

# Psychological effects of COVID-19 phobia on industrial consumers: a case study in Turkey

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## Abstract

**Purpose** – This study aims to discover whether COVID-19 phobia has a positive and significant effect on the stress, depression and anxiety levels of industrial consumers in addition to reveal whether environmental awareness plays a mediating role between COVID-19 phobia and stress, depression and anxiety.

**Design/methodology/approach** – In this study, a quantitative method was used to reveal the role of anxiety, depression and stress (psychological effects) and environmental awareness caused by covid-19 phobia on industrial consumers. The universe of the study is small and medium-sized enterprises operating in the province of Sanliurfa, which is located in the southeast region of Turkey and the second largest city in the region, and are industrial customers. Questionnaire method was used in the study. In addition, data were collected from 406 people who agreed to participate in the study. In the study, in which intermediary and regulatory analyzes were made, the process macro program was used.

**Findings** – The results show that there is a medium relationship between COVID-19 phobia and environmental awareness; and COVID-19 phobia and stress, depression and anxiety. No relationship was found between environmental awareness and stress, depression and anxiety. COVID-19 phobia was found to have a positive and significant effect on environmental awareness and stress, depression and anxiety, while environmental awareness was found to have no effect on stress, depression and anxiety. Finally, environmental awareness was found to play a mediating role between COVID-19 phobia and stress, depression and anxiety.

**Research limitations/implications** – In this study, four hypotheses were developed. Of these hypotheses, three are for the simple effect and one for the mediation effect. Out of four hypotheses, three were supported. The most important inference obtained from the study was finding the mediation effect of environmental awareness between COVID-19 phobia and anxiety, depression and stress.

**Originality/value** – To the best of the authors' knowledge, no studies in the literature were made on the relationship among COVID-19 phobia, environmental awareness, stress, depression and anxiety. This study also examines the mediating effect of environmental awareness in the relationship between COVID-19 phobia and stress, depression and anxiety. The fact that the study is on the negative effects of the pandemic on one of the most affected occupational group also increases its original value.

**Keywords** COVID-19 phobia, Anxiety, Depression, Stress, Environmental awareness, Industrial customer

**Paper type** Research paper

## 1. Introduction

First appearing in 2019 and then causing major health, social, psychological and economic problems around the world in 2020, COVID-19 has become one of the events that will never be forgotten. The reason that the population of the study consists of small- and medium-sized enterprises (industrial customers) is that it is one of the sectors that has been affected

by COVID-19 the most. Besides, we have not come across a study that analyzes how COVID-19 affects anxiety and stress levels in SMEs. Named “The Novel Coronavirus” (SARS-Cov-2) that first appeared in the Wuhan province of China in December 2019, COVID-19 spread all around the world in a short period. World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020. Researchers who

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compared the course of the spread of the previous viruses found that SARS-Cov-2 spreads a lot faster and is deadlier. The first case in Turkey was confirmed on March 10, 2020 (Işıklı, 2020: 4).

There are many studies in the literature on the destructive, deadly and psychological effects of COVID-19. Değirmenci (2020) referred to the thoughts of people working in the transportation sector in his study, "The mediating effect of endurance to hardships between the perception of Covid-19 and social anxiety." In the study, it was mentioned that age variable has an effect on social anxiety and that COVID-19 variable was used as a control variable in this relationship. It was found that the group of people that experiences COVID-19 anxiety the most is the age group of 26–33 years and that the perception of COVID-19 causes psychologically destructive damage to transport sector employees, and individuals in such difficult situations have more strength to combat psychological and financial difficulties (Miller, 2020: 92–93). Aşkın et al. (2020) mentioned how the COVID-19 pandemic is a form of existential crisis for all humanity, which shook the social and economic order, the sense of trust in institutions, tumbled established values and created uncertainty, fear and anxiety (Aşkın et al., 2020). In another study, Duran and ve Acar (2020) focused on the worldwide measures taken against the pandemic such as curfews, quarantine, online education, suspension of sports competitions, closure of business and border shutdowns. All sectors of the economy, from tourism to education, agriculture to energy, civil aviation to financial institutions, are negatively affected by these measures. In addition to the sociocultural and psychological consequences of these measures, the biggest consequence is experienced economically. International Labour Organization estimates that approximately 5–25 million people in the world will be unemployed at the end of this pandemic. The International Monetary Fund forecasts that the world will enter recession in 2020 and the world economy will shrink by 3%. Many countries such as the USA, Italy, Spain, Japan and Turkey are expected to experience economic contraction in 2020, while in the Eurozone, this contraction is expected to reach 10%. On the other hand, all these measures negatively affect macro indicators such as current account deficit, budget deficit, public spending, inflation and unemployment (Duran and ve Acar, 2020: 65–66). This study aims to reveal the psychological effects of COVID-19 phobia on industrial consumers and analyze the role of anxiety, depression and stress in this context. The study also examined the moderating role of environmental awareness in the relationship between COVID-19 phobia and its psychological effects.

The current market can be divided into two parts, which are consumer market and industrial market. The most evident difference between industrial markets and consumer markets is the characteristics of industrial customers in addition to the products and services. The demands of industrial customers regarding the products they buy are related to their area of activity. Industrial customers are customers who have knowledge and expertise on the products and services they demand and therefore have a high level of awareness (Kamibi'r and Nart, 2008: 98). Population of the study consists of small enterprises that fall under the category of industrial consumers in the Şanlıurfa Chamber of Crafts. Şanlıurfa is the second biggest province in the southeast region of Turkey. According to the face-to-face interviews made with the members of Şanlıurfa Chamber of Crafts, there are 14,225 small businesses

(June 29, 2020) Looking at the classification of these businesses; It consists of 3308 workplaces from the food sector, 597 cafes, coffee shops, restaurants, tea shops, 5051 workplaces for clothing, 555 workplaces for barbers, 320 fuel oil shops and 625 jewelry shops. In addition, it consists of 834 businesses as telephone dealers, 999 businesses for repairers, 418 businesses for furniture, 336 businesses for electronics and 1807 workplaces other than those listed. The reason that small business were preferred as industrial consumers for the population is that they have been the most disrupted class during the pandemic in terms of production and services and that they have a low income and limited opportunities.

The reason that small- and medium-sized businesses (industrial customers) operating in various business lines were chosen as the population of the study is that it is the sector that has been affected by the pandemic the most. Additionally, to the best of the authors' knowledge, no study was found in the literature examining the effects of COVID-19 phobia experienced by business owners on anxiety and stress. The study examines COVID-19 phobia, anxiety, depression, stress and environmental awareness. Psychological distress is defined as the state of emotional pain characterized by the symptoms of depression (loss of interest, sadness and despair) and anxiety (restlessness and tension) (Altun et al., 2019: 24). While emotions like success, optimism and happiness are considered positive emotions, ones like anxiety, depression and stress are considered negative (Fredrickson and Joiner, 2002). In this study, stress, depression and anxiety are classified among negative emotions, and these feelings negatively affect not only the society but also employees in the workplace (Kılıç, et al., 2016: 319). The number of coronavirus-related deaths is still increasing, and the virus has not yet been fully controlled. During outbreaks, people often experience psychological difficulties like fear, panic or phobia. Outbreaks like severe acute respiratory syndrome, middle east respiratory syndrome, Ebola and Zika are known to have had serious negative effects like fear and anxiety (İbrahim, 2016; Kim and Song, 2017). Similarly, constantly being exposed to news regarding coronavirus through written, visual and social media causes anxiety and increases the level of fear.

According to the data dated January 7, 2021, of the Digital Transformation Office of the Presidency of Turkey, there have been 87,654,861 official cases and 1,890,824 deaths worldwide (<https://corona.cbddo.gov.tr/>). The data of the WHO dated January 7, 2021, shows that the USA is at the top of the list with 20,870,913 confirmed cases and 354,286 deaths. Turkey is the 12th with 1,469,593 confirmed cases and 22,070 deaths. According to the website of the WHO, 15 countries have had no confirmed cases of COVID-19.

There has been only one study in the Turkish literature that examined the behaviors of industrial customers toward the COVID-19 pandemic. The mentioned study was conducted by İnce (2020) and examined the financial problems faced by the small business owners in Bitlis during the pandemic. Even though there are many factors causing depression and stress, these factors increase in number during outbreaks or natural disasters. Especially the impacts of COVID-19 like leaving the normal daily life, big changes in social, economic and psychological aspects, loss of income and jobs have caused depression and stress levels to increase (Çelik and Diker, 2021: 18–19).

The main problem statement of this study is as follows “does COVID-19 affect environmental awareness?” It is thought that this study will contribute to the literature with its analysis of the effect of COVID-19 phobia on environmental awareness. In the literature review, to the best of the authors’ knowledge, no study was found that analyzed COVID-19 phobia and depression, anxiety and stress as premises of environmental awareness.

This paper first explains the concepts of the study. Later, it includes the hypotheses, methodology, findings, discussion and conclusion.

## 2. Conceptual framework

This section of the study investigates COVID-19 phobia, anxiety, depression, stress and environmental awareness in the light of the literature.

### 2.1 COVID-19 phobia

On December 31, 2019, in the Wuhan province of the Hubei state of China, WHO Representative Office in China reported pneumonia cases whose etiology is unknown. Other cases were reported in different countries on January 7, 2020. Because of the spread speed and its symptoms, the illness was named the novel Coronavirus (2019-nCoV) (Ministry of Health, 2020; Zhu *et al.*, 2020; Ekiz, 2020, p. 140).

Many countries have suffered from negative psychological, social and economic effects. These negative psychological effects cause conditions that include stress, depression, psychosocial and psychosomatic disorders. Research shows that specific fears are the most common psychiatric disorders worldwide (Bandelow and Michaelis, 2015). According to the diagnostic and statistical manual of mental disorders (DSM-5) criteria, the main characteristics of specific fears are fears and worries that are limited to the source of the anxiety. When an individual is faced with a specific situation or an object, they can feel anxious and can be diagnosed with anxiety. The anxiety level of an individual may vary depending on the closeness to the object or situation. Additionally, some individuals do not need to overreact to an object or a situation for them to be diagnosed. Given these circumstances, the unconditional fear and anxiety felt by the individual would be sufficient for a diagnosis (APA, 2013). These fears are known to trigger other anxiety disorders, suicidal thoughts, depression, physical, mental or affective disorders (Ausin *et al.*, 2020).

The death toll of COVID-19 is still increasing, and the virus has not been fully controlled yet. During epidemics, people often experience various psychological difficulties, such as fear, panic or phobia. Similar outbreaks such as HemagglutininNöraminidaz, SARS, MERS, Ebola, Zika are known to have had serious negative effects, causing fear and anxiety disorders (Ibrahim, 2016; Kim and Song, 2017). Similarly, frequently encountering COVID-19-related news on written, visual and social media increases the level of fear. COVID-19 increases the risk of schizophrenia, anxiety, depression and acute stress disorder among especially the health-care workers and the rest of the public (Hu *et al.*, 2020; Huang *et al.*, 2020; Huang and Liu, 2020; Kang *et al.*, 2020; Li *et al.*, 2020; Li *et al.*, 2020). Additionally, researchers predict that the negative effects of COVID-19 can cause extreme fear of diseases, anger and harmful substance abuse like alcohol/tobacco, divorces and suicidal thoughts (Dai *et al.*, 2020).

Phobias are specific forms of anxiety that are defined as constant and extreme fear of an object or situation. They are categorized into three groups (APA, 2013): social phobia, agoraphobia and specific phobia. DSM-V mentions five specific phobia types. These are fear of animals (snakes and spiders), fear of natural environment (height and storms), fear of blood-needles-injury, situational fears (public transport, elevators and planes) and other fears (choking and loud sounds). Therefore, we analyzed COVID-19 phobia, which can be classified as a distinct phobia in DSM-V that is characterized by permanent and extreme fear against COVID-19.

Specific types of anxiety and stress can occur depending on the characteristic qualities, genetics, physiological qualities of the individual and environmental conditions (Apa, 2013). In this sense, the perception of COVID-19, pandemics or natural disasters can act as environmental triggers for anxiety and stress. People develop unstable cognitive, affective or behavioral responses to coronavirus-related objects and situations, which can cause a serious change in their psychological behaviors. Coronavirus disrupts the behaviors of people that they are used to, and this causes anxiety and stress (Li *et al.*, 2020; Duan and Zhu, 2020). People frequently experience the fear of being infected with the virus. Previous studies and experiences show that outbreaks like MERS, SARS or Ebola caused harmful emotions and thoughts like short- and long-term fears, anxiety, stress, depression, despair and hostility (Colorado, 2017; Qi *et al.*, 2020). COVID-19 is also causing people to experience fear, and as it spreads faster, it is predicted that it may cause psychopathological problems due to its infection rate, lack of treatments and the increase in the death rate (Duan and Zhu, 2020; Gao *et al.*, 2020).

### 2.2 Anxiety

Anxiety can be defined as the feeling of danger, worry and fear in the face of an unwanted situation (Zhu *et al.*, 2020; Republic of Turkey Ministry of Health, 2020). Anxiety is a condition of unreasonable fear or uneasiness caused by a dangerous situation (Manav, 2011). It is a psychological condition that triggers physical and emotional concerns that stems from the thought of being in danger (Özdelikara *et al.*, 2018). COVID-19 anxiety causes fears such as being infected with COVID-19 even without any physical discomfort (Aydemir *et al.*, 2013). According to Barlow (2000), anxiety is generally about the future. The exact reasons for anxiety disorders are unknown. However, genetic predisposition, in addition to traumatic experiences, is thought to cause anxiety disorders (Tutku *et al.*, 2020).

A study on the psychological problems of small enterprises shows that when a tradesman suffers from high anxiety, their work efficiency is decreased by 10% (Weiller *et al.*, 1998). Annual financial loss caused by anxiety have been found to be \$42bn–\$47bn in the USA even during the 1990s (Rice and Miller, 1998). Greenberg *et al.* (1999) discovered that employees who are having anxiety-related troubles may not want to go to work or may want to keep their workplace closed.

### 2.3 Depression

Depression is defined as a disorder that stems from long-term anxiety and sadness that have negative effects on the body, thoughts and emotions (Johnson and Indvik, 1997). Çelik and Diker defined depression as “a situation where anxiety, sadness,

tiredness and hopelessness become more evident” and similarly defined stress as the combination of factors destroying or compelling individual integrity. In recent years, the cases of depression have been increasing rapidly (Kılıç *et al.*, 2016, p. 319). A study on employees found that people suffering from anxiety and stress are more prone to depression (Wetherell *et al.*, 2001; Mineka *et al.*, 1998). The study by Wetherell *et al.* (2011) also shows that depression is a major source of anxiety and stress.

While approximately 18 million people in the USA suffered from depression before COVID-19, it now poses a threat to all humankind (Shoor, 1994). Everyone around the world is in a constant state of worry because it is not certain when the virus will end, it does not have a certain treatment and it is spreading very fast. This state of worry may lead to depression. According to Anderson (1993) one of the top five problems that business owners experience is depression. Together with the COVID-19 pandemic, business owners and employees have started experiencing psychological problems.

#### 2.4 Stress

Selye (1936) explains stress as the reaction of the human body in a situation that requires physical and emotional adaptation. Lazarus (1966) stated that stress may occur when there is a threat to the well-being of the individual, which can inhibit them from achieving the wanted level of success. Raymond (2000) suggested that stress can occur in times of uncertainty such as an untreatable illness.

Stress levels can vary by country as well as by sector. Stress (Dyck, 2001) and the causes of stress are studied quite a lot today. Many researchers (Brymer *et al.*, 1991; Lo and Lamm, 2005; Qureshi *et al.*, 2013) have named the following reasons as the main sources of stress: excessive workload, role ambiguity, the uncertainty of the continuity of work activities, decrease in the number of customers, time pressure, long working hours, role conflict, low and unsteady income, closing the workplace for a long period and job insecurity.

Studies show that stress is harmful both for the individual and for the society. It is estimated that 85% of the accidents happening in a workplace are related to stress. Kim *et al.* (2015) found that employers who are happy with their jobs are less likely to have a tendency to leave their jobs compared to the ones who are dissatisfied with their jobs and that professional commitment plays an important role in decreasing job dissatisfaction. Depression, stress, anxiety and other emotional and mood disorders caused by coronavirus highly increase the health expenditures of the countries. Stress also negatively affects the performances of the employees, causes inefficiency in the workplace and increases monetary expenses.

#### 2.5 Environmental awareness

Environmental awareness is the necessary knowledge that people need to prevent environmental problems and protect the environment. Environmental awareness basically means being aware of the environment and behaving according to it (Nazlıoğlu, 1991). The studies in the literature define environmental awareness as behaving consciously toward the environment, not harming the environment and having the sufficient information and skills to prioritize using resources mindfully (Kızılaslan and Kızılaslan, 2005; Öztekin, 2006).

Environmental awareness is an important indicator of human attitude and behaviors toward environmental problems aiming to live in a healthy and balanced environment (Çolakoğlu, 2010). Individuals who are aware of environmental issues behave ecologically, are conscious consumers and have ecological production knowledge when it comes to solving environmental problems (Çifci and Şakacı, 2015; Onur *et al.*, 2016). The most basic way to solve environmental problems is to educate people on behaving in an environmentally friendly way. The positive change in the behaviors toward the environment helps people be more aware of environmental issues (Şafak and Erkal, 1999; Bozkurt and Cansüngü, 2002; Karataş, 2014). Environmental awareness can be explained as a learning process that improves environmental consciousness by helping people acquire the necessary information, skills and experiences to solve environmental problems (Karataş, 2014).

Environmental awareness is thought to be the most important factor in the development of environmental consciousness. Public authorities play a major role in the acquisition of environmental awareness. To develop environmental awareness, it is necessary to include courses on the environment and environmental awareness starting from preschool to primary schools, middle schools and higher education (Demirkaya, 2006; Karataş, 2014).

There are many studies in both national and international literature that focus on environmental awareness, environmental education and environmental consciousness. McKeown-Ice (2000) studied the environmental awareness levels of the teacher training programs of universities. The research has found that most of the universities in the USA give the teacher candidates environmental awareness courses and that the environmental awareness trainings differ depending on the university. Çabuk and Karacaoğlu (2003) studied whether demographics of the students studying in Educational Sciences Faculty of Ankara University affect environmental awareness. The results suggest that environmental awareness and behaviors change depending on the department the students are in and their personalities. Wong (2003) made a study on university students in Beijing and identified the thoughts of university students on China's environmental and developmental problems. The study found that the students were aware of the environmental problems faced by China and the world and that they think that there should be more nongovernmental organizations to protect the environment. Morgil *et al.* (2004) studied how computer-aided environmental awareness training affects the level of environmental awareness and knowledge in university students. The research was made on senior-year students in the department of chemistry education. The students in the study were trained with a computer-aided environmental awareness training program for two weeks after a preliminary test. After the computer-aided training, the level of environmental awareness and knowledge of the students increased; however, the level of environmental awareness consciousness decreased.

### 3. Development of the hypotheses

In the study made by Kaplan *et al.* (2020), the participants expressed that the pandemic made them feel the importance of the environment and living a healthy life (Kaplan *et al.*, 2020: 593). Durmuş and Dölek found that the participants felt that the reason biological disasters like COVID-19 emerge is

because of the irresponsible attitude of people toward the environment. Some participants thought that the outbreaks are biological weapons brought about by the international trade wars. Overpopulation is also seen as a cause of many natural and artificial disasters. As the global population increases, people expand their living spaces and thus interfere in the natural balance. During the 1650s, the global population increased by one billion in 250 years, while that number decreased to 12 years at the beginning of the 2000s. This is the proof of rapid population growth. As a result of the population growth, natural balance is disturbed, existing resources are not being equally distributed and biological disasters are emerging. Overpopulation, economic and technological changes and the development of transportation services have been causing the natural balance to deteriorate faster. Thus, it is thought that unconscious intervention will cause more pandemics to emerge and that COVID-19 phobia will increase environmental awareness (Durmuş et al., 2021: 352). During 2020, there has been a 6% decrease in the energy demand and for energy sources like petrol and natural gas, increase in the demand for low-carbon energy sources and an overall 8% decrease in carbon emissions. However, together with the COVID-19 recovery plans, an approximate 6% increase in carbon emissions is expected. The same study emphasizes that the efforts to reverse the effects of COVID-19 on the industry and trade can cause the investments on sustainability and green development to decrease, which may, in turn, increase carbon emissions (Koçak and ve Aydın, 2021: 244). In light of these information, the *H1* hypothesis was developed:

*H1.* COVID-19 phobia has a positive and significant effect on environmental awareness

Global warming is causing the ozone layer to get thinner and interfering with the sustainability efforts. If the current climate change and global warming trends continue, health problems will increase day by day. Increasing numbers of diseases and deaths of people with chronic illnesses and elderly, respiratory diseases caused by air pollution and psychological disorders stemming from increasing heat are the primary health problems (Aras and Demirci, 2020: 77). The current and future outcomes of climate change can cause stress, trauma, fear, depression and anxiety. The extreme weather conditions and the uncertainty regarding the future of ecosystems can trigger fear and anxiety and disrupted natural balance can cause stress (Gezer and İlhan, 2021: 197).

Natural disasters are bi public health problems as they cannot be predicted, cause loss of life and property, disrupt the health system, damage the economy and psychosocial well-being and cause serious health problems. Different age groups react differently to a natural disaster. Children tend to experience anxiety and sleep problems. School-age children may experience a decline in their academic success, loss of communication with friends. Adults may struggle with substance use disorder and the deterioration of social relationships (Yorulmaz and Karadeniz, 2021: 392–393). The following hypothesis was developed in the light of these information:

*H2.* Environmental awareness has a positive and significant effect on anxiety, depression and stress

COVID-19 has created an ever-changing complex environment. This causes the fear of losing loved ones, being infected, infecting someone else, not being able to afford food (Biçer et al., 2020: 217), losing jobs and psychological problems. These kinds of thoughts threaten the physical health and lives of people, increase the level of stress and trigger many psychological disorders like anxiety and depression (Harper et al., 2020; Pakpour and Griffiths, 2020).

Described as a “disaster” in the study of Işıklı (2020), COVID-19 has had many negative effects on the daily lives and psychological states of people and on the economy and society (Işıklı, 2020: 6). Rossi et al. (2020) have found in their study conducted with 18,147 participants that the participants are going through troubled and stressed times because of COVID-19. Long periods of quarantine, curfews and the health problems that come with COVID-19 have caused many unfavorable things to occur in people’s lives (Mihashi et al., 2009; Pellecchia et al., 2015). The negative psychological, economic and social effects of COVID-19 have been felt all over the world. These negative outcomes have caused psychosomatic and psychosocial disorders. Research show that specific phobias are the most common psychiatric disorders (Bandelow and Michaelis, 2015). According to the criteria of DSM-V, the main characteristics of specific phobias are the source of the anxiety and limited fears or anxiety. An individual can experience anxiety when faced with a specific object or a situation and can be diagnosed with anxiety. The level of anxiety can vary according to the proximity to the object or the situation. On the other hand, someone may not show an extreme anxiety enough to be diagnosed with a specific phobia. When we consider these situations, an unconditional fear and anxiety can be enough for a diagnosis (Apa, 2013). These fears can trigger other anxiety disorders and thus trigger suicidal tendencies, depression and physical and psychological affective disorders (Ausin et al., 2020). It has been found that people with high fear toward COVID-19 also experience disruptions in their mentalities. The studies in the literature have revealed a connection between COVID-19 and stress, satisfaction with life, anxiety, mobbing, fear and anxiety (Kalafatoglu and Yam, 2021: 307). In the light of these information, the following hypothesis was developed:

*H3.* COVID-19 has a positive and significant effect on anxiety, depression and stress.

After the spread of COVID-19, negative emotions (anxiety, depression and anger) increased while positive ones (Oxford happiness) decreased (Li et al., 2020). According to Anderson (1993), depression is one of the five main problems experienced by employees. Depression-related disorders affect both the individual themselves and their inner circle. Depression-related health expenses also negatively affect the financial structures of the countries (Johnson and Indvik, 1997; Handrich, 2000). In the light of the above information, *H3* hypothesis was developed. According to the study made by Stoudemire (1986), the place where depression cases were seen the most is workplaces. Hereunder, two-thirds of the depression-related expenses is caused by workplaces. According to Johnson and Indvik (1997), the average cost of an employee experiencing depression is \$3,000. Barlow (2000) suggests that anxiety is mostly caused by concerns about the

future. The parents of the children who are hospitalized are going through serious mental health problems like anxiety and depression (Yuan *et al.*, 2020). Depression is mostly caused by past experiences. Studies show that people who experience anxiety are more prone to depression (Wetherell *et al.*, 2001; Mineka *et al.*, 1998). According to the study of Wetherell *et al.* (2001), anxiety has a significant role in causing depression. In the light of the above information, *H4* hypothesis was developed. Environmental awareness is related to the amount of information regarding the environment. On the other hand, there are also studies in the literature that links environmental awareness with the income of the parents and socioeconomic level. These studies concluded that the children of low-income families with low socioeconomic status are more protective of the environment (Tunç *et al.*, 2010: 237). The study of Afsar *et al.* (2016) shows that environmental awareness in employees affects their tendency to behave in an environment friendly way and that emotional participation is connected to environmental knowledge and awareness on some level. A study on the psychological problems of industrial customers found that high levels of anxiety cause the productivity to drop by 10% (Weiller *et al.*, 1998). Even during the 1990s, the annual economic loss caused by anxiety in was found to be \$43bn–\$47bn in the USA (Rice and Miller, 1998). Greenberg *et al.* (1999) also revealed how workers who are suffering from anxiety tend to be unwilling to work.

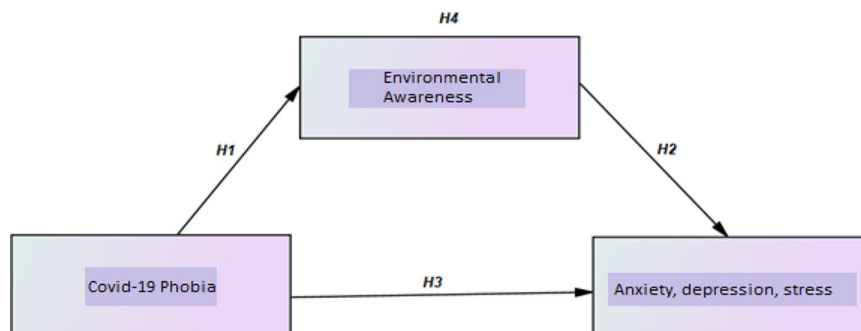
All nations are trying to minimize the effects of the pandemic as much as they can. The measures taken in this direction are causing fear and anxiety. Personal measures that should be taken for distancing and protection cause certain psychological and social damages. Although the efforts to develop a vaccine have gained momentum, this process caused people to experience certain negative feelings fear, helplessness and anxiety (Ho *et al.*, 2020). In the light of the above information, *H4* hypothesis was developed:

*H4.* Environmental awareness plays a mediating role between COVID-19 phobia and stress, depression and anxiety.

## 4. Methodology

The methodology part of the study includes data collection, research model, study scales, construct validity of the scales, reliability coefficient, exploratory factor analysis, confirmatory factor analysis, combined validity, discriminant validity.

**Figure 1** Research model



### 4.1 Data collection

In the literature review, we examined the moderator effect of environmental awareness and the mediating role of anxiety and depression in the relationship between COVID-19 phobia and stress in industrial customers in the Şanlıurfa province of Turkey. We used quantitative questionnaire method. The questionnaire method consists of four parts. The first part includes seven statements on demographics. The second part of the questionnaire contains six statements to measure the psychological effects of COVID-19 phobia. The third part has nine statements to measure “environmental awareness.” In the fourth part, there are 20 statements including “anxiety, depression and stress.” The population of the study consists of small business owners in the Şanlıurfa province of Turkey. The sample of the study consists of 406 participants. The data collection period lasted for approximately two months (July–August 2020).

### 4.2 Research model

Figure 1 presents the research model.

To establish the validity and reliability of the research model, construct validity (exploratory and confirmatory), convergent validity (CR), discriminant validity and reliability were analyzed.

### 4.3 Research samples

This study uses three different scales. These scales are, COVID-19 Phobia Scale, Environmental Awareness Scale and Depression, Anxiety and Stress Scale.

#### 4.3.1 COVID-19 Phobia Scale

This scale uses the psychological dimension out of the four dimensions in “The development and initial tests for the psychometric properties of the COVID-19” scale developed by Arpacı *et al.* (2020). The psychological dimension of COVID-19 phobia has six items. The original scale is a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The Cronbach’s alpha value of the psychological dimension of the original scale was “0.876,” which establishes reliability.

#### 4.3.2 Environmental Awareness Scale

For measuring environmental awareness, we used the “Environmental Awareness Scale” of Afsar *et al.* (2018). The original scale includes nine statements. A five-point Likert scale is used in the scale (1 = I know nothing, 5 = I know a lot). The original scale has a Cronbach’s alpha value of “0.89”, which shows a good reliability.

4.3.3 Anxiety, Depression and Stress Scale

“Depression, Anxiety and Stress Scale” developed by Yılmaz et al. (2017) was used. The reliability of the anxiety dimension of the original scale was “0.89,” that of the depression dimension was “0.822” and the stress dimension was 0.755, which establishes good reliability. This scale is in the form of a four-point Likert scale (0 = not suitable for me, 4 = completely suitable for me).

4.4 Analyses of the scales

This section of the study includes the factor loadings, Cronbach’s alpha values, composite reliability, average variance explained (AVE), Kaiser-Meyer-Olkin (KMO) and Bartlett results.

4.4.1 Common method bias

The systematic errors of the measurements are called biases. This error is caused by the means of measurement and leads to incorrect predictions of statistical models. If there are systematic errors in the measurements, these should be detected and solved (Çi’zel et al., 2020: 7). The data of this study was collected from the same group of participants. Collecting the data through self-assessment can cause common method bias (Gao et al., 2018: 666).

The following measures were taken to decrease the common method bias (Gao et al., 2018: 66).

- The information about the participants is kept private, which encouraged the participants to answer truthfully. In addition, the analysis performed included mediation and moderation regression analysis, which was less likely to be affected by common method bias. The Bootstrap technique was used for the above-mentioned method.
- To eliminate the common method bias, explanatory and confirmatory factor analyses were made.

The results show that there is no significant common method error in this study (Tables 2, 6 and Figures 2 and 3).

4.4.2 Reliability coefficients

The reliability coefficients for the scales and subdimension(s) are shown in Table 1.

As Table 1 shows, all Cronbach’s alpha coefficients regarding the scales and dimensions are higher than the threshold value of “0.70.” Therefore, the study scales are reliable (Al-Ghazali and Afsar, 2020, p. 9).

4.4.3 Exploratory factor analysis

Table 2 presents the factor loadings, KMO values and Bartlett’s test results of the statements in the study scales. All 35 statements of the questionnaire were simultaneously included in exploratory factor analysis. “Maximum Likelihood” technique was used during the factorization of the scale items. We chose the “Maximum Likelihood” technique because the

Figure 2 Scree plot of the scales

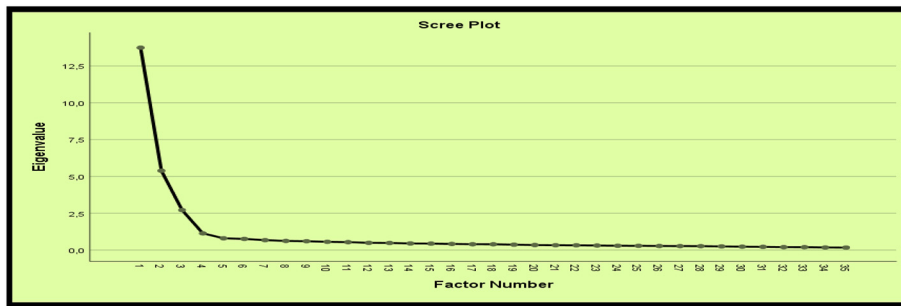


Figure 3 Research model

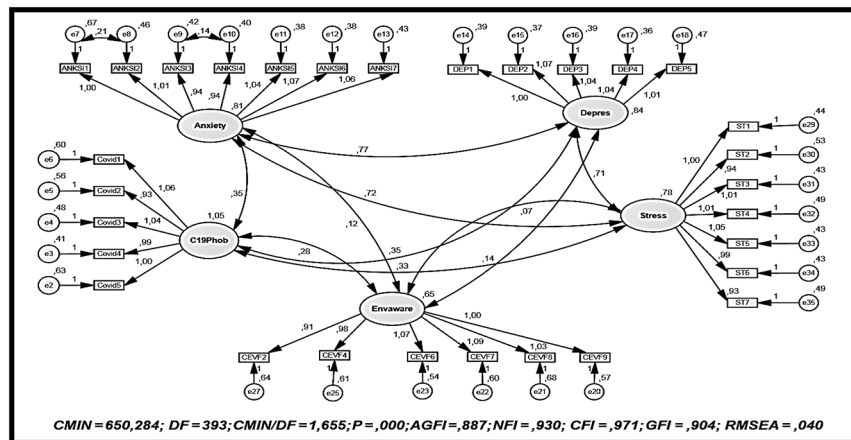


Table 1 Reliability coefficients

| Scales   | Reliability coefficient |
|--|-------------------------|
| COVID-19 phobia                                  | 0.909                   |
| Environmental awareness                          | 0.896                   |
| <i>Depression–Anxiety–Stress Scale (general)</i> | 0.969                   |
| Anxiety dimension                                | 0.931                   |
| Depression dimension                             | 0.925                   |
| Stress dimension                                 | 0.920                   |

Table 2 Exploratory factor analysis

| Variables                            | Item no. | Factor loadings |
|--------------------------------------|----------|-----------------|
| COVID-19 Phobia Scale                | Covid1   | −0.787          |
|                                      | Covid2   | −0.803          |
|                                      | Covid3   | −0.845          |
|                                      | Covid4   | −0.867          |
|                                      | Covid5   | −0.779          |
|                                      | Covid6   | −0.627          |
| Environmental Awareness Scale        | ENVA1    | 0.622           |
|                                      | ENVA2    | 0.710           |
|                                      | ENVA3    | 0.665           |
|                                      | ENVA4    | 0.762           |
|                                      | ENVA5    | 0.642           |
|                                      | ENVA6    | 0.738           |
|                                      | ENVA7    | 0.703           |
|                                      | ENVA8    | 0.748           |
|                                      | ENVA9    | 0.683           |
| Anxiety, Depression and Stress Scale | ANXI1    | 0.722           |
|                                      | ANXI2    | 0.792           |
|                                      | ANXI3    | 0.756           |
|                                      | ANXI4    | 0.759           |
|                                      | ANXI5    | 0.820           |
|                                      | ANXI6    | 0.846           |
|                                      | ANXI7    | 0.820           |
|                                      | DEP1     | 0.793           |
|                                      | DEP2     | 0.814           |
|                                      | DEP3     | 0.798           |
|                                      | DEP4     | 0.805           |
|                                      | DEP5     | 0.812           |
|                                      | DEP6     | 0.783           |
|                                      | ST1      | 0.813           |
| ST2                                  | 0.722    |                 |
| ST3                                  | 0.789    |                 |
| ST4                                  | 0.723    |                 |
| ST5                                  | 0.743    |                 |
| ST6                                  | 0.756    |                 |
| ST7                                  | 0.737    |                 |

Notes:  $N = 406$ ;  $KMO = 0.956$  and Barlett test result  $\chi^2 = 10472.141.456$ ;  $df = 595$ ;  $p = 0.000$ . Explained variance: 58.858%

next step was confirmatory factor analysis and to draw definite lines between the factors (Fabrigar et al., 1999). Additionally, we used the “direct oblimin” method. The reason that we chose the “direct oblimin” method out of other rotation methods is that there are strong relationships among the variables (Costello and Osborne, 2005). Because this study is conducted

on 350 participants, the factor loading threshold was accepted as 0.30 (Reio and Shuck, 2015).

The KMO value is above 0.90, as shown in Table 2 (0.956). This value is described as “perfect.” The fact that the explained variance exceeds 50% over the total variance is an important threshold for factor analysis. Explained variance was found as 58.858%. Regardless of the size of the population, having more than 0.50 loadings for each factor and an average that is greater than 0.70 is considered sufficient for explanatory factor analysis (Treiblmaier and Filzmoser, 2010). This study meets the aforementioned conditions. The analysis results show that the study supports a three-factored structure

#### 4.4.4 Average variance explained and convergent validity

Two values that were analyzed for the validity of the study are “average variance explained” and “convergent validity.” The acceptable threshold of AVE value is 0.5 and of CR is 0.7 (Al-Ghazali and Afsar, 2020: 9). The factor loadings of the items in the questionnaire were used for the analysis of these values (Table 2).

As shown in Table 3, the AVE and CR values of the scales are above the acceptable threshold, and the scales provide the acceptable condition for CR.

#### 4.4.5 Correlation matrix values

This section of the study includes the relationship between the correlation values of the scales and between the total correlation values. Additionally, the mean and standard deviation values are also analyzed in this section.

Table 4 includes the descriptive statistics and correlation matrices of the scales. The results show that COVID-19 phobia and environmental awareness have a significant relationship with anxiety, depression and stress. The relationship between COVID-19 phobia and environmental awareness is also significant.

#### 4.4.6 Discriminant validity

We used Fornell and Larcker (1981) criterion to test the discriminant validity. According to the Fornell and Larcker criterion, the AVE value of each variable should be higher than its correlation with the other variables (Çiçek and Almali, 2020, p. 250). Discriminant validity results are shown in Table 5.

Table 3 AVE and CR values of the scales

| Scales                               | AVE  | CR   |
|--------------------------------------|------|------|
| COVID-19 phobia                      | 0.61 | 0.97 |
| Environmental awareness              | 0.51 | 0.90 |
| Anxiety, Depression and Stress Scale | 0.62 | 0.91 |

Table 4 Correlation matrices, means and standard deviations

| Scales                         | Average | SD   | 1       | 2       | 3 |
|--------------------------------|---------|------|---------|---------|---|
| 1. COVID-19 phobia             | 3.66    | 1.05 | 1       | –       | – |
| 2. Environmental awareness     | 3.65    | 0.84 | 0.348** | 1       | – |
| 3. Anxiety, depression, stress | 1.37    | 0.89 | 0.373** | 0.146** | 1 |

Notes:  $N = 406$ ; \*\* $p < 0.01$  (2-tailed)

Table 5 Fornell–Larcker criterion

| Factors                        | 1     | 2      | 3     |
|--------------------------------|-------|--------|-------|
| COVID-19 phobia                | 0.78* | –      | –     |
| Environmental awareness        | 0.344 | 0.714* | –     |
| Anxiety, depression and stress | 0.373 | 0.146  | 0.79* |

Note: \*Values written in bold are the square roots of the AVE values of the variables

As Table 5 shows, the numbers in bold, Fornell–Larcker criterion values, are higher than correlation values. Therefore, discriminant validity is established.

#### 4.4.7 Confirmatory factor analysis

This study includes three scales. Anxiety, Depression and Stress Scale has three subdimensions. COVID-19 Phobia Scale has six; Environmental Awareness Scale has nine; and Anxiety, Depression and Stress Scale has 20 items including seven of the anxiety subdimension, six of the depression subdimension and seven of the stress subdimension. Figure 2 shows the results of the confirmatory factor analysis results of the research model.

Abbreviations: C19phob: COVID-19 phobia, Emvaware: environmental awareness, Depres: depression.

All scales and subdimensions were simultaneously included in the confirmatory factor analysis. In the first level confirmatory factor analysis, results were examined with the help of the “View Text” menu. Modification indices were checked first. Here, for the “worry” dimension, a high value was spotted “between e7 and e8 (50.369),” and the covariance between the two error terms was plotted. In addition, covariance was drawn because there is a high value between the “e9-e10 error terms (40.089).” Afterwards, the error term “e1” was deleted and removed from the analysis because it loaded on both stress and anxiety factors. Afterwards (e19), the term error was deleted and removed from the analysis because it loaded on both stress and depression. Finally, the “CEVF1, CEVF3 and CEVF5” expressions (0.7) were deleted from the analysis as they had correlation coefficients (0.627, 0.643 and 0.638, respectively) below the threshold value ([www.youtube.com/watch?v=dwTamg8GUhM](http://www.youtube.com/watch?v=dwTamg8GUhM)). The final version of the research model is shown in Figure 3. The goodness of fit values regarding the research model are shown in Table 6.

Chi-square goodness of fit value of the research model is significant ( $X^2/df = 1.655$ ). Variable model test was adapted to the alternative models. Chi-square statistics for fit indices were found to be significant for all models. Root mean square error of approximation (RMSEA) value has been found to be 0.040 while examining the other goodness of fit values. An RMSEA value below 0.05 shows a good fit (Doğan, 2013; 26). Adjusted goodness of fit index has been found to be 0.887. This value is within acceptable limits (Yılmaz, 2015; 37). Normed fit index (0.930), Comparative fit index (0.971) and Goodness of fit index (0.904) are all within acceptable limits (Yılmaz and Varol, 2015; 37).

Table 6 Goodness of fit values (research model)

| $X^2/df$ | AGFI  | NFI   | CFI   | GFI   | RMSEA |
|----------|-------|-------|-------|-------|-------|
| 1.655    | 0.887 | 0.930 | 0.971 | 0.904 | 0.040 |

The factors regarding the research model have satisfying values (see Table 6). In the light of the above results (exploratory factor analysis, CR, discriminant validity, correlation matrix and confirmatory factor analysis), the research model consisting of three scales and five subdimensions is a valid and reliable model (see Tables 1–6, Figures 2 and 3).

## 5. Findings

This part of the study consists of two parts in the form of demographics and the analysis of hypotheses.

### 5.1 Demographics

Table 7 includes the demographics of the participants.

Table 7 shows that 110 participants were women (27.1%) and 296 were men (72.9%). Of the participants, 34 worked in the food sector (8.4%), 33 in the restaurant sector (8.1%), 34 in the garment sector (8.4%), 36 were hairdressers (8.9%), 26 worked in the fuel sector (6.4%), 20 in jewelry (4.9%), 27 in electronics (6.7%), 25 in furniture (6.2%), 21 worked as repairman (5.2%), 27 as phone dealers (6.7%) and The “others” option, consisting of 123 people, constitutes the

Table 7 Demographics of the participants

|                   | Frequency | (%)  |
|-------------------|-----------|------|
| <b>Sex</b>        |           |      |
| Woman             | 110       | 27.1 |
| Man               | 296       | 72.9 |
| <b>Sector</b>     |           |      |
| Food industry     | 34        | 8.4  |
| Restaurant        | 33        | 8.1  |
| Garment           | 34        | 8.4  |
| Hairdresser       | 36        | 8.9  |
| Fuel              | 26        | 6.4  |
| Jewelery          | 20        | 4.9  |
| Electronics       | 27        | 6.7  |
| Furniture         | 25        | 6.2  |
| Repairman         | 21        | 5.2  |
| Cellphone dealer  | 27        | 6.7  |
| Other             | 123       | 30.3 |
| <b>Education</b>  |           |      |
| Primary education | 88        | 21.7 |
| High school       | 182       | 44.8 |
| Undergraduate     | 110       | 27.1 |
| Graduate          | 26        | 6.4  |
| <b>Income</b>     |           |      |
| 0–3,000           | 152       | 37.4 |
| 3,001–6,000       | 153       | 37.7 |
| 6,001–9,000       | 76        | 18.7 |
| 9,001–12,000      | 25        | 6.2  |
| <b>Age</b>        |           |      |
| Under 18          | 15        | 3.7  |
| 18–25             | 58        | 14.3 |
| 26–33             | 97        | 23.9 |
| 34–41             | 130       | 32.0 |
| 42+               | 106       | 26.1 |

majority of the participants (30.3%). In terms of income status of participants, 152 people (37.4%) have an income between ₺0 and ₺3,000, 153 people (37.7%) between ₺3,001 and ₺6,000, 76 people (18.7%) between ₺6,001 and ₺9,000 and 25 people (6.2%) between ₺9,001 and ₺12,000. When it comes to the ages of the participants, there are 15 participants who are under 18 (3.7%), 58 people aged between 18 and 25 (14.3%), 97 people between 26 and 33 (23.9%), 130 people between 34 and 41 (32%) and 106 people who are over 42 (26.1%). Education status of the participants are as follows, 88 people have graduated from primary school (21.7%), 182 from high school (44.8%), 110 have an undergraduate degree (27.1%) and 26 have graduate degrees (6.4%).

## 5.2 Testing the hypotheses

This section of our study includes the analyses on the study hypotheses. The analyses were made using PROCESS macro developed by Hayes (2018) (Gürbüz, 2019: 65).

### 5.2.1 Mediation analysis

Regression analysis based on the bootstrap method was made for *H1* hypothesis to discover whether anxiety has a mediating role in the effect of COVID-19 phobia felt by small business owners on stress. Bootstrap and 5,000 resampling methods were used for the analyses. In mediation analyses made with the Bootstrap technique, coefficients should not cover the zero value in the 95% confidence interval (Gürbüz, 2019, 65–66). Table 8 presents the results of the regression analysis made for the aforementioned purpose.

Non-standardized beta coefficients (*b*) have been reported.

As Table 8 shows, COVID-19 phobia has a significant effect on environmental awareness ( $b = 0.23$ , 95% Bias-corrected (BCA) confidence interval (CI) [0.2044, 0.3505]). COVID-19 phobia explains approximately 12% of the change in environmental awareness, which supports the *H1* hypothesis. Table 8 also shows that environmental awareness does not affect stress, depression and anxiety ( $b = 0.02$ , 95% BCA CI [-0.0826, 0.1242]), which does not support the *H2* hypothesis.

COVID-19 phobia was found to affect stress, depression and anxiety ( $b = 1.21$ , 95% BCA CI [0.2398 0.3940]), and it explains almost 14% of the change in stress, depression and anxiety. This supports *H3*.

Finally, environmental awareness was found to have a mediating effect in the relationship between COVID-19 phobia and stress, depression and anxiety. ( $b = 0.0058$ , 95% BCA CI [-0.023, 0.0401]). The standardized total effect size of the mediating effect ( $K2 = 0.0068$ ) was found to be low. This supports the *H4* hypothesis.

## 6. Discussion

This study examined the relationship between COVID-19 phobia, stress, depression, anxiety and environmental awareness, and the study sample was industrial customers in Turkey. The reason why the sample group of the study was chosen as industrial customers is that it is one of the occupational groups that has been affected by the COVID-19 pandemic the most. Investigating the mediating effect of environmental awareness on the effect of COVID-19 phobia on stress, depression and anxiety is thought to make significant contributions to the literature.

The study first explained why this study is needed. COVID-19 phobia is thought to cause stress, depression and anxiety. People experiencing high levels of stress, depression and anxiety are more negatively affected by COVID-19. The COVID-19 pandemic has caused serious damage ever since the start of 2020 and kept affecting the world throughout 2021 and 2022. Lockdowns, restrictions, deaths and permanent damage to human health negatively affect the psychological states of people. Thus, the main subject of this study is the analysis of the negative effects of COVID-19 phobia on stress, depression and anxiety. COVID-19 pandemic is believed to have a relationship with nature. The ruthless use and destruction of natural resources, the increase in the use of chemical products, the rapid use of resources, the effects of human-made factors such as wars on nature cannot be denied. Adverse natural events such as natural disasters, earthquakes, landslides, global warming and storms have an impact on the damage caused by humans to nature. At this point, the environmental awareness variable constitutes the center of the study. In other words, the study examined whether there is a change in the way people behave toward nature during the COVID-19 pandemic and how COVID-19 phobia affects environmental awareness levels. In short, it is thought that revealing whether environmental awareness has a mediating effect in the relationship between COVID-19 phobia and stress, depression and anxiety will make a positive contribution to the literature.

The analysis found a moderate relationship between COVID-19 and environmental awareness and also between COVID-19 phobia and stress, depression and anxiety. Finally, no relationship was found between anxiety, depression, stress and environmental awareness. The analyzes carried out to test the hypotheses developed later first determined that there was a relationship between COVID-19 phobia and environmental awareness. Following this finding, similar studies in the literature was examined. One of these studies stated that people experience more anxiety during an outbreak compared to their normal lives. Anxiety and fears related to COVID-19 phobia are more emphasized during times of uncertainty, threat and

Table 8 Mediation test results ( $N = 406$ )

| Models            | B      | S.H.   | t    | 95% bias-corrected bootstrap CI | p        | R <sup>2</sup> |
|-------------------|--------|--------|------|---------------------------------|----------|----------------|
| Model 1 X → M     | 0.28   | 0.14   | 7.47 | [0.2044, 0.3505]                | 0.000*** | 0.12           |
| Model 2 M → Y     | 0.02   | 0.0526 | 0.39 | [-0.0826, 0.1242]               | 0.69     |                |
| Model 3 X → Y     | 1.21   | 0.15   | 8.09 | [0.2398, 0.3940]                | 0.000*** | 0.14           |
| Model 4 X → M → Y | 0.0058 | 0.0159 |      | [-0.023, 0.0401]                | 0.000*** |                |

Notes: X = COVID-19 phobia; Y = stress depression anxiety; M = environmental awareness; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ; S.E.: standard error

extraordinary life conditions (Iřıklı, 2020, p. 29). There are studies in the literature showing that anxiety has many negative effects on business life (Stewart *et al.*, 2003; Weiller *et al.*, 1998). During outbreaks, measures such as social distancing, isolation and quarantine in addition to the economic and social reflections of the pandemic, negative emotions such as sadness, anxiety, fear, anger and tension increase (Ahorsu *et al.*, 2020; Mamun *et al.*, 2020). The spread of COVID-19 is severely impacting the global labor market. A study examining the effects of COVID-19 on the workforce, especially those employed in sectors whose production activities were highly affected by the crisis, revealed that they are exposed to risks such as unemployment, being on unpaid leave and decreasing the weekly working hours (Kara, 2020: 269). The study titled "Examination of Covid-19 Fear and Anxiety Levels of Turkish Professional Football Players in the Covid-19 Pandemic" conducted by Çiftçi and Demir in 2020 found that there is a moderate relationship between the fear of COVID-19 and perceived stress levels of professional football players in Turkish leagues (Demir and Çiftçi, 2020: 26). Another empirical study found that excessive workload has a partial mediator effect between the health personnel's fear of COVID-19 and their burnout (Yakut *et al.*, 2020: 241). The finding that there is a moderate relationship between COVID-19 phobia and stress, depression and anxiety was consistent with the literature.

Another claim of the study was that environmental awareness has an effect on stress, depression and anxiety. The analyses showed that environmental awareness did not have any relationship with stress, depression and anxiety. Third, it was determined that COVID-19 phobia has a positive significant effect on stress, depression and anxiety. Among the claims put forward in this study, the strongest effect was put forward in this hypothesis. In other words, COVID-19 phobia explains about 13% of the change in stress, depression and anxiety. According to the findings of a cross-sectional questionnaire conducted during the H1N1 pandemic, the high level of intolerance of uncertainty in adults was negatively associated with the perception of control and low perception of control was also found to be positively related to the use of emotional coping strategies and an increase in the level of anxiety (Taha *et al.*, 2014; Iřıklı, 2020;). The increase in the number of cases worsens the psychological states of individuals (Pakpour and Griffiths, 2020). Rajkumar (2020) also revealed that fear, anxiety and stress severely increase during an outbreak and when the number of cases increases (Rajkumar, 2020; Johnson and Indvik, 1997; Handrich, 2000). At a time when news about the pandemic is frequently made in the media, cases of mental health deterioration are more common in individuals with high levels of depression (Roy *et al.*, 2020, Çiçek and Almali, 2020; 246). During an outbreak threat, symptoms such as post-traumatic stress reactions, depressive symptoms and anxiety disorder symptoms reach a clinical level (Shultz *et al.*, 2013).

Fear or anxiety caused by Covid-19 are expected situations related to the mood of individuals. Because no person wants to be infected with a virus with a high risk of death (Kobayashi *et al.*, 2020: 2). However, if the fear reaches an uncontrollable level, the mental health of individuals can deteriorate on a threatening level (Gencer, 2020: 1157). As Hon *et al.* (2013) stated, stress has been one of the most studied research subjects due to its negative impact on the psychological health of

employees and, accordingly, the service quality and organizational effectiveness of businesses. When an unpredictable situation such as an epidemic occurs, it is considered natural for people to exhibit protective and avoidance behavior with a sense of fear and panic (Yanarates, 2020: 29; Gencer, 2020: 1163).

The emergence of some psychological symptoms, defined as acute stress response, after the COVID-19 pandemic is considered as "usual reactions to the unusual situation" (Iřıklı, 2020, p. 6–7). The belief in self-efficacy affects one's life choices, motivation level, quality of functioning, resistance to adversity, vulnerability to stress and depression (Bandura, 1994; Çiçek and Almali, 2020, p. 246). The studies of Malik *et al.* (2011) and Hammad *et al.* (2012) found that stress is the main factor in the disruption of the work of employees. Arshadi and Damiri (2013) found that employees with high stress levels experience health problems, lose their productivity and cannot concentrate on work.

In a study conducted to evaluate the levels of depression, anxiety and health anxiety during the COVID-19 epidemic in Turkey, it was revealed that the accompanying chronic disease is a contributing factor to health anxiety (Özđin and Özđin, 2020: 506). In another study, it was revealed that individuals with chronic diseases experienced higher levels of psychological distress than those without chronic disease during the epidemic (Cao *et al.*, 2020: 11, 22). Staying in quarantine has been associated with post-traumatic stress symptoms, high level of anxiety and adjustment disorder (Rossi *et al.*, 2020). In a study conducted during the COVID-19 epidemic, losing a loved one due to COVID-19 was associated with post-traumatic stress symptoms, depression, perceived stress and insomnia (Rossi *et al.*, 2020). Finally, according to the latest claim of this study, environmental awareness has a low effect on the effect of COVID-19 phobia on stress, depression and anxiety.

## 7. Theoretical and managerial application

In addition to having vital physiological effects on human health, the COVID-19 pandemic also has psychological effects. Small business owners, or industrial customers, have been observed to experience burnouts caused by the decrease in workload, short-term closures and decrease in production, which are caused by COVID-19. These burnouts may cause severe threat. The spread of COVID-19 is severely impacting the global labor market. According to the latest studies, the effects of COVID-19, especially on those employed in sectors whose production activities were highly affected by the crisis, revealed that they are exposed to risks such as unemployment, being on unpaid leave and decreasing the weekly working hours (Kara, 2020: 269). It is observed that millions of workers in different labor markets around the world have been severely affected by the pandemic through loss of jobs and income as a result of the spread of COVID-19. During the pandemic, some workplaces go downsizing, while others are closed temporarily or permanently.

The deep impacts of COVID-19 phobia on the psychological states of employees puts important duties on governments and business owners. These may be as follows:

- Governments should take measures to protect small business owners during COVID-19. Postponing debts, providing interest-free loans, increasing incentives and reducing layoffs are among these measures.

- Business owners should prepare psychological support programs for those who have survived the disease and those who have been depressed during the process.
- Business owners should seek help from psychologists and pedagogues improve the morale of their employees.
- Business owners can organize in-service training activities to raise awareness of the employees about the effects of the COVID-19 pandemic and the measures to be taken.
- They should encourage their employees to work from home as much as possible to slow the spread of the epidemic.
- States should frequently include commercials on how important vaccination and social distance are in their advertisements.

Above are a number of recommendations for government and business owners. In a world where loss of life and health problems due to COVID-19 are common, business life is interrupted significantly. Although the main point of the study is the psychological effects caused by the pandemic, it is thought that the economic measures to be taken may also be effective in lessening the psychological damage. In this challenging process, important duties fall on governments, business owners, managers, employees and individuals who make up the society. When each employee acts more consciously and is provided with psychological and financial support, it will help compensate for the losses to some extent.

In terms of the theoretical contributions of the study, it has been determined that there is a moderate relationship between COVID-19 phobia and environmental awareness and between COVID-19 phobia and stress, depression and anxiety. In this case, it has been found that COVID-19 phobia increases the level of stress, depression and anxiety and the environmental awareness levels of employees. Additionally, for the first time in the literature, environmental awareness was found to have a mediating effect in the relationship between COVID-19 and stress, depression and anxiety. Therefore, it was determined that environmental awareness has a mediating role between COVID-19 phobia and stress, depression, anxiety ( $b = 0.0058$ , 95% BCA CI  $[-0.023, 0.0401]$ ). The analysis results showed that the fully standardized effect size of the mediation effect was  $K2 = 0.0068$ , suggesting a low effect size. It is believed that the findings made significant theoretical contributions.

## 8. Limitations and future research direction

Small business owners are one of the sectors deeply affected by the COVID-19 pandemic. They faced significant financial and psychological problems during the lockdown. The study was carried out on 406 small business owners in Şanlıurfa province, located in the Southeastern region of Turkey. Therefore, the study has significant limitations. It has been quite difficult to collect data during these challenging times. Because the employees were not extremely willing to participate in the research due to both curfews and the negative psychological and physical conditions. Only a limited number of data has been collected in these difficult conditions. It is a significant shortcoming that the study is a longitudinal study. Future cross-sectional studies would make positive contributions to the literature. Another important limitation of the study is that it is a quantitative study and the expressions to be measured are limited in a questionnaire. Barriers such as limited economic

opportunities, insufficient time and reluctance of most of the participants to participate in the study are among the biggest limitations.

Future studies can be carried out in different countries, different cultures and different occupational groups. Additionally, it is recommended for future studies to investigate the mediating and moderating effects of variables such as corporate social responsibility, organizational commitment and work commitment in the relationship between COVID-19 phobia and stress, depression and anxiety.

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