandemic process. As a matter of fact, it is seen that the institution carries out many duties in the fields of hospital, accommodation, justice affairs, security and military apart from education.

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CHAPTER 6

**THE EXISTENTIAL CRISIS OF PRINT MEDIA WITHIN THE
CONTEXT OF THE COVID-19 PANDEMIC**

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INTRODUCTION

Traditional journalism has long been passing through turbulent times, witnessing almost all usual ways of collecting, producing, reporting, and reception of news under constant changing. Ten years before, a famous French intellectual and scholar described the ongoing change in the media ecology as follows: “*The media planet is experiencing trauma on an unprecedented scale. The impact of the ‘Internet meteorite,’ similar to that which wiped out dinosaurs, is causing a radical change in the entire ‘media ecosystem’ and the mass extinction of print press*”(Ramonet, 2011). Since that time around, a very hot discussion on the future of print media has been continuing worldwide. The COVID-19 pandemic has further fueled the ongoing debate, as newspapers’ circulations and advertising revenues have gone dropping ominously faster nowadays than before. This article aims to give a snapshot of this debate and discuss the chances of survival, if any, of print media facing a devastating challenge of digitalization taking place in the media ecosystem.

1. TWIN CRISES OF PRINT MEDIA

According to Barthelemey et al. (2011), the newspaper industry has faced two simultaneous crises stemming from the decline in newspapers' circulation and advertising revenues and the rise of widely available and free online news content. The "Internet meteorite" is the triggering factor of these twin crises graphically shown below.

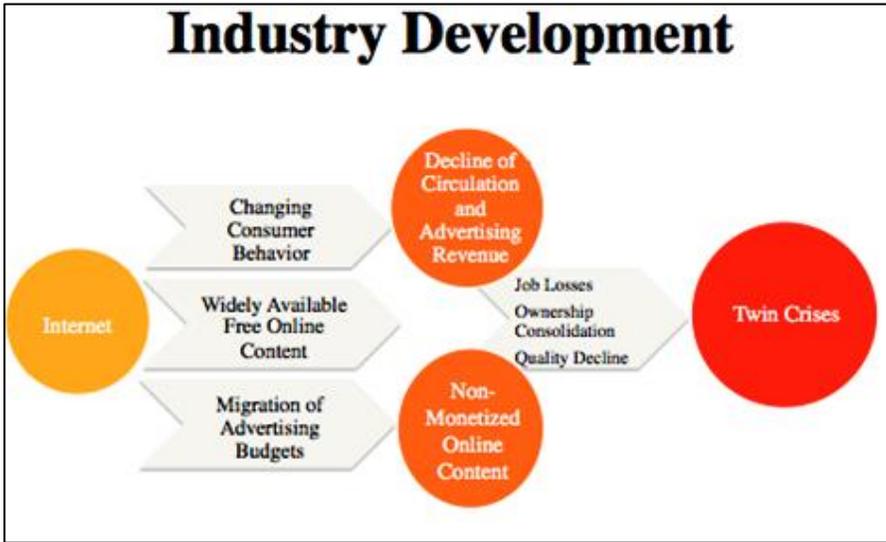


Figure 1: Internet impact on the media industry and its results, leading to the twin crises (Barthelemy, Matthew, Tim, Adrienne, & Katerina, 2011)

It is not a new phenomenon that newspapers circulations steadily decline in most parts of the world. However, the increasing use of the Internet changes news consumer behaviors. People satisfy information needs with online news channels such as news portals, Internet journals, blogs, and social media. In sharp contrast with traditional print newspapers, they could easily choose their favorite news themes, called “personalizing news consumption.” Moreover, the digitalization of news reporting allows them to get continuously updated news during the day. In other words, new technologies enable and encourage consumers to continuously look for new information and establish personalized connections among diverse media content. This process also refers to media convergence, as it is related to changing media practices. How people are using media is directly linked to complex, multi-layered interactions between traditional communication cultures and new online, mobile media (Dwyer, 2010). Thanks to advanced mobile devices, people today have an instantly accessible and highly personalized world of information, culture, and entertainment in the palm of their hands and their fingertips (McQuail & Deuze, 2020). The new media provides content that is not significantly different from legacy offline newspapers and broadcasting. Today many people read news articles online instead of in the newspaper, and

most households choose only one of the pay broadcasting platforms such as cable television, satellite broadcasting, or IPTV (Shinjae & Minsoo, 2016). This is generally happening on the news consumers' side in our societies. On the other side, *“the practices of journalism are shifting from a relatively closed system of news creation—dominated by official sources and professional journalists—to a more open system in which news emerges from the public observations, data, and flows of information and commentary”* (Van Der Haak, Parks, & Castells, 2012). This is what the new media ecosystem is called, and it gives way to different types of news providers working in a hybrid system that includes print, radio, television, blogs, and various social media platforms such as Twitter, Facebook, and Instagram. The new media ecosystem results from "mediamorphosis," a term coined a few decades ago (Fidler, 1997) that indicates the changing process of the old media trying to adapt itself to digitalization. The first remedy was websites, and the second was apps for mobile devices.

2. MOBILE DEVICES: GAME CHANGER

The Internet has forced print media to disseminate the news through websites. In the beginning, it was a well-considered reply to the assault of the Internet into the legacy media field. However, with the mobile phones getting "smart," newspapers feel it necessary to install applications (apps) on them for distributing their content independently from websites.

Customers nowadays can choose among three channels for consuming content: offline, online, and mobile. They may also use more than one channel. Publishers need to determine whether it is economical to meet this demand and serve each channel (Winter & Alpar, 2018). It could be argued that the survival chance of offline media is getting critically weaker in this hybrid media ecosystem due to fast-developing mobile technologies and the younger population as especially “the Generation Z that has never been offline.” The younger generations spend less time reading print media contents, causing weak demand on them, and consequently declines in the newspapers circulations. On the other hand, it is observed that young people tend to distrust politicians and the legacy media nowadays. They develop cynical and skeptical attitudes about politics and the media and become “news grazers” instead of regular news consumers (Spyridou & Veglis, 2008). It

means that they are more inclined to use social media for communication, entertainment, and information through mobile devices.

3. THE RISE OF CITIZEN JOURNALISM WITH THE ADVENT OF MOBILE DEVICES

According to (Picard, 2014), the journalism practice of the twentieth century was determined by institutional bias in news coverage due to the beat system under which the editorial staff felt pressure to focus on government agencies, educational and financial institutions. As a result, much of the news was based on official statements obtained at press conferences. He concludes that social lives, social histories, ordinary individuals, and the activities of day-to-day life tended to fall outside traditional beats, be ignored, or gain only occasional attention from professional journalists. Today, digital technologies enable ordinary people to produce the news they are interested in much more than "official" news collected from institutions by professional journalists. This begets a different kind of journalistic practice called "citizen journalism." People through mobile phones implement this new style of reporting over digital platforms such Facebook, Twitter, Instagram, and Youtube. Although this situation shakes the foundations of the journalism profession (Atton & Hamilton, 2008), it indicates that a positive picture is being formed from the citizens' perspective. Journalism is being done increasingly by nonprofessional journalists. This development also has a promising dimension in terms of democracy. Thanks to this kind of journalism, ordinary citizens have the opportunity to directly participate in the construction of discourse affecting politics in the public sphere.

On the other hand, professionals working for the legacy media also use digital devices. *"Journalists can use smartphones and tablets to access legacy and social media news reports, use them in turn as news sources; respond to them and upload their own reports and/or post comments. Technologically (...) making 'news on the move' is a reality"* (Franklin, 2014). It suggests that mobile devices confirm their role in the today's media ecology as a dominant game changer.

4. THE OVERALL SITUATION OF TODAY'S PRINT MEDIA

Rasmus Nielsen, the director of Reuters Institute for the Study of Journalism, underlines the ongoing digital impact on the media in the foreword to Digital News Report of 2021 as follows: *“The Coronavirus pandemic has exacerbated many of the long-term trends we have documented over the past decade especially the move to a more digital, mobile, and platform-dominated media environment. Developments this year put further pressure on the business model of many traditional media”* (Newman et al., 2021).

Actually, the media companies have restructured their business model for the last two decades of this century due to globalization and digitalization. Media convergence was thought to be a way out of going downwards. COVID-9 pandemic caught the media industry in the transformation process and put it in a dire strait. Represented lockdowns worldwide forced the industry to search for new business models and decisions. It seems that media convergence as cross-media integration is high on the agenda once again.

On the cost side, print media institutions feel the necessity of reducing the collection, develop and delivery of news materials as much as possible in order to resist reverse conditions that are already existing but also exacerbated by the COVID-19 pandemic. For this aim, reconstructing the editorial process and newsroom activities seems a viable solution. However, this is not a painless process for journalists, as the mysterious and appealing term of reconstruction means losing jobs. A survey carried out in 77 countries (including Turkey) by the International Federation of Journalists (IFJ) between 26-28 April 2020 indicates that two-thirds of staff and freelance journalists in these countries have suffered pay cuts, lost revenue, job losses, canceled commissions or worsening working conditions (Collective, 2021).

CONCLUSION

This article has aimed to scan the latest developments in the print media in the context of the COVID-19 pandemic that is still far from entering the decline period. It suggests that the existential crises of the print media deepen in the last one and a half years of the pandemic, advertisement revenues and circulation of the newspapers continuously drop, and therefore journalists lose their jobs as well as their vested interests. On the other side of the coin, the digitalization of the media environment bears its fruits in the advantage of citizens, paving the way to a more lively digital news production by both institutions and individuals. As a result, it seems that people worldwide will witness more digitalized and personalized news production processes after the pandemic days have passed.

On the chance of the survival of the print media that is here problematized, it could be said that the new media ecology does offer quite a bleak future for legacy journalism. If it finally exists in the middle term, it could be only in a mutated form as long as it manages to fully adapt itself to the digital life of our times. Even then, we will be facing a “variant” that needs to be named accordingly.

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CHAPTER 7

**EMPIRICAL ANALYSIS OF THE RELATIONSHIP BETWEEN
CONSUMER PRICE INDEX (CPI) AND DOMESTIC
PRODUCER PRICE INDEX (D-PPI) VARIABLES IN THE
TURKISH ECONOMY**

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INTRODUCTION

Continuous increases in the general level of prices in a country, at a level that will adversely affect the macroeconomic balances, appear as inflation. The general price increase in consumer and producer goods baskets can be calculated and monitored separately. Many imbalances in the supply and demand side of the economy can be effective in the increase in the general level of prices. On the supply side, increases in input prices and shortages feed cost inflation, while on the demand side, the inability of supply to respond to population growth and income increases can feed demand inflation.

In this study, the interaction between the CPI and D-PPI indices for the Turkish economy was analyzed by econometric methods.

The Turkish economy has suffered from chronic inflation for many years. According to the severity of inflation, it can deepen the deterioration in income distribution due to the destruction of the purchasing power of segments of society with fixed incomes. On the other hand, chronic inflation can negatively affect investments and resource allocation by causing deterioration in pricing behaviors and expectations, thus affecting social welfare negatively. Although inflation targeting, which started after 2002 in the Turkish economy, made significant contributions to reducing inflation, an upward trend and volatility began to be observed again, especially after 2018.

1. LITERATURE

The literature on the relationship between CPI and D-PPI indices in the Turkish economy is given in Table.1. Accordingly, the general findings in the literature are that there is a causality from PPI to CPI. Different results are observed according to periods and techniques.

Table.1 Literature on the Relationship between CPI and PPI

Author(s)	Scope	Sonuçlar
Zortuk (2008).	The relationship between CPI and PPI was analyzed for 1986:1-2004:12 in Turkey.	In the study, a unidirectional causality relationship was found from CPI to WPI.
Saraç ve Karagöz (2010).	In the study, the relationship between CPI and PPI was analyzed between the period 1994:01-2009:12..	Both short- and long-term relationships from PPI to CPI were determined in the study. In the study, it has been determined that inflation in Turkey is cost-push in the short and long run.
Tarı vd (2012)	The relationship between CPI and PPI was analyzed for 1987:1-2008:4 in Turkey.	In the study, a causal relationship from PPI to CPI was determined.
Abdioğlu, Z., & Korkmaz, Ö. (2012).	The relationship between CPI and PPI for 2003-2012 in Turkey was analyzed.	In the study, a bidirectional causality relationship was determined between CPI and PPI.
Erdem ve Yamak (2014)	The relationship between CPI and PPI was analyzed for 1987-2012 in Turkey.	In the study, a decrease in the pass-through from the producer price index to the consumer price index was detected in the study.
Saatçioğlu ve Karaca, (2017).	The relationship between CPI and PPI for 2005-2016 in Turkey was analyzed.	In the study, a causal relationship from PPI to CPI was determined.
Terzi ve Tütüncü (2017).	The relationship between CPI and PPI for 2010-2016 in Turkey was analyzed.	In the study, a bidirectional causality relationship was determined between CPI and PPI in the short and long term..
Öner (2018)	The relationship between CPI and D-PPI was analysed for 2005-2018 in Turkey.	In the study, it was determined that CPI was more affected by sub-inflation items when compared to D-PPI.

3. EMPIRICAL ANALYSIS

3.1. Data and Method

In this study, the interaction between CPI and D-PPI indices for the Turkish economy for the period 2010:01-2021:11 was analyzed using time series econometric methods.

While examining the relationship between the variables, first of all, the stationarity levels of the variables were examined with unit root tests. Then, the long-term relationships between the variables were examined with the Johansen cointegration test and VECM techniques. The short-term causality relationship between the variables was handled with the Granger causality test.

Charts for CPI and D-PPI indices are given in Figure.1. Accordingly, volatility has increased for the variables after 2018.

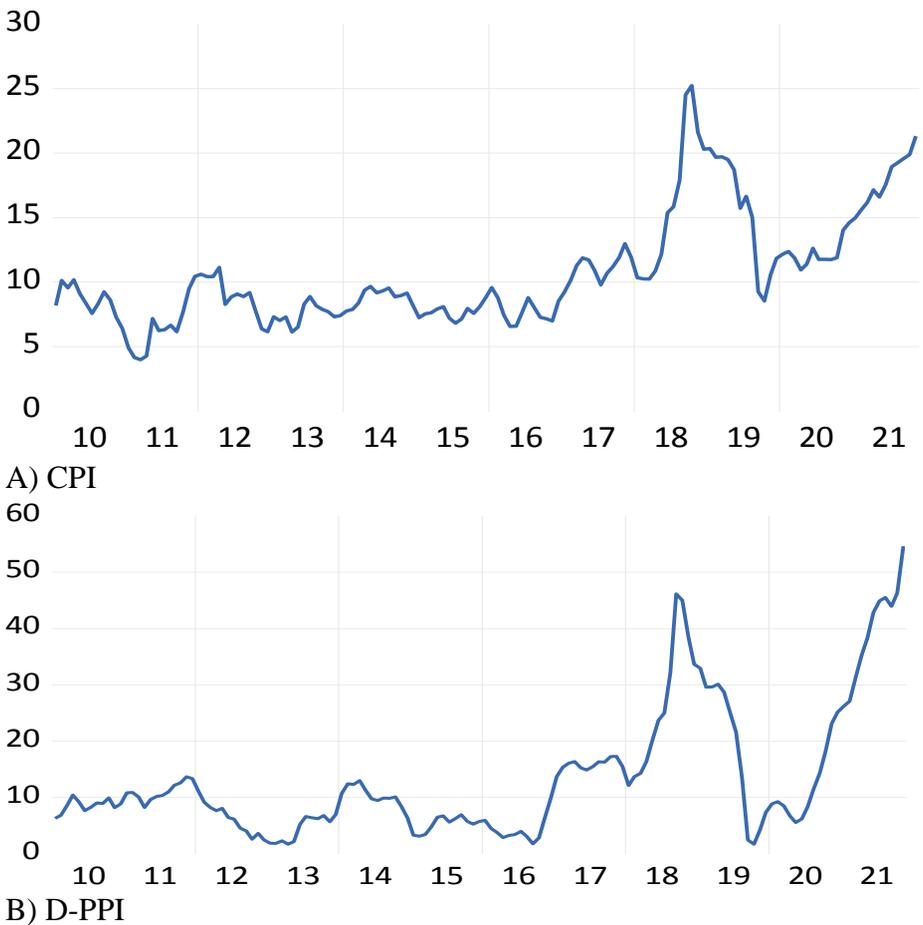


Figure 1. Charts for CPI and D-PPI Indices (2010:01-2021:11, Annual, %)

Descriptive statistics (2010:01-2021:11, Annual, %) for CPI and D-PPI are given in Table.2. Accordingly, while the average of CPI was 10.68% on an annual basis for this period, the D-PPI was 13.43% on an annual basis.

Table.2. Descriptive Statistics for CPI and D-PPI (2010:01-2021:11, Annual, %)

	CPI	D-PPI
Mean	10.679	13.430
Median	9.240	9.630
Maximum	25.240	54.620
Minimum	3.990	1.700
Std. Dev.	4.333	11.523
Skewness	1.266	1.601
Kurtosis	4.043	4.909
Jarque-Bera	44.685	82.808
Probability	0.000	0.000
Sum	1527.150	1920.470
Sum Sq. Dev.	2665.999	18855.180
Observations	143.000	143.000

3.2. Analysis of Empirical Results

ADF unit root test results for CPI and D-PPI indices are given in Table.3. Accordingly, the CPI and D-PPI indices are not stationary at the level (Prob>0.01), but are stationary at the first difference (Prob<0.01).

Table.3. ADF Unit Root Test Results

A) Unit Root Test Results for Level			
		LCPI	LD-PPI
With Constant	t-Statistic	-1.404	0.100
	Prob.	0.579	0.965
With Constant & Trend	t-Statistic	-3.168	-1.013
	Prob.	0.095	0.938
Without Constant & Trend	t-Statistic	0.350	0.908
	Prob.	0.785	0.902
B) Unit Root Test Results for First Differences			
		d(LCPI)	d(LD-PPI)

With Constant	t-Statistic	-8.743	-6.861
	Prob.	0.000	0.000
With Constant & Trend	t-Statistic	-8.799	-7.066
	Prob.	0.000	0.000
Without Constant & Trend	t-Statistic	-8.722	-6.774
	Prob.	0.000	0.000

Notes:

a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1% and (no) Not Significant

b: Lag Length based on SIC

c: Probability based on MacKinnon (1996) one-sided p-values.

Null Hypothesis: the variable has a unit root

Since the CPI and D-PPI indices are not stationary at the level, their long-term relationships are analyzed by cointegration.

In Table.4. the lag length of the VAR model is given according to the criteria. Accordingly, the SC criterion shows 2 lags, while the others show 3 lags.

Table.4. VAR Model Lag Order by Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-827.0464	NA	519.5543	11.92873	11.97095	11.94588
1	-502.8907	634.3190	5.188412	7.322168	7.448836	7.373643
2	-476.2551	51.35499	3.746358	6.996476	7.207589*	7.082267
3	-468.6833	14.38102*	3.559071*	6.945083*	7.240642	7.065190*
4	-465.7397	5.506017	3.614277	6.960283	7.340287	7.114706

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

In Table.5, the stability condition of the VAR model is given. Accordingly, VAR satisfies the stability condition

Table.5 VAR Model Stability Condition

Root	Modulus
0.999063	0.999063
0.897542	0.897542
0.182222 - 0.419252i	0.457140
0.182222 + 0.419252i	0.457140
0.248642 - 0.233470i	0.341073
0.248642 + 0.233470i	0.341073

No root lies outside the unit circle.
 VAR satisfies the stability condition.

LM autocorrelation test results for VAR model residuals are given in Table 6. Accordingly, there is no autocorrelation in the residue series at the 1% significance level.

Table.6. LM Autocorrelation Test Results for VAR Model Residues

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	3.788122	4	0.4354	0.950282	(4, 260.0)	0.4354
2	5.669637	4	0.2252	1.427426	(4, 260.0)	0.2252
3	6.442247	4	0.1685	1.624356	(4, 260.0)	0.1685

Null hypothesis: No serial correlation at lags 1 to h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	3.788122	4	0.4354	0.950282	(4, 260.0)	0.4354
2	11.11175	8	0.1954	1.402756	(8, 256.0)	0.1955
3	22.23062	12	0.0350	1.897389	(12, 252.0)	0.0351

*Edgeworth expansion corrected likelihood ratio statistic.

The Johansen Cointegration Test Result is given in Table.7. Accordingly, Trace and Eigenvalue statistics show a cointegration equation.

Table.7. Johansen Cointegration Test Result

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.116423	18.89987	18.39771	0.0425
At most 1	0.011160	1.571141	3.841465	0.2100
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.116423	17.32873	17.14769	0.0471
At most 1	0.011160	1.571141	3.841465	0.2100
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Table.7. The result of Fully Modified Least Squares (FMOLS) is given. Accordingly, the coefficient of the D-PPI equation in the long-term equation is statistically significant and affects CPI in the same direction. Cost inflation is reflected in the CPI.

Table.7. Fully Modified Least Squares (FMOLS) Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D-PPI	0.288323	0.027217	10.59353	0.0000
C	4.738803	0.513683	9.225141	0.0000
@TREND	0.029823	0.007641	3.903117	0.0001
R-squared	0.847028	Mean dependent var		10.69690
Adjusted R-squared	0.844827	S.D. dependent var		4.343217
S.E. of regression	1.710879	Sum squared resid		406.8680
Long-run variance	9.187411			

Table 8. The result of VECM Granger Causality/Block Exogeneity Wald Test is given. Accordingly, while the D-PPI variable is the Granger cause of CPI in the short run, the reverse is not valid.

Tablo.8. VEC Granger Causality/Block Exogeneity Wald Test Sonucu

Dependent variable: D(CPI)			
Excluded	Chi-sq	df	Prob.
D(D-PPI)	17.98870	2	0.0001
All	17.98870	2	0.0001

Dependent variable: D(D-PPI)			
Excluded	Chi-sq	df	Prob.
D(CPI)	3.556016	2	0.1690
All	3.556016	2	0.1690

4. CONCLUSION

In this study, the interaction between the CPI and D-PPI indices for the Turkish economy was analyzed by econometric methods. According to the results of the study, long-term and short-term relationships were found between CPI and D-PPI indices. According to the empirical results, the D-PPI cointegration equation coefficient is statistically significant and affects CPI in the same direction. Cost inflation is reflected in the CPI. VEC Granger Causality/Block Exogeneity Wald Test result is given. Accordingly, while the D-PPI variable is the Granger cause of CPI in the short run, the reverse is not valid.

According to the empirical results, increases in D-PPI also affect CPI in the same direction. Accordingly, increases in cost inflation also affect CPI in an upward direction. It is important that input costs are controllable in ensuring price stability.

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CHAPTER 8

**TREND ANALYSIS FOR THE EFFECTS OF THE COVID-19
PANDEMIC ON THE FINANCIAL STRUCTURE OF THE
ENERGY SECTOR IN TURKEY**

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INTRODUCTION

The Covid-19 Pandemic continues to adversely affect national economies on the one hand and public health on the other. In order to minimize the negative effects of the Covid-19 Pandemic, governments have tried to implement health and economic policies together.

The success of economic and health policies differs according to country conditions and policy components. The intensity of economic activities also affects the intensity of energy use.

In this study, the effects of the Covid-19 Epidemic on the financial structure of the energy sector in the Turkish economy will be analysed with the trend analysis method.

1. THE EFFECTS OF COVID-19 PANDEMIC ON THE ECONOMIC ACTIVITY AND ENERGY DEMAND

The degree of impact of the Covid-19 Pandemic on economic activities also affects the intensity of energy use at the same rate. Energy use also varies according to the intensity of the measures taken by countries to protect public health.

Figure.1.1. shows Annual rate of change in world GDP 1990-2021. In 2020, the rate of contraction in the world economy approached 4%. In 2021, the slowdown of the course of the epidemic with vaccination revived economic growth and energy use.

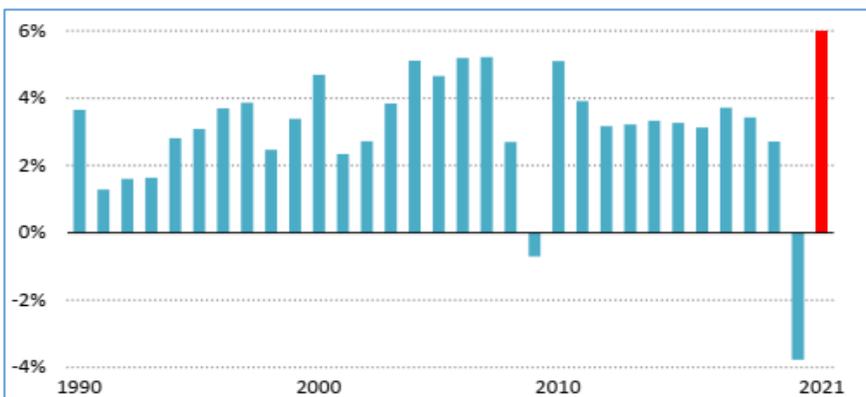


Figure.1.1. Annual rate of change in world GDP 1990-2021

Source: IEA. Global Energy Review 2021

Figure.1.2. shows evolution of global GDP, total primary energy demand, and energy-related CO2 emissions, relative to 2019. The economic contraction that emerged in 2020 and the decrease in energy use gave way to a revival in 2021.

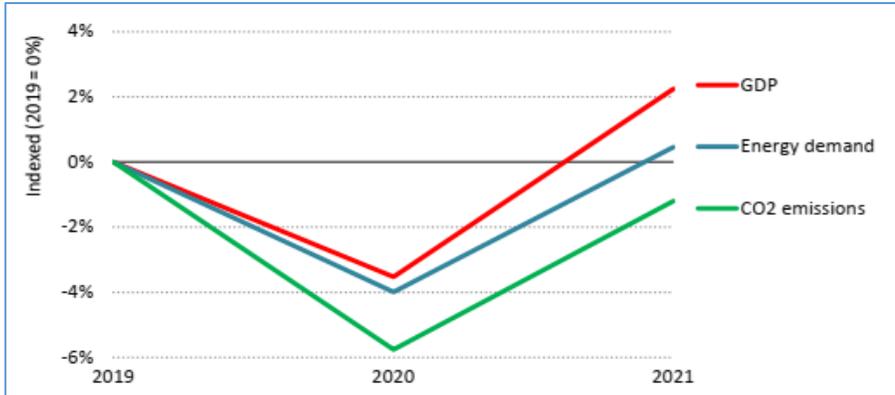


Figure.1.2. Evolution of global GDP, total primary energy demand, and energy-related CO2 emissions, relative to 2019.
Source: IEA. Global Energy Review 2021

Figure.1.3. shows change of primary energy demand by region and by fuel in 2021 relative to 2019. Although there is growth in energy use in China and India in 2021, total energy use in other economies is still at negative rates.

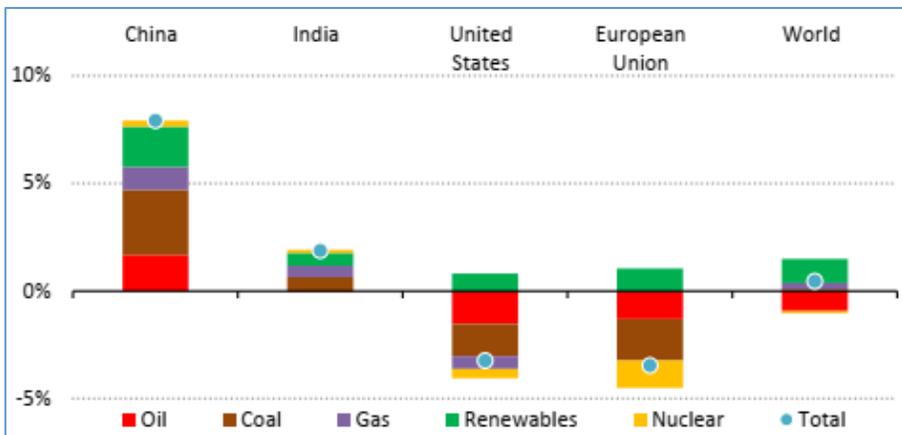


Figure.1.3. Change of primary energy demand by region and by fuel in 2021 relative to 2019
Source: IEA. Global Energy Review 2021

Table.1.1. Distribution of net electricity consumption by sectors in Turkey

Year	Total	Household	Commercial	Government	Industrial
2008	4.39	3.83	-0.67	0.00	-2.94
2009	-3.12	2.46	7.43	0.00	-2.81
2010	9.66	-3.60	1.26	-8.89	2.67
2011	8.17	-1.24	1.86	-4.88	2.60
2012	4.74	-2.10	-0.61	15.38	0.21
2013	1.60	-2.58	15.95	-8.89	-0.63
2014	4.71	-1.76	1.59	-4.88	0.21
2015	4.79	-1.35	-0.52	-5.13	0.85
2016	6.39	0.91	-1.57	5.41	-1.47
2017	7.71	-1.80	5.32	5.13	-0.21
2018	3.70	-3.21	3.03	12.20	-2.56
2019	-0.37	3.52	-5.50	15.43	-1.40
2020	2.11	5.77	-10.20	-8.12	1.62

Source: TEDC, Electricity Distribution and Consumption Statistics of Turkey

Table.1.1. shows distribution of net electricity consumption by sectors in Turkey. Total net electricity consumption decreased by 0.37% in 2019 compared to 2018. Commercial electricity consumption decreased by 5.5% in 2019 and by 10.2% in 2020.

The results of studies examining the effects of the Covid-19 Pandemic on the economy in general and the energy sector in particular are summarized below.

In the IEA the Global Energy Review (2021), it was stated that the contractionary effect of the new waves of the Covid-19 Pandemic on economic growth and energy demand still continues.

Duran and Acar (2020) found in their study that the Covid-19 epidemic caused a decrease in energy use rates as a result of the contractionary effect in many sectors, especially in aviation, tourism and transportation.

In his study, Bulut (2020) stated that as a result of the contractionary effects of the Covid-19 epidemic on the economy, the use of other energy types, especially electrical energy consumption, decreased in all sectors.

Şenol (2020) stated in his study that there has been a decrease in energy demand and energy prices due to the contractionary effects of the Covid-19 Epidemic on the economy. Yavuz and Okur (2021) found that while there was an increase in residential electricity use in the Turkish economy, there was a decrease in the consumption of electricity used for industrial and commercial purposes.

In his study, Karakaya (2020) stated that there is a decrease in energy use worldwide due to the negative effects of the Covid-19 Epidemic on the economy.

In his study, Karadağ (2021), he stated that during the Covid-19 Epidemic period, the energy consumption in the Turkish economy was partially affected by a decrease in the first half of 2020.

Şevik (2020) stated in his study that there is a decrease in electricity consumption due to the negative effects of the Covid-19 Outbreak on the economy.

In international studies, it has been determined that the energy sector is adversely affected by the Covid-19 Outbreak, although it is affected at different levels according to the countries (see, Aruga et al 2020, Klemeš et al 2020, Qarnain et al 2021, García et al 2021, Rouleau and Gosselin, 2021, Strielkowski et al 2021, Carvalho et al 2021, Wang and Zhang, 2021).

2. EMPIRICAL ANALYSIS

2.1. Data and Method

The scope of the research is the analysis of the effects of the global epidemic on the financial statements of Turkish energy sector. The data used in the study has been obtained from the Public Disclosure Platform and the Company’s internet site and Stockkeys data terminal.

Table 2.1: The Companies That Included in The Research

BIST Code	Company
AKENR	Akenerji Elektrik Uretim A.Ş
AKSEN	Aksa Enerji Uretim A.Ş
AKSUE	Aksu Enerji Ve Ticaret A.Ş
AYDEM	Aydem Elektrik Perakende Satış A.Ş
AYEN	Ayen Enerji A.Ş

BIST Code	Company
BIOEN	Biotrend Çevre Ve Enerji Yatırımları A.Ş.
CANTE	Çan2 Termik A.Ş.
ARASE	Doğu Aras Enerji Yatırımları A.Ş.
ENJSA	Enerjisa Enerji A.Ş.
ESEN	Esenboğa Elektrik Üretim A.Ş.
GWIND	Galata Wind Enerji A.Ş.
KARYE	Kartal Yenilenebilir Enerji Üretim A.Ş.
MAGEN	Margün Enerji Üretim Sanayi Ve Ticaret A.Ş.
NATEN	Naturel Yenilenebilir Enerji Ticaret A.Ş.
ODAS	Odaş Elektrik Üretim Sanayi Ticaret A.Ş.
PAMEL	Pamel Yenilenebilir Elektrik Üretim A.Ş.
UTPYA	Utopya Turizm İnşaat İşletmecilik Ticaret A.Ş.
ZOREN	Zorlu Enerji Elektrik Üretim A.Ş.

Table 2.1 summarizes the names and BIST code of the companies that have been included our research. The companies within the scope are traded in the Istanbul Stock Exchange.

2.2 Research Method

In the study, the companies traded in the Borsa Istanbul energy sector's financial statements have been analysed.

2.3 Analysis of Empirical Results

To analyse the impact of the pandemic on the energy sector, The sector's Net sales Growth (%) (Yearly) have been analysed from beginning of the 2019 to 2021 based on quarterly.



Figure 2.1. The Sector Net Sales Growth (%) (Yearly)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>
Date of access, December 12,2021

Figure 2.1 summarized net sales growth of Turkish Energy sector for each quarter from 2019 to 2021. With the beginning of the pandemic period, the sector's sales growth has decreased from 19,93% to %18,67 in first quarter 2020. Global pandemic has declared by the World Health Organization as of March 11, 2020, pandemic restrictions have become more severe. In this period the sector sales growth has decreased from 18,67% to 10,07% in second quarter 2020. With the easing of restrictions after the June period, the sector sales growth has jumped from 10,07% to 16,50 %. The sector sales growth has increased from 16,50% to 41,25% in the last period 2020. In 2021 first quarter period, the Sector's growth has decrease from 41,25% to %13,42.

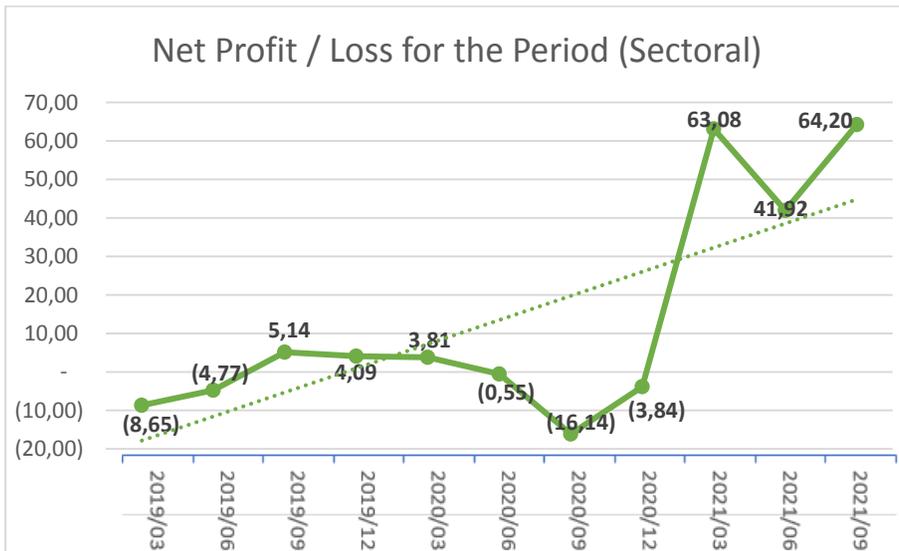


Figure 2.2. Net Profit / Loss Margin for the Periods of 2019 and 2021 (Sectoral)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>

Date of access, December 12,2021

Figure 2.2 summarized Net profit margin for the periods of 2019 and 2021. With the beginning of the pandemic period, the sector's profit margin has decreased from 4,09% to %3,81 in first quarter 2020. In the second quarter of the period profit margin has decreased from 3,81 % to negative 0,55%. With starting of 2021 covid 19 vaccine has affected global restrictions positively. In this period, the sector's profit margin has jumped from negative 3,86% to positive 63,08%. We can conclude that, pandemic period has negatively affected the sector's net profit margin.

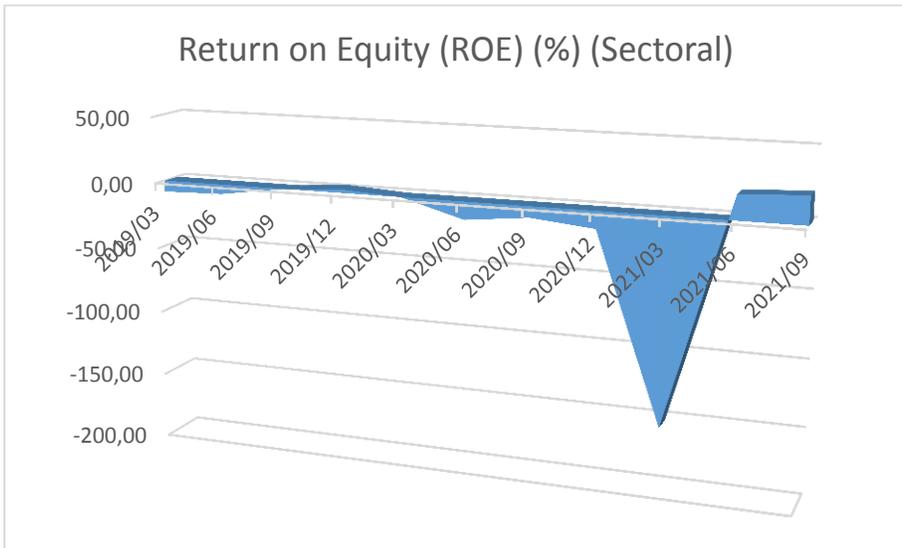


Figure 2.2. Return on Equity (ROE) (%) (Sectoral)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>
Date of access, December 13, 2021

Figure 2.3 summarized Return on Equity of the energy sector for the periods of 2019 and 2021. With the beginning of the pandemic period, the sector's ROE has started to decrease. The sector has closed the 2020 period with negative ROE. In 2021's first quarter the sector ROE has become negative 155% at lowest level. With the 2021 second and third quarter, the ROE has increased positive and closed the period at nearly 20%.

Figure 2.4 summarized EBITDA Margin of the energy sector for the periods of 2019 and 2021. The sector's EBITDA Margin has not been affected negatively in 2020. In 2021 period the sector's EBITDA margin has increased and reach highest level comparing to 2020 and 2019.

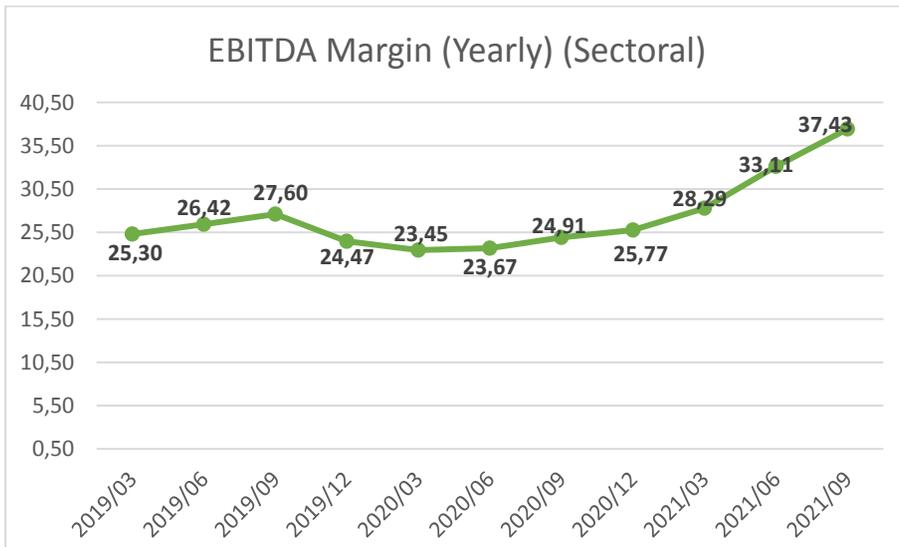


Figure 2.4. EBITDA Margin (Yearly) (Sectoral)

Source: Stockeys Terminal <https://www.stockeys.com/Hisse/SektorRasyoTrend>
Date of access, December 13,2021

Figure 2.5 summarized operating margin of the energy sector for the periods of 2019 and 2021. Operating margin has decrease slightly in 2020 period and started to increase in third quarter of the 2020 and reached highest level in 2021 as 33,53%. The margin has not been affected negatively in the pandemic period.

Figures 2.6 summarized the assets growth of the sector between 2019 and 2021. The asset growth has reached at highest level at 2021 third quarter as 45,90%. Even though sector's asset growth has slowed down in 2020, when the restrictions were intense, the asset growth of the sector has accelerated in 2021.

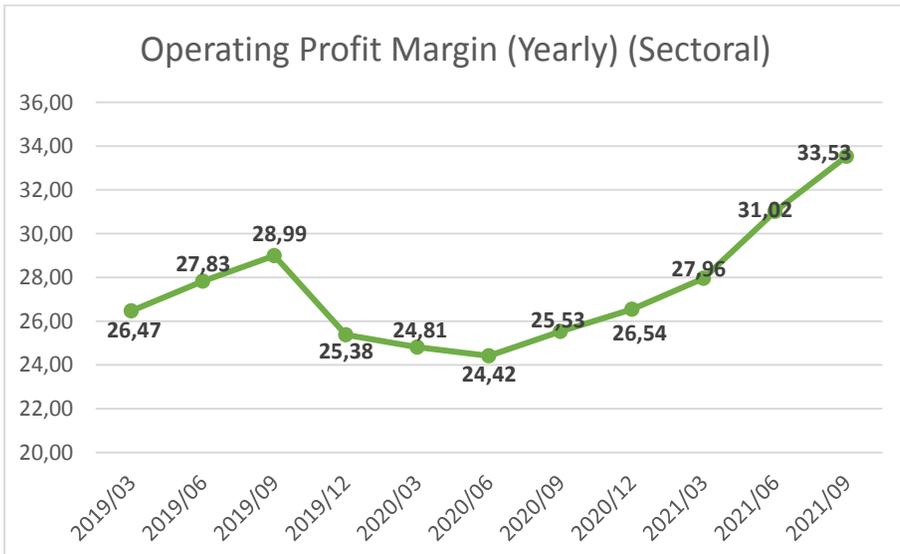


Figure 2.5. Operating Profit Margin (Yearly) (Sectoral)

Source: Stockeys Terminal <https://www.stockeys.com/Hisse/SektorRasyoTrend>
Date of access, December 13,2021

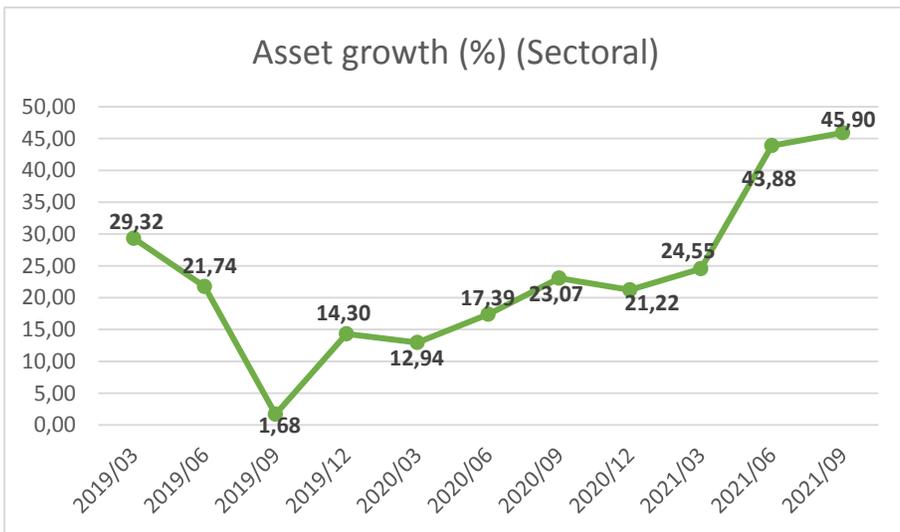


Figure 2.6. Asset growth (%) (Sectoral)

Source: Stockeys Terminal <https://www.stockeys.com/Hisse/SektorRasyoTrend>
Date of access, December 13,2021

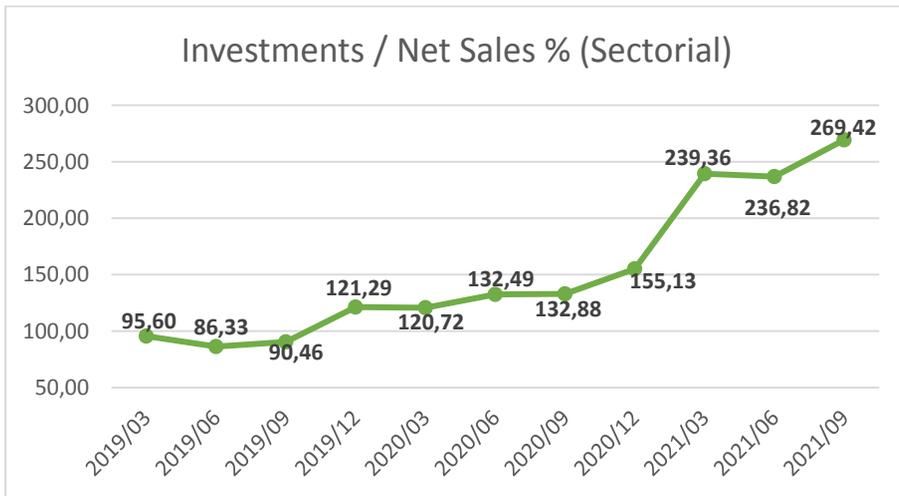


Figure 2.7. Investments / Net Sales % (Sectorial)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>
Date of access, December 15,2021

Figure 2.7 summarized investments / sales rate of the sector for the periods of 2019 and 2021. As a results of the figure we can conclude that, the sector has continued to increase its investments during the pandemic period.

Figure 2.8 summarized debt ratio of the sector for the periods of 2019 and 2021. As a results of the figure, we can conclude that, there is no significant change in the debt ratio during the 2020 pandemic period, and on the contrary an improvement.

Figure 2.9 summarized current ratio of the sector for the periods of 2019 and 2021. As result of the figure, we can conclude that the sector's current ratio has not affected negatively from COVID-19 pandemic period.

Figure 2.10 summarized liquid ratio of the sector for the periods of 2019 and 2021. As the sector's current ratio, the sector's liquid ratio has not affected negatively from COVID-19 pandemic period.

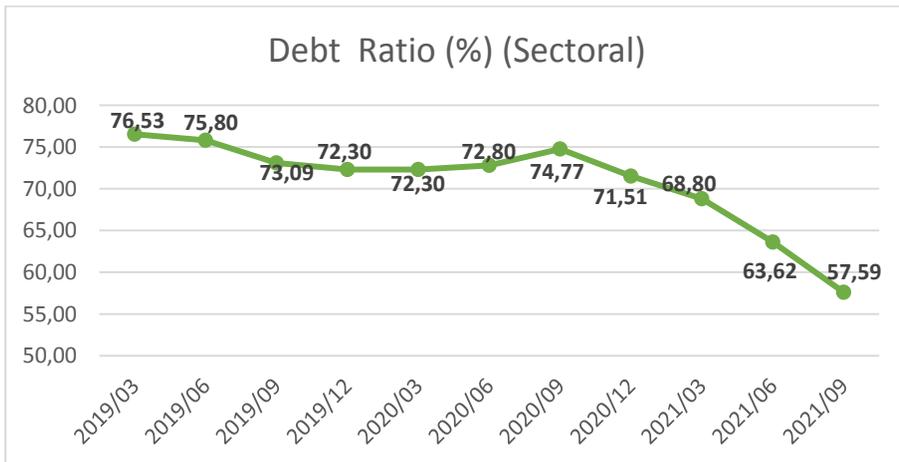


Figure 2.8. Debt Ratio (%) (Sectoral)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>
Date of access, December 15,2021

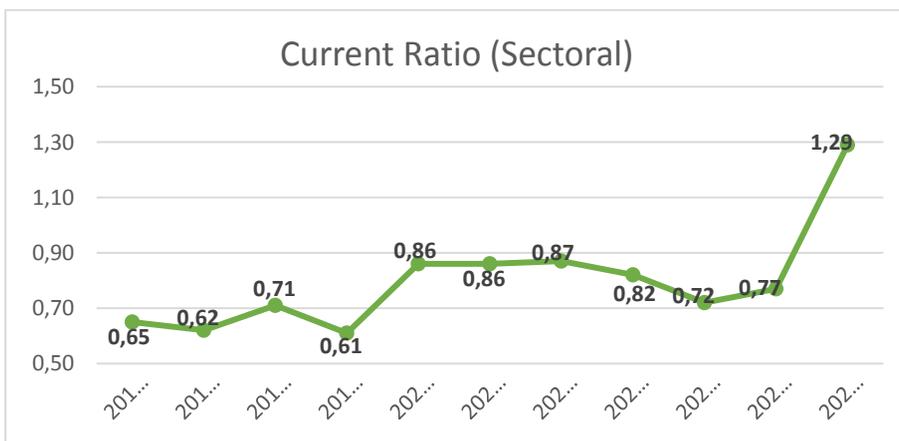


Figure 2.9. Current Ratio (Sectoral)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>
Date of access, December 15,2021

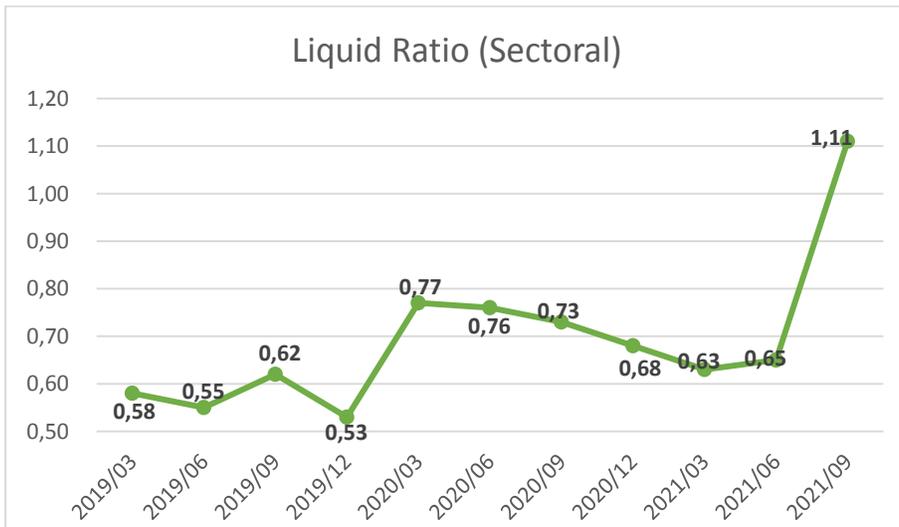


Figure 2.10. Liquid Ratio (Sectoral)

Source: Stockkeys Terminal <https://www.stockkeys.com/Hisse/SektorRasyoTrend>
Date of access, December 15,2021

CONCLUSION

The Covid-19 Pandemic continues to adversely affect national economies. In order to minimize the negative effects of the Covid-19 Pandemic, governments have tried to implement economic policies. The government in Turkey has implemented different economic policies to stimulate the economy.

The Covid-19 pandemic has also led to significant changes in the demand for the energy sector and has created a significant decrease in the energy demand in general. We have analysis the effects of the global epidemic on the financial statements of Turkish energy sector. We conclude that while there had been sharp decrease in the sector profit in generally, the Turkish energy sector has not face significant financial instability in the pandemic period and the sector has continued their investments.

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CHAPTER 9

**EFFECTS OF COVID-19 OUTBREAK ON CARGO INDUSTRY
IN TURKEY**

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INTRODUCTION

An outbreak detected by pneumonia clusters started to occur in early March 2020 in Turkey as a result of the illness of an individual, who allegedly ate a bat at the beginning of December 2019 in Wuhan, China. (WHO Director, 2020). It was declared as a coronavirus pandemic by the WHO (World Health Organization) after Covid-19, which appeared in Wuhan, Hubei Province, China with a new symptom of respiratory disease in late December 2019. (WHO, 2020; Gautam and Hens, 2020). The first case in Turkey was detected in a male patient on March 11th, 2020. Measures have been taken quickly thanks to the Ministry of Health and the Scientific Committee that had been established for COVID-19. Schools, universities were vacationed and public events (weddings, associations, meetings, congresses, etc.) were restricted the day after the first case. After two days, extensive travel and transportation restrictions were implemented. Public spaces such as cafes, restaurants, hairdressers where people gather were temporarily closed on March 15th, 2020. As of March 21th, 2020, the street curfew was introduced for people over 65 years of age, who are at a greater risk. On April 5th, 2020, a curfew was introduced for people under the age of 20 to reduce the spread of the virus among young people.

People tried to comply with the measures taken by the state in the combat against the epidemic and, through this period, remained largely at home. During the epidemic, the vast majority received their cleaning, food, stationery and similar needs by purchasing cargo services from online shopping sites. It was revealed by the study that 36% of the population received an average of more than 5 cargo services each month during the epidemic, and that 26% of these customers received their cargo in more than 5 days after their order. Additionally, 40% of customers stated that their behaviour of ordering cargo services increased during the epidemic period compared to normal. In the epidemic period, it was determined the share of medical masks in total cargo services was 9%, the share of food was 17%, and the textile share was 33%. Based on these results, it is gathered that the Turkish public tends to make purchases online during an epidemic period, and an intensive cargo activity emerges.

As discussed in the logistics industry "cargo companies", it took place in Turkey in 2003 with legislation transport activities. Firms operating in the sector started to serve with a branch and agency network (UTİKAD, 2017). Logistics industry, which has strategic importance for the economy shows growth in Turkey as well as in the world in an expeditious manner. When the economic data of the sector are analysed; it is thought that in 2016, 4 trillion dollars will be generated. 3 trillion dollars in revenue to be obtained in 2011. They also grow by 7% compared to 2015 indicates that Turkey is important for the economy of the transport sector (Logistic Association, (LODER), 2016).

10th Development Plan (2014-2018), 34th in Turkey according to the Logistics Performance Index 2007, 39th in 2010, has been 27th in 2012. Turkey's 2018 target is to become one of the top 15 countries out of 155 countries. According to the same plan, 87.4% of intercity freight transport is done by road. Due to the investments in both the roads and the railway network and the expansion of these networks, new transportation corridors are being opened and the importance of logistics activities in this context is increasing. This brings service quality to the fore.

Turkey in fact has a short history as 35-40 years, which is a very young industry cargo, courier and logistics services have gained momentum after the transition to a free market economy, it has become an indispensable partner of the real sector. Today, Turkey cargo, courier and distribution sector employs more than 100 thousand people. 7 million address visits and 5 million kilometers daily are covered in 25 thousand vehicles and 10 thousand fixed centers. (Turkey Shipping, Courier and Logistics Operators Association (KARID), (2020)).

Turkey Shipping, Courier and Logistics Operators Association (KARID) Covid-19 general health measures taken in the dormitory during the outbreak in the current intensity in cargo volumes due to e-commerce shopping clarified that caused the increase. The association has been informed that all employees are provided with necessary information to protect public health, such as masks, gloves, disinfectants, etc. It was reported that protective materials were used and the health status of employees was constantly checked.

Cargo companies that have a voice in the world; "FedEx Express, UPS Airlines, DHL Aviation, Cathay Pacific Cargo and Korean Air Cargo", while providing the same mission and service companies in Turkey, and the more fleet with cargo companies; It is seen that there are Yurtiçi, Aras and TNT cargo. The number of branches belongs to the most PTT cargo and it is known to reach almost all regions in the country. MNG and the domestic cargo, the number of branches and the number of regional directorates are at a very good level (Akbulut, 2016). The rapid development of the cargo industry in information systems and communication technology has further increased the importance of logistics. Since 1980, it is possible to talk about the sector's recovery and its contribution to employment in terms of economy (Duran, 2017).

However, with regard to shipping companies operating in Turkey to consumer associations and consumer protection associations (TUKODER) can go in the complaint. Consumers of research results in cargo transportation in Turkey, where the troops have done, which is much more expensive than the transport plane people and none has been found to fulfill the responsibilities of certain shipping companies. In addition, it is observed that deliveries that are not made on time, conscious measurement errors, broken and broken cargoes, non-compliance with the contracts made, and disrespectful behaviours against consumer complaints are also encountered (Turkey Consumer Associations, 2020).

Although service quality was researched in many service sectors such as banking, retailing, health, education, and tourism; there are a limited number of studies on the quality of cargo service providers. The cargo sector has become a fiercely competitive industry in both national and international arena. With the place of the cargo companies gaining prominence in the real economy, quality of the services they provide has become more important for the involved parties than ever before. Subsequently, determining and improving the service quality of cargo companies will benefit the involved parties in terms of providing customer satisfaction. Customer satisfaction is already known to increase repurchase behaviour (Büyükkelik et al., 2014)

In this study, the impact of cargo companies on service quality and the impact of service quality on customer satisfaction and repurchase behaviour were investigated. Cargo services' being punctual and conducted in

the most secure manner possible for customers becomes very important for health and sustainability. For this reason, evaluation of provided services with a measurable model regarding the service quality of cargo companies constitutes the focal point of the study. In this study, satisfaction levels of the customers receiving cargo service during the COVID-19 outbreak were examined via ACSI model & PLS method. The results obtained by the study are expected to provide cargo companies with a valid and reliable data collection tool, which they can use to evaluate the quality of service, to know the dimensions they can base their quality improvement efforts on, and to be aware of the relationship of service quality with customer satisfaction and repurchase behaviour.

2 MATERIALS AND METHOD

2.1 Sample and Data Collection

The study of O'Loughlin and Coenders (2004) was used in the design of the data compilation tool. The data compilation tool utilized in the study is divided into two parts, namely demographic information and the service quality of cargo companies and customer satisfaction. The part about demographic information includes information such as gender, age, education, occupation, and marital status of the person completing the questionnaire. In the second part, the expressions used to evaluate the services offered by Cargo Companies were measured as 1- Very Low, 10- Very High.

The questionnaire was conducted online with 252 people between the dates 02.05.2020 & 06.05.2020 in various cities where the COVID-19 epidemic was observed, in Turkey. Thanks to the pilot research, it was determined that approximately one fourth of the people used cargos during the epidemic period. For this reason, 252 unit sample volume was evaluated as sufficient with the population proportion $p=0.25$, 90% confidence level, and 5% margin of error.

In the proposed model, customer satisfaction, loyalty, customer complaint, perceived value, perceived quality, and customer expectations have been included. Cronbach Alfa (α) was calculated for the determination of the reliability of the data compilation tool, and to see whether the questions were understandable. From the analysis' findings, Cronbach Alpha (α)

coefficient was found as 0.97 and the internal consistency of the data compilation tool was evaluated as sufficient.

2.2 Research Model and Hypotheses

There are many consumer satisfaction model studies for different sectors in literature (Tam, 2011; Tudoran and Olsen, 2017; Konuk 2018). As can be gathered from this brief literature review, it is revealed that ACSI is used to measure consumer satisfaction in different sectors, and PLS is used mostly in analyses.

Various measurement models have been developed in many countries to measure customer satisfaction. The most important of these measurement models are as follows: the Swedish Customer Satisfaction Barometer (SCSB) in 1989, the German Customer Barometer (Deutsche Kunden Barometer-DK) in 1992, the American Customer Satisfaction Index-ACSI in 1994, the Norwegian Customer Satisfaction Barometer (NCSB) in 1996, the Swiss Customer Satisfaction Index (SWICS) in 1998, and the European Customer Satisfaction Index (ECSI) in 1999.

ACSI is used both for measuring the satisfaction of customers with products and services in the market, and comparing the measured sectors among themselves. One of the most important aspects of ACSI is that it is based on a satisfaction assessment of quality that relies on accumulation rather than the latest experiences of customers. ACSI model given in Figure 1 is designed so that it can measure product/service quality and customer satisfaction by survey method. Satisfaction is measured as a latent variable, by using the measurable variables in the survey. There are 6 basic variables in the aforementioned model. These variables are (Bayol, Foye, Tellier and Tenenhaus, 2000; Yilmaz and Kinaş, 2020);

a) Customer Expectations; It measures a customer's expectation for the quality of the products or services of a given company. Service experience of customers is generally shaped by the information received from the media, advertising, salespeople, and other customers. Customer expectations affect reviews about how well a product or service is performing.

b) Perceived Quality; It is a measure of a customer's assessment of the quality of the product or service of a given company through his/her final

consumption experience. Customers are asked to what extent a product or service meets their needs and what they think about it in terms of reliability.

c) Perceived Value; It is a measure of quality based on the price paid. It includes the evaluations of customers about the price of goods and services after the purchase, and the quality of goods according to the price paid.

d) Customer Satisfaction; It includes evaluations, based on the experience of customers, about how satisfied customers are with regard to goods and services after purchase, to what extent goods/services meet their expectations, and how close goods/services are to their ideal product/service.

e) Customer Complaint; It is measured as a percentage of participants that state they made a direct complaint about a product or service within a specified time range. Satisfaction has a negative relationship with customer complaints, the more satisfactions customers have, the less they complain.

f) Customer Loyalty; In a product environment where a customer has other alternatives, it refers to his/her sincere loyalty and non-accidental shopping attitude, desire and constant choice for a given business, seller or product/service.

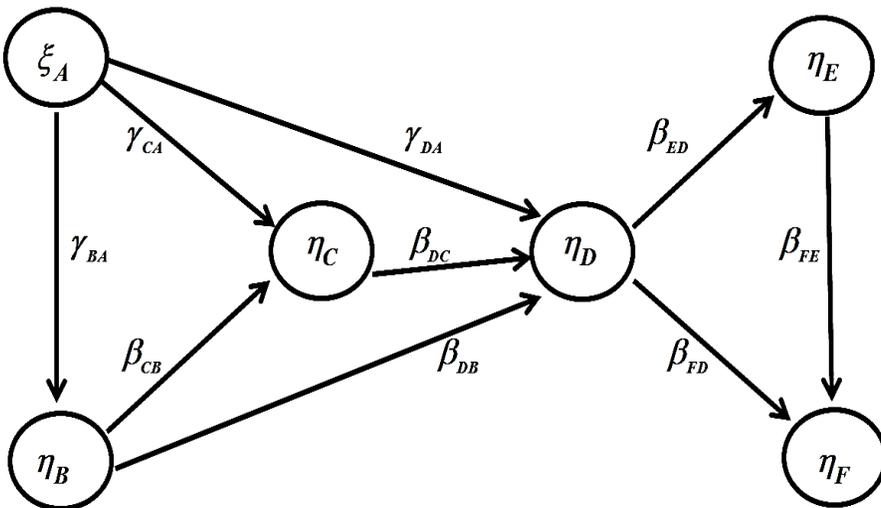


Figure 1 ACSI Research Model

A: Customer Expectation; B: Perceived Quality C: Perceived Value; D: Satisfaction; E: Complaint; F: Loyalty

The symbols in Figure 1 are defined below:

ACSI, ξ_A : Customer Expectation, η_B : Perceived Quality, η_C : Perceived Value, and η_D : Satisfaction, η_E : Complaint, η_F : Loyalty,. γ_{CA} : The direct effect on C of A, γ_{DA} : The direct effect on D of A, γ_{BA} : The direct effect on B of A, β_{CB} : The direct effect on B of C, β_{DC} : The direct effect on D of C, β_{DB} : The direct effect on D of B, β_{ED} : The direct effect on E of D, β_{FD} : The direct effect on F of D, β_{FE} : The direct effect on F of E.

The matrix representation of the measurement part of the ACSI research model in Figure 1 is given in Equations 1-2. There were five endogenous variables (m=5) and one exogenous variable (n=1).

Structural equation

$$\eta = B\eta + \Gamma\xi + \zeta$$

$$\begin{bmatrix} \eta_B \\ \eta_C \\ \eta_D \\ \eta_E \\ \eta_F \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 \\ \beta_{CB} & 0 & 0 & 0 & 0 \\ \beta_{DB} & \beta_{DC} & 0 & 0 & 0 \\ 0 & 0 & \beta_{FD} & 0 & 0 \\ 0 & 0 & \beta_{ED} & \beta_{FE} & 0 \end{bmatrix} \begin{bmatrix} \eta_B \\ \eta_C \\ \eta_D \\ \eta_E \\ \eta_F \end{bmatrix} + \begin{bmatrix} \gamma_{BA} \\ \gamma_{CA} \\ \gamma_{DA} \\ 0 \\ 0 \end{bmatrix} [\xi_A] + \begin{bmatrix} \zeta_B \\ \zeta_C \\ \zeta_D \\ \zeta_E \\ \zeta_F \end{bmatrix}$$

(1)

$$\begin{aligned}
\eta_B &= \gamma_{B,A}\xi_A + \zeta_B \\
\eta_C &= \gamma_{C,A}\xi_A + \beta_{C,B}\eta_B + \zeta_C \\
\eta_D &= \gamma_{D,A}\xi_A + \beta_{D,B}\eta_B + \beta_{D,C}\eta_C + \zeta_D \\
\eta_E &= \beta_{E,D}\eta_D + \zeta_E \\
\eta_F &= \beta_{F,D}\eta_D + \beta_{F,E}\eta_E + \zeta_F
\end{aligned}
\tag{2}$$

The perceived value is related to the total benefit by and the total cost of the customer. Eskildsen, Kristensen, Juhl and Ostergaard (2004) stated that perceived value is one of the most important factors that significantly shape customer satisfaction in retail trade in Denmark. Terblanche (2005) stated that perceived value is one of the more dominant factors, which significantly shape customer satisfaction. As a result, perceived value is a pioneer of customer satisfaction. Perceived value is based on the equilibrium between perceived cost and perceived quality. Anderson and Fornell (2000) stated that the inclusion of the perceived value in the Customer Satisfaction Index (CSI) Model renders the results comparable between companies and sectors.

H1: Perceived value has a positive impact on customer satisfaction.

Bayol et al. (2000) showed that perceived quality for a mobile phone supplier in European countries has a positive impact on customer satisfaction. Terblanche (2005) carried out a study of fast food retail industries in seven metropolises of South Africa with the ACSI model. It was stated in the study that the perceived quality increase customer satisfaction through increasing perceived value.

H2: Perceived quality has a positive impact on perceived value.

H3: Perceived quality has a positive impact on customer satisfaction.

In general, customer expectations are estimates in relation to what type of service the customer will receive. Bayol et al. (2000) explained that customer satisfaction may be affected by a number of predictors and that customer expectation positively affect customer satisfaction. Moreover, it was determined that customer expectation constitutes perceived quality as a

predictor of customer satisfaction. Van Ryzin, Muzzio, Immerwahr, Gulick and Martinez (2004) used the ACSI model to test the behavioural consequences of general satisfaction in local government services.

The results put forth that expectations regarding service quality had a significant impact on quality perceptions, overall satisfaction and perceived value (Deng et al., 2013).

H4: Expectation has a positive impact on perceived value.

H5: Expectation has a positive impact on perceived quality.

H6: Expectation has a positive impact on satisfaction.

Maxham and Netemeyer (2002) stated that proper handling of customer complaints can increase customer satisfaction. The relationship between customer satisfaction and customer complaint depends on how dissatisfied customers behave. Effective handling of a customer complaint can lead to an increase in customer satisfaction and turn a complaining customer into a loyal one (Fornell, 1992). According to the theory of Hirschman (1970), increasing customer satisfaction has reduced customer complaints significantly (Deng et al., 2013). In this study, the complaint factor was measured with the items “E14: During the epidemic, the handling of customer complaints by the cargo company is appropriate”, “E23: During the epidemic, the cargo company resolves customer complaints quickly”. Therefore, the complaint factor is of positive significance.

H8: Satisfaction has a positive impact on complaint.

Loyalty refers to repurchase (Jacoby, 1971). For a hotel, loyal customers are the most profitable type due to their tendency to buy hotel services over and over again. In addition, loyal customers represent the source of word of mouth marketing (Knutson, 1988). Many studies on customer satisfaction identified customer retention and customer suggestions as having a crucial impact on the business success of an hotel (Kandampully and Suhartanto, 2000). Countless studies identified increasing customer satisfaction as a crucial factor for increasing customer loyalty (Barsky, 1992; Smith and Bolton, 1998). Research shows that loyal customers will repurchase leading to positive developments (Fornell, 1992; Zeithaml, Berry and Parasuraman, 1996). Therefore, customer satisfaction is considered as a key point in the formation of purchasing intentions (loyalty). As a result, as

relationships in ACSI display, customer loyalty increases and customer complaints decrease when customer satisfaction is good (Fornell et al., 1996; Deng et al., 2013).

H7: Satisfaction has a positive impact on loyalty.

H9: Complaint has a positive impact on loyalty.

3 RESULTS

3.1 Demographic Characteristics of the Participants

134 of the participants are women (53.2%) and 118 are men (46.8%). 33% of the participants answered textile to the question "For which products did you receive cargo service during the epidemic period?", 18% answered electronics, 17% answered food and 9% answered mask/visor. Average number of service purchases from a cargo company during the epidemic period each month are as follows; 29% are 1-2 times, 35% are 3-4 times, approximately 26% are 5 times and more than 5. The answers to the question "How long did it take for the participants to receive their cargos" was as follows: 21% in 1-2 days, 40% in 3-4 days, and about 21% in a week and more. Regarding the question of "How did the number of cargo services received changed during the epidemic period compared to the normal period?" 64 (25.4%) of the participants said decreased, 87 (34.5%) said not changed, 101 (40.1%) said increased. It was determined that the overall satisfaction level of cargo services during the epidemic period decreased for 24% of the participants, 61% remained the same, and 15% increased.

3.2 Data Analyses

3.2.1 Validity of the Measurement Model

Three criteria are commonly used to ensure Convergent validity. First, the standard factor load of each observed variable for latent variables should be greater than 0.50 and statistically significant (Fornell and Larcker, 1981). Second, for each structure, the Composite Reliability (CR) value and the Cronbach Alpha (CA) value should be greater than 0.70 (Hair, Anderson, Tatham and Black, 1998). Third, the Average Variance Extracted-AVE value of each latent variable should be greater than 0.50 (Fornell and Larcker, 1981). Moreover, it is stated that in cases where the CR values of the relevant factor are greater than 0.60, AVE being smaller than 0.50 is acceptable and

the construct validity is sufficient (Hair et al., 1998). In Table 1, CA, CR and AVE values are presented all together.

When the construct reliability of the study was examined, it was seen that the CR values were A = 0.91; B = 0.93; C = 0.94; D = 0.96; E = 0.95; F = 0.72 and AVE values were greater than 0.50.

Table 1 Construct Reliability and Validity

Factors	Cronbach Alfa	Composite Reliability (CR)	Average Varians Explained (AVE)
A	0.85	0.91	0.77
B	0.90	0.93	0,83
C	0.88	0.94	0.89
D	0.93	0.96	0.89
E	0.90	0.95	0.75
F	0.85	0.72	0.86

3.2.2 Evaluation of Structural Model

After the verification of the validity and reliability of the measurement model, the structural model is evaluated. Structural model is generally evaluated by determination coefficient R^2 , effect size f^2 , path coefficient and t-value, predictor validity Q^2 and goodness-of-fit index (GoF). Furthermore, the following values are utilized for the model fit; measurements calculated by Smart PLS 3 software, Standardized Root Mean Square Residual (SRMR), The Squared Euclidean distance-d_ ULS, The Geodesic Distance-d _G, Chi-Squared and Normed Fit Index (NFI).

The size of the R^2 values is important in determining the accuracy of the estimators. Researchers also examine the Q^2 value accordingly. The Q^2 measure indicates the validity of the model's estimate. Q^2 value of the structural model being greater than zero indicates that it provides predictive validity (Chin, 1998). Q^2 values B=0.56; C=0.57; D=0.70 and E=0.69; F=0.64. Model validity was ensured according to the Q^2 values obtained as a result of the analysis. That is, the related model predicts the original observed variables sufficiently.

Apart from evaluating the R^2 values of all internal latent variables, f^2 (effect size) is utilized to assess whether the change in R^2 value has a significant impact on the internal latent variables, in case a given external latent variable were removed from the model. The effect size f^2 is predictive

and states that a latent variable has a weak ($0.02 < f^2 < 0.14$), moderate ($0.15 < f^2 < 0.34$), and high ($f^2 > 0.34$) effect at the structural level (Cohen, 1988). According to the f^2 values obtained as a result of the analysis: A latent variable affects B (2.21) at a high level, B latent variable affects C (0.41) at a high level and D (0,19) at a moderate level; D latent variable affects E (3.46) and F (0.37) at a high level. Latent variable E affects F (0.04) at a weak level.

As there is no general fit index in PLS-SEM, Tenenhaus et al. (2005) suggested goodness of fit index (GoF) as a measure of fit goodness. The GoF index was developed to identify the performance of both the measurement model and the structural model, and to provide a standardized measurement for the predictive performance of the model in its entirety. The GoF index are valued between 0 and 1. The degrees of fit of the GoF index are GoF <0.10 (low), $0.10 < \text{GoF} < 0.25$ (medium), $0.25 < \text{GoF} < 0.36$ (good) $\text{GoF} > 0.36$ (very good) (Wetzels et al., 2009). The GoF index is obtained by taking the square root of the multiplication of the mean of AVE and R^2 values that are obtained for latent variables.

$$\text{GoF} = \sqrt{\text{Mean}(R^2) \times \text{Mean}(AVE)}$$

Average of the R^2 values were 0.73 and average of AVE values were 0.95, and the GoF index was determined as 0.83. This result shows that the model has a very good fit.

d_{ULS} and d_{G} are defined, respectively, as the square of the euclidean distance and square of the shortest distance between two points. d_{ULS} and d_{G} full fit criteria are the statistics utilized to make an assessment of the model. It is used in the evaluation of the result of Bootstrap analysis in SmartPLS. The upper limit of confidence interval must be greater than the original value of the d_{ULS} and d_{G} full fit criteria, in order for the model to fit well. Thus, the upper limit of the confidence interval is picked either as 95% or as 99%. It is concluded that the model fits when the difference between the correlation matrix and the empirical correlation matrix of the model is statistically insignificant ($p > 0.05$). Otherwise, model fit cannot be determined (<https://www.smartpls.com/documentation/algorithms-and-techniques/model-fit-16-12-2019>).

In order for the model to have an acceptable fit, the SRMR value is requested to be less than 0.10. SRMR value was calculated as 0.062 for the model. 0.526 and 0.525 values that were calculated for the d_ ULS and d_ G full fit criteria were calculated as $p > 0.05$. The chi-square value was identified as 735.703. NFI value is valued between 0 and 1. The NFI value being close to 1 indicates the model having a good fit. NFI=0.827 was calculated for the model in the study.

3.2.3 Path Coefficients and Hypothesis Testing

The model in Figure 2 was obtained by using the SmartPLS 3.0 ready software. The equations consisting estimated path coefficients and structural parameters were shown below.

$$\begin{aligned} \eta_B &= \gamma_{BC}\xi_A + \zeta_B = 0.83\xi_A + 0.311 \\ \eta_C &= \gamma_{CA}\xi_A + \beta_{CB}\eta_B + \xi_C = 0.165\xi_A + 0.662\eta_B + 0.338 \\ \eta_D &= \gamma_{DA}\xi_A + \beta_{DB}\eta_B + \beta_{DC}\eta_C + \zeta_D = 0.256\xi_A + 0.420\eta_B + 0.284\eta_C + 0.200 \\ \eta_E &= \beta_{ED}\eta_D + \zeta_E = 0.881\eta_D + 0.224 \\ \eta_F &= \beta_{FD}\eta_D + \beta_{FE}\eta_E + \zeta_F = 0.658\eta_D + 0.231\eta_E + 0.245 \end{aligned}$$

According to the analysis results, a statistically significant positive relationship was identified between the expectation external (exogenous) latent variable and the perceived quality internal (endogenous) latent variable. This value illustrates that a one point increase in expectation will lead to an increase of 0.83 points in perceived quality.

A positive significant relationship was identified between the expectation exogenous latent variable and the perceived value latent variable. This value is the implication of a one point increase in expectation that will lead to an increase of 0.16 points in perceived value. A statistically significant relationship was identified between the expectation exogenous latent variable and the satisfaction intrinsic latent variable. This value is the implication of a one point increase in expectation that will lead to an increase of 0.25 points in satisfaction.

A positively significant relationship was identified between perceived quality and perceived value. This value is the implication of a one point increase in perceived quality that will lead to an increase of 0.67 points in

perceived value. There is a statistically significant positive relationship between perceived quality and satisfaction latent variable. A one point increase in perceived quality leads to a 0.42 increase in satisfaction. A one point increase in perceived value leads to a 0.28 increase in satisfaction latent variable. A statistically significant positive relationship was identified between satisfaction and loyalty latent variables. This value is the indication of a one point increase in satisfaction that will cause a 0.65 point increase in loyalty.

In this study, the complaint factor was defined positively with the items “During the epidemic, the handling of customer complaints by the cargo company is appropriate,” “During the epidemic, the cargo company resolves customer complaints quickly.” Hence, the correlation coefficient between satisfaction and complaint (0.88), and between complaint and loyalty (0.23) were calculated positively.

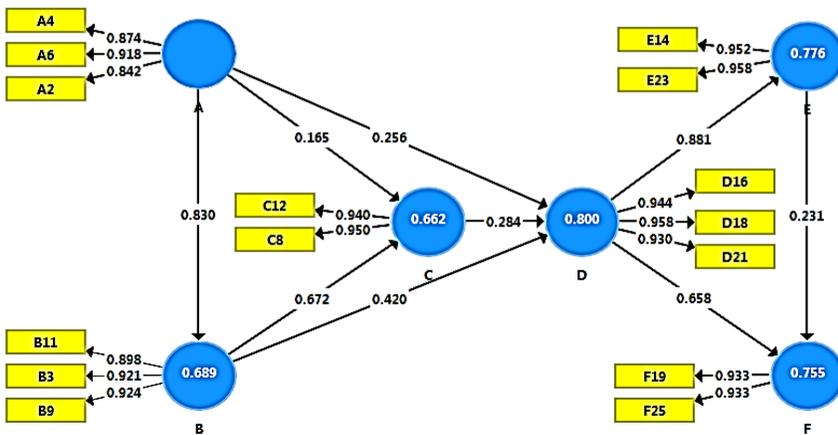


Figure2 Detailed PLS-SEM Diagram of the Model

A: Customer Expectation; B: Perceived Quality C: Perceived Value; D: Satisfaction; E: Complaint; F: Loyalty

In Table 2, standardized factor loads, t and R values are presented. R² values for B, C, D, E and F latent variables were calculated as 0.68, 0.66,

0.80, 0.77 and 0.75, respectively. When the t values related to the significance of factor loads are evaluated, it emerges that all factor loads are statistically significant.

Table 2 Standardized Factor Loads, t Values

Factors	Items	Standardized Factor Loads	t-Value
Customer Expectation (A) <i>CR=0.91:</i> <i>AVE=0.77</i>	Q2: In the period of epidemic, if I have problems with cargo services, my expectation that the business will compensate,	0.84	31.29
	Q4: In the period of epidemic, my expectation that the business will inform me in advance, if there is a delay in cargo distribution,	0.87	49.47
	Q6: My expectation that if I have any cargo delivery problem during the epidemic, this will be resolved as soon as possible,	0.91	83.44
Perceived Quality (B) <i>CR=0.93:</i> <i>AVE=0.83</i> <i>R²=0.68</i>	Q3: During the epidemic, your satisfaction with the level of customer service meeting your demands,	0.92	65.77
	Q9: Your level of satisfaction with the overall quality of customer service during the outbreak,	0.92	62.91
	Q11: Your satisfaction level when you compare the quality of customer service with the quality of services offered by similar companies.	0.89	56.71
Perceived Value (C) <i>CR=0.94:</i> <i>AVE=0.89</i> <i>R²=0.66</i>	Q8: In the period of epidemic, considering the fee paid for the services of the cargo company, your level of satisfaction with the quality of the services provided	0.95	93.25
	Q12: During the epidemic, when you consider the services you receive from the cargo company, your satisfaction with the fee I paid	0.94	144.74
Satisfaction (D) <i>CR=0.96:</i> <i>AVE=0.89</i> <i>R²=0.80</i>	Q16: During the epidemic period, when I consider all the services of the cargo company, I am generally satisfied with their services.	0.94	120.72
	Q18: During the epidemic, the	0.95	150.54

	service I received from the cargo company exceeded my expectations. Q21: During the epidemic, the services I received from the cargo company meet the ideal level of service.	0.93	88.56
Loyalty (F) <i>CR=0.95:</i> <i>AVE=0.75</i> <i>R²=0.77</i>	Q19: During the epidemic period, if I need to choose a new cargo company, I will choose the same cargo company again.	0.93	75.87
	Q25: During the epidemic, when I am asked for advice, I recommend the cargo company I use to my close circle.	0.93	69.32
Complaint (E) <i>CR=0.72:</i> <i>AVE=0.86</i> <i>R²=0.75</i>	Q14: During the epidemic, the cargo company's handling of customer complaints is appropriate	0,95	133.37
	Q23: During the epidemic, the cargo company resolves customer complaints quickly.	0.95	167.25

Standardized parameter estimates, t values and hypothesis testing results are presented in Table 3. According to the results in Table 3, all of the hypotheses have been supported.

Table 3 Standardized parameter estimations and hypothesis testing results

Hypothese	Relation	Standardized parameter estimations	t -value	Hypothesis testing results
H₁	A → B	0.830	29.41 ^{**}	Supported
H₂	A → C	0.165	2.00 [*]	Supported
H₃	A → D	0.256	2.85 [*]	Supported
H₄	B → C	0.672	8.66 ^{**}	Supported
H₅	B → D	0.420	3.86 ^{**}	Supported
H₆	C → D	0.284	3.78 ^{**}	Supported
H₇	D → E	0.881	45.56 ^{**}	Supported
H₈	D → F	0.658	8.98 ^{**}	Supported
H₉	E → F	0.231	2.98 [*]	Supported

*p<0,05; **p<0,01

4.2.4 The Turkish ACSI of cargo services in the pandemic time

In the ACSI, there are three indicators for customer satisfaction that range from 1 to 10. An index score was calculated for the satisfaction construct (ACSI) in Turkish, based on the formula suggested by Anderson and Fornell (2000):

$$ACSI = \frac{\sum_{i=1}^3 w_i \bar{x}_i - \sum_{i=1}^3 w_i}{9 \sum_{i=1}^3 w_i} \times 100$$

where w_i is the weight of the i th item obtained from the outer model generated by PLS and \bar{x}_i is the average of the i th item that loads on the ACSI construct (Hsu, S.H., Chen, W.H. & Hsieh, M.J. (2006). Satisfaction factor was measured with items D16, D18 and D21. The averages of these items are 6.35, 6.25 and 5.95 respectively.

ACSI

$$= \frac{(0.359 \times 6.35) + (0.356 \times 6.25) + (0.345 \times 5.95) - (0.359 + 0.356 + 0.345)}{9 \times (0.359 + 0.356 + 0.345)} \times 100 = 58\%$$

This index represents the ACSI score for the Turkish Cargo services. This result shows that the satisfaction with the cargo services is at a moderate level during the epidemic period.

4 DISCUSSION AND CONCLUSION

4.1. Conclusions and limitation

Cargo, courier and logistics services, a relatively young sector with an approximate history of 35 years in Turkey, have become the indispensable solution partner of the real sector. Increasing online shopping, thanks especially to the widespread use of virtual stores, led to an increase in the business volume of cargo companies and a change in their consumer profile. As it is so in any competitive environment, quality is critical to the success of the cargo industry. Identifying factors in regard to customer satisfaction, such as understanding how service quality is perceived by customers, what is valuable, where, when and how to improve service, is of paramount importance for companies that operate within the cargo industry. With the

measurement of customer perceptions and opinions, the information to be obtained from the customer's point of view will allow for the strengths and weaknesses of the cargo companies to be laid bare for identification, to determine to what extent customer needs are met, and to improve services.

Attitudes towards service measurement of cargo companies were behaviour with the PLS-SEM method based on the ACSI model in the study. In the ACSI model, customer satisfaction, perceived value, loyalty, perceived quality, customer complaint, customer expectation factors are evaluated. A statistically significant relationship was identified between the expectation exogenous latent variable and the perceived quality endogenous latent variable. This result means that as customer expectations are met, the perceived quality level of the cargo companies increases. A statistically significant positive relationship was identified between expectation and perceived value. This finding means that as long as customers' expectations are being met, there will be a balance between the prices paid for cargo services and the quality of perceived services. A statistically significant positive relationship was identified between expectation and satisfaction. Therefore, as customer expectations are met, satisfaction levels also increase.

A positively significant relationship was identified between perceived quality and perceived value. If the service customers receive meet their needs and if they trust cargo companies, their perception of the paid service fee will be positive. A positive significant relationship has been identified between perceived quality and satisfaction. According to this, we might say that the better the cargo service use experiences of customers are, the more positively their satisfaction will be affected. A positive significant relationship was identified between perceived value and satisfaction. Customers' satisfaction levels towards a company will increase when the service they receive meets their needs and they trust the company.

A positive and significant relationship was identified between satisfaction and complaint. Through this finding, it was established that a statistically significant relationship existed between an increase in customers' satisfaction with the services of the cargo companies and their beliefs that their complaints would easily be resolved. The satisfaction with the services of the cargo companies increasing means that customer loyalty to the related company increases. A positively significant relationship was identified

between the complaint and loyalty latent variables. This result can be interpreted in the following manner: the increase in the beliefs of the participants that their complaints can be resolved easily will lead to their loyalty to the cargo companies increasing.

Considering the literature, ACSI model was applied and analysis was made with PLS-SEM to measure customer satisfaction by many authors. The ACSI model in question has generally been applied in tourism, food and transportation sectors. Customer satisfaction related to service measurement of cargo distribution companies has been investigated in this study. Similar to this study, in the studies of Terblanche (2005), CFI Group (2013) and Fornell (1996), ACSI model was created using PLS-SEM analysis method. Hypotheses were formed and tested in similar ways. Fornell et al. (1996) put forth that customer satisfaction is derived from quality rather than being value or price-oriented. In Terblanche's (2005) study, the results obtained by the ACSI model to predict customer loyalty display a weak relationship between customer loyalty and satisfaction. These findings are in line with the views of various authors, who state that customer satisfaction cannot be the sole prediction of customer loyalty. On the other hand, the CFI Group (2013), based on its knowledge gained from 70 years of social psychology research, has stated that a customer weighs his/her opinions about a product/service experience according to his/her future behavioural intentions related to performance perceptions, attitudes, and product/service in correlation with the different aspects of product/service experience.

The present study revealed that 40.1% of the participants increased the number of cargo services they received during the epidemic period compared to normal. Additionally, it was determined that the overall satisfaction level of 24% of the participants from cargo services during the epidemic period decreased compared to the normal period. The reason for this is considered to be the explosion of demand, when the epidemic abruptly outbreaked. These results show that while the number of cargo services increased, overall satisfaction decreased. This finding is supported by the ACSI satisfaction score of 58%.

4.2. Empirical implications

Due to the low satisfaction score, cargo companies can opt to produce different scenarios for such extraordinary situations in the future, and choose to increase their distribution speed and quality. They may try to meet the expectations of their customers through innovation of services. Most of the participants expressed in the study that they could not gain access to the communication tools of the companies and had grievances about the acquisition of information. For this reason, the need emerges for companies to make investment on this matter. Accordingly, in order to provide better quality service, cargo companies can increase satisfaction of customers by taking into consideration their complaints and demands. Lastly, recalibrating the ACSI score at least every 6 months by each cargo company may be helpful in terms of evaluating the service they provide. It should be taken into consideration that it may be beneficial to develop the competitive market through customers choosing cargo companies based on the service they provide.

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CHAPTER 10

EFFECTS OF CORONA VIRUS PANDEMIC ON SELECTED HUMAN RESOURCE MANAGEMENT PRACTICES IN TURKEY

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INTRODUCTION

The impact of the Covid -19 process on human resources management has emerged both in working models and practices. After the 1980s, alternative working models came to the fore with the changing labor market conditions. However, alternative types of work can not be regarded as new. In the historical process of working relations, it is seen that these types of work existed in the 19th century.

In the early 1980's an economic recession experienced so the standart employment workers who are guaranteed the work security and conrtacted are dismissed. But alternative work forms prefered by the weak investment service firms in the 1980's because of the following reasons; with increased competition the companies restructed to obtain flexibility with tecnologic improvements the firms decreased their costs, new emerging international marketes, by making adjustments in work laws goverments made easy of hiring and firing the women take place in labour marketes and employers seek for flexibility.

Flexible working models, which are not new in the historical process, have become a concept that has increased in importance with the covid period. In recent years, the problem created by the concept of flexibility has gained more importance due to cyclical economic fluctuations in general and the competitiveness of low-cost countries in particular. In some cases, recent recessionary trends have favored more flexible, shorter-term arrangements over traditional fixed long-term employment as a survival strategy for firms. This preference provided the opportunity to adjust the revenues-costs balance. Increasing internationalization has been favorable for the market's saturation but makes it difficult to compete in terms of business. Survival in such environments depends on a company's ability to adjust production to demand or produce strong enough to affect the market.

Also, according to ILO data, the proportion of homeworkers in 2019 was 7.9%, compared to 30% for Canada and around 70% in South Africa. In addition, during the pandemic process, human resources management increased OHS measures and arranged offices according to personal protective equipment and distance rules.

The purpose of this study is to reveal how covid-19 affects companies' human resources practices. In the study, interviews were conducted with

experts in human resources departments of national and international companies. The interviews were conducted with 17 experts in human resources field. The interviews were conducted between December 2020 - January 2021.

LITERATURE REVIEW

With the covid in 2020, the labor markets faced global stagnation, short and long-term disruptions in the process called "the new normal". To prevent and control the spread of Covid 19, many governments have supported remote work from home. Companies were supported both financially and legally. While Russia revised its Labor Law, Spain accelerated its public program of supporting digitalization. Compared to the pre-crisis period, it is observed that the rate of those working from home has increased (ILO OECD, 2021 :16).

With the measures taken worldwide, the course of the epidemic remains uncertain. Therefore, human resources practice also changes according to the measures taken according to the pandemic course. It is seen that the human resources policies of the companies that are the subject of research differ in the course of the first period of the epidemic in different periods. Some companies prefer to work from home after the initial stage during the epidemic period and continue or return to office work after the pre-epidemic period.

Although the pandemic has influenced many companies, human resources management has played the role of providing a balance between employees and employers in the covid process of companies. The pandemic process once again emphasized the importance of human resources management. Human resources departments that manage this process well will emerge stronger afterward. One of the most important issues that human resources management should adapt to in the covid period has been working models.

In pandemic period the firms changed their business forms and selling channels but the realations of employee and employer which provided by human resources did not changed in contrary in this period. The human resources personel obliged to manage the risk of workers health and to meet the profit expectation of employer. Pandemic period bring to forth the

importance at human resources. To be sure that human resource personal managed this process successfully will be become more powerfull.

Although it is known that flexible working models are not a new phenomenon, with the pandemic process, it is observed that companies started to prefer flexible working models to adapt to changing conditions. Thus, employers demand flexibility in labor markets, to resist competitive pressure and gain a competitive advantage. Flexibility in labor markets emerges as working hours, working patterns, or wage flexibility. Flexible working models are working models that are excluded from the standard work which is associated with full-time employment. Accordingly, flexible working models are also mentioned as non-standard or alternative working models in the literature. Flexibility is reorganizing the organizations to respond to fluctuations in their environment. (Marino, Gosta 2003:16) With the changing conditions the employers demand flexibility in work laws to abonden the rigit limits and they aim to achive competitivenes by this flexibility. dFlexibility notion also means that for the employers to adapt to changing conditions and for the employees to chose to work where, how, and when. In literature there are various flexibility notions in general it is divided into two as internal and external. Internal flexibilty is short time working and long time working arrangements, external flexibilty is that the firms hire workers when they needed and they can change the number of workers. In this regard temporary employment, sub-contracting, using labour force from abroad can be mentioned. The other things are shrinkage of firms, part time employment, intensified work week, shift work, work from distance, work share and payment according to performance. All of them are considered as external flexibilty ways (Eyck 2003:1). On the other hand flexible labour conracts are (certain time working, temporary working) working free from time and work place, work (work from distance or from home or work on call) (Jan, Stephan , Simon 2013:155). Flexibility in labor markets emerges as work hours, work forms or wage flexibility.

When we look at the relations of flexible work and labour markets there is a dualism. Core labour force is full time and permanent workers. They are important for organization in the long run. The workers of this group have work security .They can reach training to improve their talent can rise in their carrier and have retirement rights and they benefit from insurence. On the

other hand the workers of this group can be fired more difficultly and costly so the firms tend to transfer this type of work to contractors. Second one is surround labour force; it is divided into two as primary and secondary. Primary labour force covers office work, secretary, routine works and loer skilled man power works. This group of workers can be find in any time and they work ful time. Secondary labour force; their work security is lesser than primary group. They are part time workers, temporary workers, workers in certain time and internals supported by public (David Harvey,174).

There are some results of flexible work for labours and laborers. The forms of flexible work are ;the workers who are absent from labour force for a long time ,low skilled or without experince They are disadvantegeous ones of labour markets. This type of workers considers a step toward the full time permanent employment. There are some consequences of flexible working for both employers and employees. Firstly, employers can meet customers' expectations (Ramunė, Milita , Rūta 2018:14) secondly, low absenteeism and turnover rate, thirdly high employee loyalty, fourthly efficiency in recruitment, and job efficiency, besides positive business attitude, lastly a strong relationship between employee and employer can decrease in office work costs (cleaning, food, road, etc.) (Mohamed, Latif, Amal, Raghda 2015:38). Flexible working also reduces building costs (Future of work 2012:10). It means work-life balance and employee satisfaction, besides work-life quality, increased motivation, and decreased stress levels for workers. At the same time, flexible working for workers means less time lost on commuting, which is reflected positively on their physical and mental health (ILO 2019:9). While some think that flexible working models benefit employees and employers, some argue that flexible working models have the concept of insecurity. According to the proponents of this view, employers prefer the flexibility to avoid labor market obligations. In this context, flexible working models are associated with precarious work.

As a flexible model temporary work offers a way of working to change the various areas of business, at the samte time workers make preference of the jobs which are suitable for their talent, this event causes to decrease the amount of labour force circulation (Flexible Forms of Work Position Paper of the International Organisation of Employers the Global Voice of Business 2014 : 6-7).

While flexible forms are various the shift work is the distribution of work hours according to standard work hours. Night work is also among shift works (Pati, Arti, Reinberg 2001:32). On the other hand, flexible work shift is; unlike the daily working hours of a company; it is the way workers work 8-9 hours in different time zones of 24 hours. ILO (2011:4) defines flexible work shifts as the organization of the working hours in which one worker works instead of another worker to work alone to work more than their working hours. According to 93/104 numbered and 1993 dated European Council directive the shift work defined as: The workers in the same work place work for each other in a shift order. There are more than one shift work forms. Permanent shift work: the workers only work in order in shift work (for example morning, afternoon or evening). In this work from the amount of shift is lesser. Continuous shift work: it covers all days of the week without interrupting at weekends and Sundays (shift work). Especially hospitals, factories and jails which provide 24 hours services. In this work from it is possible to work in the evening between 3-11 hours, and between at night 11 o'clock and in the morning at 7 o'clock (Kossek, Michel, Flexible Work Schedules : 539).

Another work form is short time work, employers prefer this type because instead of firing workers they give lesser work hours to workers to overcome the difficulties of crises and recessions and to decrease the costs (Hugh 2020:7). The short time work means job security for workers, and for employers to prevent the close up of work place, and when economy recovers not to hire skilled workers and for government not to increase unemployment (Dimitris, Katja 2019:2). In Turkey short time work not preferred densely but with Covid -19 it gained importance.

Another flexible work model is work from distance. According to ILO classification there are three categories; work from home, for per unit from home covers production in home and productions which made by means of craftsmanship. Work from distance: with the help of information technologies work is done remotely. Home based digital platform work : workers and customers meet on digital platforms (ILO 2021:8). The work from distance in literature means “call work” “remote work”, “virtual work” “distributed work” “work from any where”. In general in remote work the workers provide transfer of knowledge by means of technology work from

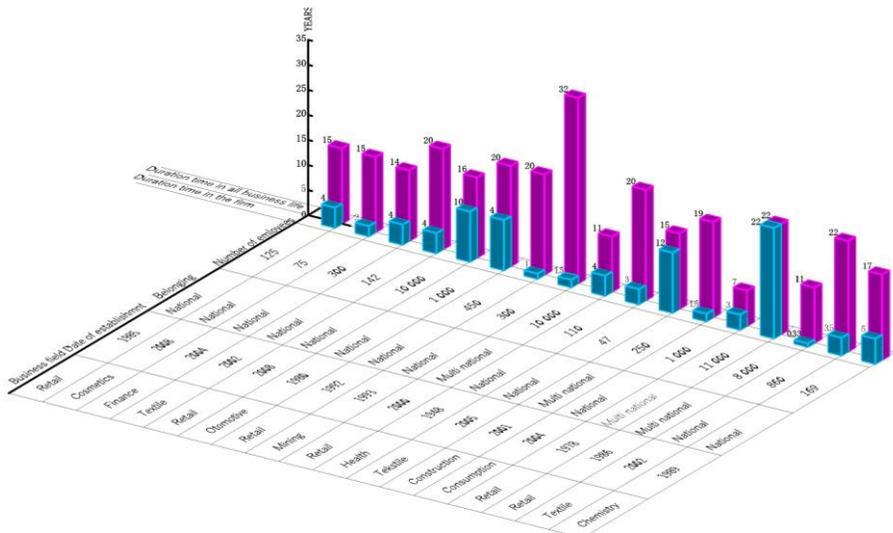
home, work in support office, work in neighbourhood work center or mobile work are happenings of remote work. Work from home and from distance some workers work in home in several days of week. In stallite office work the workers work not in usual offices but in a convinient place for themselves or for customers, or in a firm with firm workers but the equipment is provided by the firm. The other form is in neighbourhood work center, this resembles satellite office work but in this work form there are more than one firms works in the same work place and more than one employers share hiring expenses. Mobile work form ; in this type of work the workers work on travel, at home, in a car or airplane or in a hotel or in a work center. They use telecommunication (Flexible Work Arregtments,11).

METHOD

The interview method was used as a data collection method in this study. The selection of the interviewers was made from experts in the field of human resources. Interviews lasting between 30 and 45 minutes were conducted with 17 interviewers using a semi-structured interview form. Interviews were done online or by phone. 3 of the interviewers were interviewed by phone, and 14 of them were interviewed via Zoom or Teams. The interviews were conducted between December 2020 - January 2021. The interviewers work as human resources professionals in various business lines in the private sector.

CONCLUSION

The indicators of the companies and the interviewers are included in graphic 1. While 3 of the human resources experts interviewed work in international companies, 14 of them work in national companies. The companies operate in retail, cosmetics, health, chemistry, textile, mining, automotive, finance, fast-moving consumption, and construction sectors. The seniority period of the interviewers in the field varies between 11 years and 32 years. On the other hand, the working period of the interviewers in their companies varies between 4 months and 10 years.



Graphic 1 : Indicators of companies and interviewers

It is seen that the participants determine their working models according to the course of the covid period. When Covid's contagiousness is high, shift work, work from home is preferred, while office work is preferred when it is less. The rate of companies that prefer the office working model is 6%. However, it is seen that work from the home strategy is preferred from the beginning, and some companies will continue this way of working after the covid period. The companies in question continue to work in the offices by taking the necessary preventive measures. The rate of companies applying the work from the home model was 19%. while the rate of shift work was 14%. At the same time, some companies prefer to work from home on certain days of the week and work from the office on certain days. The rate of this working model, described as a hybrid model by companies in practice, is 16%. In fact the participants stated that they go to the company 2 days a week and work from home on the other days. For example, participant 15 stated that she works from home for 3 days and go to the office for 2 days.

It is seen that some companies also benefited from short-time working allowance during the Covid period. The rate of those who benefited from short work allowance was 23%. Participant 9 stated that they benefited from the short-time working allowance for up to 3 months. Participant 15 stated that they benefit everyone who can legally benefit from short-time working.

satisfaction of employees during the covid process. Those who do a covid survey for employees are 7%. For instance, participant 8 stated that they conducted an employee satisfaction survey specific to the covid period. Similarly, some companies try to motivate employees with online communication training opportunities. During this period, companies' rate that highlighted motivation practices was 10%. Participant 15; stated that they hold motivation meetings with store managers every month, while participant 9; stated that they practiced laughter yoga. Participant 13; on the other hand, stated that they created a digital workshop, digital publications, and a library during the covid period.

The rate of managers expressing the flexible working models implemented specifically to the Covid period is 10%. During the Covid period, the rate of companies that made additional payments or offered internet packages to support home workers was 7%. Participant 13 stated that they provided Internet desk chair support to support those working from home. During this period, it is seen that the companies support home workers. However, it is observed that the budgetary supports of the human resources practices within the international or national companies differed. The training process is another human resource application specific to the Covid period. Human resources managers drew attention to the increase in online training and covid-related training in this period, just as in the recruitment process. The rate of companies emphasizing the diverging training process is 16%.

2 QUESTION		INTERVIEWER'S ANSWER																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent	
Human resource practise in the covid era	Covid measurese	██████████					6													%20
	Education	██████████				5														%16
	Recruiting	██████████					6													%20
	Internet package	██████		2																% 7
	Covid employee survey	██████		2																% 7
	Motivational applications	██████████			3															%10
	Online communication	██████████			3															% 10
	Flexible working	██████████			3															%10

The third question is related to the performance management strategies during the period.

The results show that during the Covid period, the performance targets were largely not realized but were revised. This rate was 59%. However, some companies do not implement the performance evaluation system during this period. The rate of those who did not perform performance evaluation during the covid period is 35%. 6% did not make any changes in performance targets. The interviewers were also asked whether the employees experienced performance pressure under this question. Some human resources managers stated that employees initially felt performance pressure and felt unambiguous. It has been stated by other human resources managers that there are employees who do not feel the pressure of performance. Apart from these, participant 15 said that they revised their performance targets during the covid process, stated that they paid half wages to those who comply with the pandemic rules.

3 QUESTION		INTERVIEWER'S ANSWER																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent	
Performance evaluation practices in the covid era	No performance evaluation	██████████						6												%35
	Didn't success their perormange targets/ revised their performance targets	████████████████████										10								%59
	No change	████	1																% 6	

The fourth question is about wage policies during the Covid. Looking at the wage policies in the Covid period, it can be said that the rate was increased when the pre-covid and the covid period were compared. In this context, the rate of companies that did not make any changes in their wage policies during the Covid period is 52% which is the highest rate. The other answer, which is the second-highest rate, is that during the covid period, there was a restriction in fringe benefits whose ratio was 29%. Participants explained that and bonuses given to employees due to the failure of

6 QUESTION		INTERVIEWER'S ANSWER																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Benefit rate of short work allowance	% 30-35	█ 1																% 6
	None	██████████ 5																%30
	% 80	█ 1																% 6
	% 100	██████ 3																% 18
	% 60	██████████ 4																%24
	% 75	█ 1																% 6
	% 10	█ 1																% 6
	% 50	█ 1																% 6

In the seventh question, the participants were asked to evaluate the employer and the employee's difficulties during the covid period. In this regard, the most common difficulties faced by human resources managers were cost pressure, communication, and increased workload. The rate of these difficulties corresponds to 16%. Under the communication section, the participants stated that they could not communicate face to face and had problems communicating with the employees. In the context of communication problems, 8 of the participants stated that they had difficulty providing the flow of information about the covid process. On the other hand, the participant talked about the difficulties encountered; participant 12 highlighted that constant work led to a loss of sense of time working continuously during the covid process increased the workload. Another highest percentage was the difficulties encountered in the legal process, with 14%. Participants expressed the problem they experienced due to the legal uncertainties during the covid period and the lack of sufficient knowledge of the authorized people. Another difficulty the participants face is that they have to balance between the employer and the employee with 11%. The participants similarly expressed the decrease in organizational commitment. This rate is 6%. The decrease in jobs, postponement of projects, physical conditions of the workplace, supply of labor, motivation, adapting employees to the covid process, and employees not doing work were other difficulties.

7	QUESTION	INTERVIEWER'S ANSWER																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent
Difficulties in the Covid era	Legal difficulties					5													%14
	Balancing between employer and employee				4														%11
	Business interruption	1																	%3
	Suspension of projects	1																	%3
	Physical conditions of workplace	1																	%3
	Cost pressure						6												%16
	Communication						6												%16
	Increased workload						6												%16
	Loss of organisational commitment			2															%6
	Supply of labor	1																	%3
	Inability of employees to adapt to covid measure	1																	%3
	Motivation	1																	%3
	Employees not doing business	1																	%3

In the 8th question, the participants' opinions about the effect of the flexible working model on workload were taken. Whether working from home increases, the workload was evaluated by the participants. Employees answered this question both in the context of headquarters employees and by considering field workers. It is seen that there is not a big difference between the ratios in the answers. As a matter of fact, the rate of those who say it increased their workload is 47%, while those who say that it did not increase their workload is 53%.

8 QUESTION		INTERVIEWER'S ANSWER																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent		
The effect of flexible working	Increase the workload	██████████							8											%47	
	Did not increase workload	██████████								9											%53

During the Covid period, the participants were asked how many people they recruited. In this period, some companies recruited to replace employees or increase staff and stopped the recruitment process. As a matter of fact, the rate of companies that do not recruit is 23%. Similarly, the rate of companies that recruit 20-50 people between 1-19 people is 23%. On the other hand, the rate of companies that recruit 51-100 people is 7%, while companies that recruit 101-350 and over 350 people is 12%. It is seen that recruitment continues in the retail sector.

9 QUESTION		INTERVIEWER'S ANSWER																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent
Number of recruited people	1-19	██████████			4														%23
	20-50	██████████				4													%23
	51-100	█	1																% 7
	101-350	██████████		2															%12
	351 and above	██████████		2															%12
	No recruitment	██████████				4													% 23

The tenth question is related to the possible future of human resources. After the covid period, it is seen that the possible path predicted by the participants in human resources management is digitization, whose ratio is 38%. Participants stated that they anticipate digitalization in human resources recruitment and training, while 23% stated that flexible working models would become permanent. Some human resources managers even stated that they had prepared their plans in this regard. The rate of those who stated that the meetings and communication could be held online is 9%. Other opinions corresponding to the rate of 5% are the importance of the concept of productivity, increase in recruitment by providing an atmosphere of trust, organizational commitment culture, human resources management gaining more importance, changing the employment structure, and the number of jobs will increase. Participant 1 stated that the working life would not be the same as before, the employment side would be difficult, and there would be no personnel doing intermediate jobs. Besides, participant 12 stated that the companies that support employees would win when they return to normal working life. Participant 9 thinks the focus will be on flexible working, creating a culture of loyalty. Participant 14 said unmanned safe applications would gain speed by allocating a share to technological structures, and working from home will continue. The rate of companies stating that with digitalization, they will seek to outsource some human resources processes will bring along the dismissal process is 1%. The participants also stated that the employment structure would change with digitalization, and recruitment criteria would be established accordingly.

10 QUESTION		INTERVIEWER'S ANSWER																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent	
Prediction of human resources management in the covid period	Flexible working	██████████					5													%23
	Increased online communication	██████		2																% 9
	Digitalization	████████████████████								8										%38
	Increase in the number of fired staff	████	1																	% 5
	Organizational commitment culture	████	1																	% 5
	Productivity	████	1																	% 5
	Human resources will increase in importance	████	1																	% 5
	The structure of employment will change	████	1																	% 5
	The number of jobs will increase	████	1																	% 5

During the Covid period, it is seen that the greatest rate of occupational health and safety measures taken to prevent the spread of the disease are masks, disinfectants, social distance, and the desired measures in the legal process. This rate is 52%. Another measure taken is workplace regulation in the context of covid measures. It is stated that especially the common use areas are arranged in accordance with the social distance, frequent cleaning, and meeting rooms are arranged accordingly. The rate of those who express it this way is 14%. 7% of the participants stated that they took precautions within the framework of the legal measures determined for covid, established a regulation procedure on covid, and regulated their working hours accordingly.

11 QUESTION		INTERVIEWER'S ANSWER																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Percent						
Occupational health and safety measures taken regarding the covid period	Legal obligations	██████		2																% 8					
	Disinfectant, temperature measurements, HES code application	██														14									%54
	Nurse recruitment	████	1																	% 4					
	Increasing the occupational health and safety team	████	1																	% 4					
	Procedure / regulation	██████		2																	% 8				
	Reorganization of dining halls	██████████				4															%15				
	Regulation of working hours	██████		2																	% 7				

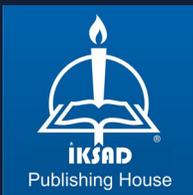
The participants were asked if they had anything to add as a final question. Participant 12 stated that it has gone through many different processes in the history of humanity and that remote, flexible working should be increased for jobs that can be done remotely due to the nature of the work.

Finally, it is seen that the impact of covid on human resources practices is different. Whether the companies in question are national or international differentiates the situation. However, it is observed that the human resources practices of national companies also differ among themselves. Similarly, the practices of international companies also differ. As a matter of fact, while some companies allocate additional budgets for their employees in the home-based working model, some others limit fringe benefits. However, it is a fact that companies that can manage the process well in the covid period, provide opportunities for their employees and support them will be successful after the covid period. In this period, expenditures, which are seen as an extra cost to companies, are likely to return to companies as organizational commitment in the long run. Although there are differences in the application of flexible working models of companies, it is predicted that there will be companies that will continue to hybrid model after covid. The companies in question will prefer the hybrid model in the form of both offices and home working in jobs where working from home is appropriate due to the nature of the job. Therefore, flexible working models, which existed in the pre-covid period but have a very high application rate, will become important. Governments will need to regulate Labor Laws in this direction and elaborate these articles. The importance of human resources management for companies before and after the Covid era has once again emerged.

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