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The mediator role of well-being in the effect of COVID-19 anxiety on occupational commitment: research in the aviation sector

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ABSTRACT

The coronavirus (COVID-19) pandemic, which emerged in China in December 2019, has severely affected many industries across the world and created substantial psychological, social and economic impact on individuals. With the coronavirus outbreak labelled as a pandemic by the World Health Organization, the first measures have been taken for the aviation industry. The crisis environment created by the pandemic had a negative impact on aviation personnel. The main purpose of this research is to investigate the mediator role of employee well-being in the effect of COVID-19 anxiety on occupational commitment. The data were collected through a survey of cabin and cockpit staff ($n = 3862$). After the analyses, it was found that the effect of COVID-19 anxiety on well-being, and occupational affective and normative commitment was significant. Moreover, it is among the findings that well-being has a partial mediator role in the effect of COVID-19 anxiety on occupational affective and normative commitment.

KEYWORDS

aviation sector; COVID-19 anxiety; flight personnel; occupational commitment; well-being

1. Introduction

Many outbreaks that pose a threat to humanity have been reported in the last few centuries [1]. The most known pandemic in the world is the plague pandemic, which was effective from 1346 to 1353 and caused the death of approximately 50 million people worldwide [2]. The past century experienced numerous pandemics of varying degrees of contagiousness and mortality. Examples include human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) from 1981 to the present, Spanish flu (H1N1) in 1889–1890, Russian flu (H2N2 or H3N8) in 1889–1890, Asian flu (H2N2) in 1957–1958, Hong Kong flu (H3N2) in 1968–1969, the second Russian flu epidemic in 1977–1978 (H1N1), swine flu (H1N1) in 2009–2010 and the Zika virus epidemic in 2015–2016 [3,4].

Pandemics are defined by the World Health Organization (WHO) as 'global epidemics affecting millions of people in multiple countries and spreading from time to time to the whole world' [5]. Coronavirus emerged in Wuhan, China in December 2019, and is a deadly pandemic that has spread to 192 countries across the world since March 2020 [6]. The WHO has officially declared COVID-19 to be a global pandemic [7]. Governments have taken drastic measures to prevent the spread of COVID-19, which halted public life and left the global economy in a difficult position [8]. Many industrial firms have laid off their employees and some are preparing to dismiss them. This uncertain situation has led to economic–social anxiety and fears in individuals. Parallel to this, many psychological and physiological disorders have emerged [9]. A wide-ranging fear of COVID-19 has been triggered by the spread of inaccurate information, especially through communication channels such as social media [10,11]. Pandemics such as the coronavirus create not only an epidemiological crisis, but also a psychological crisis (i.e., anxiety, depression, insomnia, trauma, anger, psychosis, panic and distress), like other pandemics in the past. Similar to health threats against individuals and their loved

ones, pandemics generally result in psychosocial stress. The COVID-19 pandemic has brought not only the risk of death from a viral infection, but also psychological pressure on people all over the world [12,13]. Taylor [1] claims that some clinical fear and anxiety symptoms were detected in individuals during the pandemic of infectious diseases. In a survey study by the Kaiser Family Foundation (KFF) on the COVID-19 disease, it was reported that about half of the participants in the study began to experience pandemic-related mental health problems [14]. Considering Taylor's [1] claim that fear, anxiety and depression are closely related, it is likely that anxiety and depressive concerns about health would occur in a large part of society.

The aviation industry is one of the sectors that require close contact in the work environment. Factors such as the dense crowds formed at the airports, and the high possibility of transmission of infectious diseases by the respiratory tract due to ventilation conditions in the environment inside the aircraft, have allowed the pandemic to spread rapidly to wide geography with the natural effect of air transportation [15]. The aviation industry has been adversely affected by the COVID-19 pandemic worldwide. In the last 50 years, during the growth process of the aviation industry, there have been restrictions and completely halted processes due to various factors such as the Twin Towers attack, the Gulf wars, the 2008 economic crisis, the severe acute respiratory syndrome (SARS) epidemic, etc. However, there has not been such a severe crisis that would bring air traffic to a halt. Due to the spread of COVID-19 around the world, it is inevitable to observe its effects on human health and economic stability at a highly devastating rate [3].

As mentioned by Hopancı et al. [16]:

the aviation sector has faced a crisis even bigger than the one experienced in the 9/11 attacks, and rapidly spreading pandemic brought the aviation industry to a halt. According to the number of flights statistics in Turkey, the most active airline Turkish Airlines has reduced their number of flights to approximately half. Despite that, in 2019, Turkish Airlines, the fourth airline company with the

highest average number of flights in Europe managed to rise to the second place in 2020 (p.447).

The figures providing a comparison between the pre-COVID-19 and post-COVID-19 aviation sector indicate that 46 million jobs were at risk, normally supported by aviation. In addition, USD 1800000 million of economic activities normally supported by aviation were at risk due to COVID-19 as well. At the period when the highest shutdown was experienced there was a 94.4% drop in revenue passenger kilometres in April 2020 in comparison to April 2019 [17]. Turkish Airlines' periodic activity report also indicates the dramatic impacts of the global pandemic on the aviation sector. When the figures belonging to September 2019 are compared with the figures of September 2021, it is possible to see that: the flight number in passenger transportation decreased from 370,724 to 228,603 (−38.3%); the number of travelling passengers decreased from 56,416,194 to 31,069,024 (−44.9%); the occupancy rate decreased from 81.4% to 66.7% (−14.7%); and the number of transfer passengers decreased from 18,120,824 to 8,353,920 (−53.9%). However in the same period there was a positive development only for the cargo figures, which increased from 1,117,084 to 1,397,927 t (25.1%). Since the flight operations could not be conducted due to the COVID-19 restrictions in 2020, the figures for 2021 are compared with the figures belonging to 2019 [18]. After a second evaluation by the Board of Directors, due to the employees' devoted sacrifice during the pandemic and performance, work and flight compensation for cockpit personnel is increased by 25% and for all other personnel by 20% starting from October 1, 2021 [18]. Despite all negative impacts of the pandemic, according to the data provided by Eurocontrol, Turkish Airlines became the first company with the highest flight number in Europe in the first 7 months of 2021 and the second company in the first 9 months of 2021. Moreover, Istanbul Airport became the first airport welcoming the most air passengers in the first 9 months of 2021 [18]. Eventually, the pandemic has affected job security negatively in the aviation sector as well. At the global scale, airlines lost 1.7 billion[TQ1] passengers and 6.1 million flights in total. European aviation announced a net loss of EUR 56.2 billion[TQ1] during this period. The economic hardship caused 191,000 direct job losses in Europe. Fifty-one percent of aircraft that belong to European airline companies were grounded by the end of 2020 [16].

Restricting (suspending) air traffic, primarily with China, the Asian continent, then Iran, Italy and the Middle East, and finally with Europe and the USA to prevent the spread of the pandemic, has caused serious negative impacts on passenger and cargo transportation activities [19]. On the other hand, airline employees are also at greater risk, if not as much as healthcare workers, since they are always together with other employees and passengers on the plane, without a secure social distance. The contact probability to the disease for them is therefore very high. As already mentioned, the increased probability of getting sick causes employees to fear and be concerned about their health [1]. COVID-19 anxiety in individuals is likely to be higher in some occupations that require close contact, such as in the aviation industry. The commitment of the employees to their occupations may decrease due to the aforementioned concerns. These employees may want to leave their jobs or choose to stop working in the relevant occupation due to concerns about their health [3]. At a time when many types of restrictions were implemented by governments to prevent

the spread of the pandemic and to protect the lives of the people, the aviation sector employees had to go on working. Borders were closed; most of the factories and government offices locked down and/or just went on with distance and online working. Schools and universities have taken similar precautions. In such an environment, the flight personnel at the aviation sector went on to work in the aircraft with close contact with passengers and other employees. This increased the possibility of being infected by any virus carrier and, furthermore, increased the risk of carrying the virus to their homes and infecting other family members. All of these factors have a potential to increase the stress felt by aviation sector employees and increase their anxiety level. This increasing anxiety level also has the potential to affect occupational commitment and well-being negatively. For these reasons, this study aims to examine the effect of COVID-19 anxiety of airline personnel on their occupational commitment.

The well-being of individuals may also play an important role in employees' occupational commitment, especially during the pandemic process. Pandemic outbreaks can also be described as a crisis or disaster that changes the daily lives of societies, requires measures that disrupt them and causes the number of people in need of medical treatment to increase rapidly [20]. In this context, it is critical to investigate the impact of the COVID-19 outbreak, which has been declared a pandemic, on both society and employees in certain occupations.

When the existing literature on the issues covered is reviewed, it is possible to see that some studies focused on coronavirus anxiety in the healthcare sector [21–24], while some others focus on anxiety and stress of the public during the coronavirus spread [25], and some examine the relationship between health anxiety and the perceptions and attitudes of the individuals [26], anxiety during the COVID-19 pandemic among college students [27] or coronaphobia and psychological distress experienced during COVID-19 [28]. On the other hand, Rigoli [29] studied the welfare policies during the coronavirus emergency and the role of political orientation and anxiety. There is another study researching the association between physical and mental health variables among software professionals working at home [30]. When all of the related literature is investigated overall it is possible to see that there is a gap in the literature regarding the relation among well-being, COVID-19 anxiety and occupational commitment in the aviation sector, which is one of the fields most affected by the pandemic conditions. So, the purpose of this study is to fill this gap and provide evidence-based findings which may contribute both to the practical policy making progress within the aviation sector and to academics studying the impacts of COVID-19 anxiety, well-being and occupational commitment.

2. Literature review

The following is a brief literature review on COVID-19 anxiety, occupational commitment and well-being.

2.1. COVID-19 anxiety

Anxiety is one of the structures reflecting affective characteristics and is widely accepted as an emotional response, mood and specific anxiety disorder that includes cognitive, physiological and behavioural aspects [31]. It is a common disorder defined as 'something to feel' [32] with physical changes

such as feelings of anxiety, anxious thoughts, tension, irritability and increased tension, sweating, tremors and dizziness [3,33]; human emotions are a complex sequence of processes in which fear and anxiety independently play a large role. Depending on the phenomenology, behavioural expression, psychometric and neurobiology level, fear and anxiety are fundamentally different from each other [34–37].

From a theoretical point of view, fear has been regarded as the primary form of emotion common among ages, races, cultures and species. Pandemics also have the potential to create fear and anxiety among the people. With the presence of this fear and uncertainty about the future, the human emotional system creates a kind of anxiety. From this point of view, anxiety can be defined as a human emotional state that may occur depending on the perception of future threats [37].

The studies in the literature on anxiety which can be expressed in general terms as the feeling of sadness, concern and feeling of tension [38] are mainly conducted on the causes, symptoms and results of anxiety. However, having certain levels of anxiety can be beneficial. Allwright et al. [39] mention that anxiety has stimulating, motivating and protective properties. Thus, it is claimed that anxiety guides people to creative and positive behaviour. This type of creative and positive behaviour will only be possible if the anxiety is at a moderate level. Unlike the moderate level, a low or high level of anxiety prevents positive behaviours [40]. There are also studies in the literature that deal with the relationship of anxiety with demographic variables, especially age [40–42].

Anxiety, as a theoretical concept, is defined as an explanation of situations that are difficult to explain or disturbing [43]. It is an emotional state and has a significant relationship with stress [44]. Taylor [45] describes anxiety as ‘feelings of tension, worried thoughts and physical changes like increased blood pressure (pp.65-90)’. Based on this definition, the symptoms are as follows: anxiety, restlessness, uncontrolled anxiety and difficulty in being motivated. Individuals’ emotional responses determine the extent of their motivation. Anxiety can be a disturbing and severe problem when individuals think that they do not have control over the beginning and end of stressful situations, and when the source and the way it occurs remain uncertain. Considering the individuals’ desires and methods of coping with situations of uncertain origin, it has been claimed that many psycho-social factors increase the anxiety level of the threats posed by pandemics [46]. Numerous studies state that anxiety negatively affects people’s levels of controlling their behaviour. In a study conducted on university students, it has been determined that the examination results of students with high test anxiety are lower than those of other students [43]. Taha et al. [46] have found that women are less successful in managing anxiety and stress than men. Based on the results of these studies, anxiety can have a negative effect on the life events of individuals that are important to them [47].

Health anxiety refers to the tendency to be concerned about stimuli related to illness including, but not limited to, infectious diseases [48,49]. The latter is a relatively persistent trend. Our focus is on constant health anxiety. Some people have very low levels of health anxiety. Lack of concern about health risks can be incompatible, with extremely low health concerns associated with an unrealistic bias of optimism. People who are not worried about infection tend not to follow recommended hygienic behaviours such as washing their hands after using the toilet [50] and tend not to comply with social distance [45,51–54].

Extremely high health anxiety is a disproportionate concern given the objective health level of the person. People with extremely high health anxiety tend to be shocked by any perceived health threat compared to those who are less anxious, and exaggerate the likelihood and severity of getting sick [49,55,56]. People prone to extreme health anxiety may become threatened or particularly anxious during a real epidemic or pandemic. Such people may misinterpret somatic stress reactions (e.g., sweating, hot flashes and increased muscle tension) as signs of infection. The vignette also shows the nocebo effect (opposite of the placebo effect), which occurs in the case of negative expectations about treatment (e.g., vaccine injection) causing the patient to experience adverse side effects [57]. Traits such as negative emotionality (neuroticism) can predispose people to experience the nocebo effect [45].

Cognitive-behavioural models of health anxiety have been developed to better understand various issues related to healthcare use and physically unexplained physical symptoms [58]. These models are also about understanding other emotional responses to pandemics. According to studies on health anxiety, the high probability of contracting the current feared disease and exaggerated estimates about the severity of the disease constitute the nature of the anxiety. There are findings that psychological changes occurring in individuals during pandemic processes may be caused by anxiety [56]. During a pandemic like COVID-19, it has been observed that families whose children are sick experience depression and anxiety as a result of serious mental distress [47]. Intensive coverage of a pandemic on social, visual and written media platforms can potentially cause social fear, and intense news about the pandemic on television creates a stronger sense of fear and anxiety in individuals than the pandemic itself [56]. As a result, just having uncertain and threatening information about the virus can serve to increase anxiety [47].

2.2. Occupational commitment

In general terms, commitment is the high level of belief in the object/entity with which the individual connects. In particular, it is volunteering to perform what is expected/unexpected for that object/entity. In other words, commitment is an intrinsic motivation that directs an individual’s behaviour without them being aware of it [59].

Occupation is seen as the field of work in which the individual works to earn a living. The knowledge, skills and duties required by one occupation are different from those of others [60]. Since the individual in question has this knowledge and skill, they can fulfil their duties. This contributes to the attachment of employees to their occupations [61]. Occupation (work) commitment was first introduced by Greenhaus in 1971 [62]. However, occupation commitment as used in research today has been conceptualized by Morrow [63]. An individual in the state of occupational commitment: accepts the goals and values of their occupation and believes in them; voluntarily strives for the benefit of their profession; and continues their profession independent of whether the conditions are good or bad [64]. Meyer and Allen [65] define occupational commitment as the psychological condition that characterizes the relationship of employees with the organization and affects the decision to continue or terminate membership of the organization. Hackett et al. [66] mention that professional commitment is one of the ‘terms used interchangeably with OcC (Occupational Commitment) (p.393)’. Besides, there

are studies in the literature claiming that professional commitment affects the intention to quit a career, which causes withdrawal behaviours [67,68].

In the occupational commitment literature, there are studies that classify occupational commitment with different dimensions [59,62,69–74]. Kerr et al. [75] consider occupational commitment as a dimension of professionalism in their studies where they defined professionalism. Other dimensions of professionalism other than occupational commitment are the desire for professional autonomy, identification with the profession, occupational ethics and belief in the protection of peer standards.

Meyer et al. [74]:

tested the generalizability of Meyer and Allen's [65] 3-component model of organizational commitment to the domain of occupational commitment. Measures of affective, continuance, and normative commitment to occupation were developed and used to test hypotheses concerning their differential relations with antecedent and consequence variables (p.538).

According to the study of the authors: '3-component measures of occupational commitment were distinguishable from one another and from measures of the 3 components of organizational commitment. Analysis results demonstrated that occupational and organizational commitment contribute independently to the prediction of professional activity and work behavior (p.538)' [74]. So, in this study, Meyer et al.'s [74] occupational commitment and its three dimensions were used in the model.

A number of scholars argue that occupational commitment is one-dimensional [70,76,77]. Occupational commitment is conceptualized as multidimensional in different studies, and in the model created by Meyer et al. [74] as fundamental [71,72,74,78–80]. Blau [80] claims that in order to determine whether occupational commitment has one or more dimensions, stronger validity tests should be performed. From this point of view, he argues that the concept of occupational commitment consists of two separate components (accumulated costs and limited alternatives). The first of these dimensions, the accumulated costs before and after the profession (time, money, education, etc.), make it more difficult for the individual to change his profession. The other dimension, limited alternatives, means that it is not possible for an individual to choose another suitable occupation [79,80]. Meyer et al. [74] define occupational commitment in three dimensions as affective, normative and continuance commitment, and this model has been accepted by many scholars in the literature. According to the researchers, the level of an individual in these three dimensions of occupational commitment determines the 'probability of an individual to remain in the profession (pp.538-551)' [65].

Affective commitment, one of the dimensions of occupational commitment, refers to the moral commitment of the individual to their occupation. In other words, occupational affective commitment means that the individual accepts occupational goals and values [80], makes more effort than they should for the benefit of the occupation [69], works with pleasure while performing this occupation [74] and willingly stays in the occupation. The second dimension, normative commitment, is defined as the obligation to remain in the profession. Here, the individual thinks that it is right to continue the occupation [65] and also feels the obligation to remain in the occupation [80].

The third dimension, continuance commitment, emphasizes the idea of staying in the profession by considering the cost of leaving the profession [74]. Individuals who think that the cost of leaving the profession is high (they are also people with a high level of continuance commitment) tend to participate a little as possible in work-related activities compared to those with high commitment in the other two dimensions of occupational commitment. The increase in the level of continuance commitment will negatively affect occupational commitment, as seen in organizational commitment [74]. The reason for this could stem from the fact that the individual continues to work only because they need a job [70]. In summary, the quality of the dimensions of occupational commitment is different. In other words, employees with high affective commitment continue their profession because they 'want to', those with high continuance commitment because they 'need to' and those with high normative commitment because they 'think they should do' [71].

No matter what dimensions are examined, the consensus among commitment studies in the literature is that employees with high levels of commitment are less likely to leave the organization [69,73]. Similar to the study by Tak and Aydem-Çiftçioğlu [68], in the current study the occupational commitment concept has been handled with the use of a three-dimensional occupational commitment model developed by Meyer et al. [74] based on the three-dimensional organizational commitment model preferred by Meyer and Allen [81,82] and Allen and Meyer [69].

2.3. Well-being

The concept of well-being was first introduced by Halbert Dunn in 1961. Later, Jourard in 1963, and 1971, Maslow in 1968, Arden in 1977 and 1982, Hettler in 1980 and 1984, Travis in 1981, Hind in 1983 and Travis and Ryan in 1988 conducted studies that form the conceptual framework of well-being and defined the concept together with the dimensions it contains [83]. Myers et al. [84] defined well-being as 'a way of life oriented toward optimal health and well-being in which body, mind, and spirit are integrated by the individual to live more fully within the human and natural community (p.252)'. According to another definition, well-being is the best health and wellness state that individuals ideally have the means to reach [85]. These explanations emphasize that well-being is a lifestyle that also includes general health conditions [86]. The concept of well-being claims that people would develop a psychological wellness state by focusing on their strengths, not on their problems [84]. Instead of believing that there is no stress, crisis or problem, individuals with a psychologically healthy mind-set can cope with these factors thanks to their mental structure, and this is an indicator of their health [87,88]. It is claimed that positive changes in individuals' lifestyles will improve their health and well-being [88].

According to Ryff and Keyes [89], psychological well-being includes individuals finding their life meaningful, developing positive relationships with other individuals, benefiting the organization to which they belong by being aware of their abilities and limitations as well as being satisfied with their state and easily overcoming difficulties they are faced with. Ryan and Deci [90] classify psychological well-being into two main groups as hedonic and eudaimonic. In the hedonic approach, individuals experience positive emotions at a higher level than

negative emotions. In line with these concepts, it is possible to express well-being as 'subjective well-being' [91]. Subjective well-being refers to people's subjective perspectives of their existence or life experiences. It consists of both cognitive and emotional evaluations of their lives and represents an ongoing psychological state of health [92]. The eudaimonic approach, on the other hand, expresses the degree to which a person is fully functional, i.e., their potential, and focuses on psychological well-being [90]. On the basis of both approaches, the aim is to clarify the sources of happiness of the individual [93].

In the literature, there are different model proposals developed by Roscoe [94] and Miller and Foster [95], which conceptualize the concept of well-being. The wheel of wellness model developed by Myers et al. [84] has been a commonly used model. There are also studies in Turkey that used the model in question [88,96]. The content and structure developments of this model were made by Myers and Sweeney [97] and named the 'evidence-based model of wellness'. Unlike other models, this model shows a five-dimensional structure: essential self, social self, creative self, physical self and coping self. Renger et al. [98] conceptualize wellness with six dimensions: environmental, emotional, spiritual, physical, social and intellectual. Drawing on these models, Korkut-Owen and Owen [99] developed a five-dimensional model which they called the 'well-star model of wellness' by using the star metaphor. The dimensions include physical, psychological/emotional, social, intellectual/occupational and spiritual.

McMahon and Fleury [100] applied the concept of well-being in the field of medicine. As seen in this study, the assessment of the well-being of individuals was carried out with the measurements of this concept, and these measurements were incorporated into certain health programmes and procedures. Even the concept of well-being has become a concept used in industry as well as health services. Some studies deal with the concept of well-being with different variables. Concepts such as well-being and psychological well-being, quality of life and health have similar aspects. In many studies, well-being measurements are performed with the use of both well-being and general health scales [86]. McKee-Ryan et al. [101] claim that the general health status scale is a widely accepted mental health/well-being scale, which measures affection, general health and psychological distress [102]. So, in this study, general well-being is included in the model and the term 'well-being' is preferred to represent all aspects of well-being as psychological well-being, quality of life, health and mental well-being.

3. Forming the hypothesis

The following three subsections present the formation of the hypotheses.

3.1. COVID-19 anxiety and well-being

Pandemics such as COVID-19, with no definite information about its curability, increase the levels of fear and anxiety of societies due to the uncertainty they create. The main reason for the fear and stress experienced due to the COVID-19 outbreak can be explained as ordinary reactions to extraordinary situations encountered for the first time [88]. Since COVID-19 is a pandemic, it is understandable that it causes health anxiety among individuals. Health anxiety is the belief and/or fear of individuals that they have or will catch a serious disease

without witnessing the symptoms of physical disease [68]. Individuals exhibit health-protective behaviours at the level of mild health anxiety and avoid situations that are dangerous for health, increasing the level of healthy lifestyle behaviour [88]. Therefore, healthy lifestyle behavioural characteristics and health anxiety level are related concepts. However, as the level of health anxiety increases in this relationship, the general health status of the individual is likely to be negatively affected. There are many studies conducted on the relationship between anxiety and general health status. For example, Steger and Kashdan [103] claim that when the anxiety levels of smokers increase, their general health is affected negatively. Similarly, de Beurs et al. [104] have found that that anxiety has an obvious negative effect on the movements and well-being of older individuals. In another study conducted on nurses, researchers investigated the impact of the pandemic on the health risks and psychological well-being of hospital nurses [37]. Another study also investigated the effects of changes in the frequency of health-related thoughts on health anxiety [93]. Based on the theoretical background, the main purpose of the current study is to investigate the effect of COVID-19 anxiety on well-being with the following hypothesis:

H_1 : COVID-19 anxiety affects well-being negatively and significantly.

3.2. Well-being and occupational commitment

Interest in employee commitment was initially triggered by concerns about their stay in the organization [105] and gradually expanded to include other employer-related outcomes such as doing business and organizational citizenship behaviour [106]. Researchers have rarely addressed the consequences of employee commitment on well-being. These studies aim to establish a theoretical framework to understand the relationship of employee commitment with their well-being. This theoretical framework integrates the theory and consists of research from commitment, motivation and occupational health psychology. The aim is to examine how commitment to occupation is associated with well-being. The terminology used in the literature is confusing because these terms can be used interchangeably.

Studies show that general health status also affects the occupational commitment of individuals. The studies on positive well-being such as general health and psychological well-being in healthcare professionals have been increasing [37]. Therefore, it is evaluated that conducting research on the relationship among these variables with occupational commitment and well-being may provide remarkable findings.

The current research structure that relates occupational commitment to the well-being of employees appears to be somewhat fragmented and not systematic. This may be due, at least in part, to the lack of a clear and coherent theoretical framework. Meyer et al. [107] claim that commitment is directly linked to employee health and well-being.

The vast majority of research examining the relationships between commitment and employee well-being has focused on affective commitment, particularly affective commitment to the organization. These studies include the positive relationship of affective commitment with general physical well-being [108], general health [109], mental health [110], positive impact [111], work-related well-being [112], self-esteem [113] and life satisfaction [107].

Fewer studies have examined relationships between normative commitment and general health and well-being, most of which reported non-significant associations [114–116]. The only exception is a study conducted on employees in China, where the normative commitment was found to be positively associated with emotional exhaustion [117]. Similarly, studies on nurses revealed that stress has negative effects on nurses' psychological well-being and job results [118–121]. Therefore, the following hypotheses were proposed:

H₂: Well-being affects occupational commitment positively and significantly.

H_{2a}: Well-being affects occupational affective commitment positively and significantly.

H_{2b}: Well-being affects occupational continuance commitment positively and significantly.

H_{2c}: Well-being affects occupational normative commitment positively and significantly.

3.3. COVID-19 anxiety and occupational commitment

Numerous studies point out that anxiety negatively affects behaviour control processes. In their study, Taha et al. [46] concluded that men are more successful in managing anxiety and stress than women. Similarly, other studies in the literature deal with the relationship of anxiety with demographic variables, especially age [40,41]. A study conducted on students has revealed that students with high test anxiety have worse test scores [43]. In this context, it can be stated that anxiety has a negative effect on individuals' lifestyles and events considered important for them. Occupational commitment is also an important issue that affects people's lifestyles. In their study on tour operators, Yetgin and Benligiray [9] claim that anxiety generally negatively affects occupational commitment.

One of the most important factors disturbing individuals is anxiety about their careers. Similarly, occupational anxiety arises from the individual's inability to fulfil the requirements of their profession, insufficient income and lack of job security [122]. The occupational commitment of individuals who earn sufficient income and feel safe in their work increases [74], and eventually they become fond of their occupation. However, individuals who are uncertain about their future feel more anxious [123], harming their occupational commitment.

With the onset of the COVID-19 epidemic, an increase in the economic anxiety levels of individuals has also been observed. Economic anxiety causes emotional exhaustion. Especially, low income levels, insufficient wages, irregular payments, unemployment and economic crises can cause economic anxiety [123]. An increase in income levels contributes to an increase in well-being levels and living standards [124]. On the other hand, a decrease in income levels of individuals results in unhappiness and economic anxiety. In turn, economic anxiety also affects the physical and mental health of individuals. Besides, economic anxiety reduces occupational commitment.

During the pandemic, first health fear and then economic fear and anxiety of the individuals have increased. As the fear deepens, it ultimately creates depression, and both fear and depression are associated with different forms of anxiety [37]. On the other hand, studies are attempting to understand the direct and indirect relationship between 'fear of COVID-19' and career anxiety [37]. It can be concluded that the anxiety of COVID-19 that occurred during the pandemic has also affected

the occupational commitment of the individuals. In line with this, the following hypotheses have been suggested:

H₃: COVID-19 anxiety negatively affects occupational commitment.

H_{3a}: COVID-19 anxiety negatively affects affective commitment.

H_{3b}: COVID-19 anxiety negatively affects occupational continuance commitment.

H_{3c}: COVID-19 anxiety negatively affects occupational normative commitment.

Previous studies show that anxiety is a variable that affects well-being [88]. Studies conducted on the relationship between well-being and occupational commitment also show that the former significantly affects the latter [125]. Drawing on the findings in the literature, another aim of this study is to investigate the mediator role of well-being in the effect of COVID-19 anxiety on occupational commitment. The following hypotheses guided this aim:

H₄: Well-being has a mediator role in the effect of COVID-19 anxiety on occupational commitment.

H_{4a}: Well-being has a mediator role in the effect of COVID-19 anxiety on occupational affective commitment.

H_{4b}: Well-being has a mediator role in the effect of COVID-19 anxiety on occupational continuance commitment.

H_{4c}: Well-being has a mediator role in the effect of COVID-19 anxiety on occupational normative commitment.

4. Research method

In the current study, conducted to investigate the effects of COVID-19 anxiety on occupational commitment and well-being of employees in the aviation sector, information about the sample, scale and analysis of scales are presented respectively. Based on the data obtained from the sample, a model was created and exploratory and confirmatory factor analyses of the variables were conducted. Correlations between variables were examined. The structural equation model was established for the created model and the goodness-of-fit values of the model were tested. Regression analysis and hypothesis tests between variables were also performed to determine the relationships and effects. Since the mediator effect of the model was tested, the evaluations were made by applying hierarchical regression analysis. As a result of the findings and analysis, hypotheses were formed in the light of the existing research and theories in the literature. The research model for variables and hypotheses regarding relationships between variables are shown in Figure 1.

4.1. Participants

The participants of the study consisted of flight personnel working in airline companies operating in the public and private sectors in Turkey. Surveys were conducted online using Google Survey. They were sent to all flight personnel in the Turkish aviation sector. In these companies, a total of 24,543 employees work, including 3755 captain pilots, 3653 co-pilots, 4992 cabin supervisors and 12,143 cabin attendants (as of November 2020). In line with the research conducted, a survey was sent to airline employees: 3926 of the sent questionnaires were returned and 3862 of them were found suitable for analysis. Demographic features of the participants in the sample group are explained in the following.

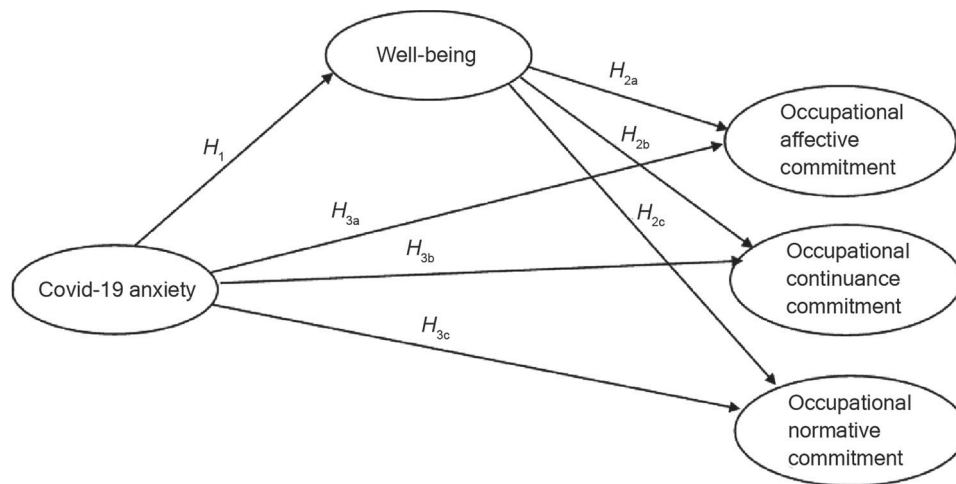


Figure 1. Research model and hypotheses.

The gender distribution and marriage status of the participants was as follows: 50.6% of the participants were female ($n = 1953$), 49.4% ($n = 1909$) were male; and 45.1% ($n = 1743$) were married, 54.8% ($n = 2117$) were single. The educational background of the participants was as follows: high school, 9.7% ($n = 373$); bachelor's degree, 75% ($n = 2897$); master's degree, 15% ($n = 578$); and PhD, 0.4% ($n = 14$). The age distribution of the participants was as follows: 19% were aged over 39 years ($n = 733$), 28.4% were aged 32–38 years ($n = 1097$), 46.5% were aged 25–31 years ($n = 1796$) and 6.11% were aged 18–24 years ($n = 236$). As for their work experience, 55.6% of the participants had 1–5 years of experience ($n = 2147$), 23.3% of them 6–10 years ($n = 899$), 11.3% of them 11–15 years ($n = 436$) and 9.83% of them 15 years or more ($n = 380$).

4.2. Data collection tools

In this study, the coronavirus anxiety scale, the commitment to occupations scale and the well-being scale were used. To determine the fit of the model and the hypothesis validity, path analyses were performed on the variables. The measurement tools used in the model must fulfil the validity and reliability conditions for the path analysis to be performed properly [126]. The validity and reliability tests of the scales in the study were carried out and the results were evaluated within the literature of the scales. Based on the results of the analysis, the Kaiser–Meyer–Olkin (KMO) test value of the three scales was found ($KMO > 0.77$) and Bartlett's test results of all three scales were found to be significant. In line with these findings, the number of data was deemed appropriate for factor analysis. Reliability coefficients, correlation and hierarchical regression analysis, and exploratory factor analysis of the scales were tested with SPSS version 22.0, and confirmatory factor analysis and goodness-of-fit values were tested with AMOS version 6.0. Details of the scales used in the current study are given in the following.

4.2.1. Coronavirus anxiety scale

The five-item coronavirus anxiety scale developed by Lee in 2020 was used to measure the coronavirus anxiety levels of participants. This scale was developed based on 20 items in the scales used in the psychological fear and anxiety literature [127–130]. These items specifically show the cognitive,

behavioural, emotional and physiological anxiety dimensions of COVID anxiety [131]. The Cronbach α reliability coefficient of this five-item scale was determined to be 0.93. Factor loadings vary between 0.81 and 0.84 [131]. Each item was graded on a 5-point scale ranging from 1 = *not at all* to 5 = *almost daily* reflecting the frequency of symptoms over the previous 2 weeks. To evaluate the construct validity of the scale, the exploratory factor analysis was performed with SPSS version 22.0 and it was found that the data fit the single-factor structure of the scale. Based on the results of the analysis, it was determined that the five-item scale has factor loads between 0.66 and 0.72, the KMO test has a value of 0.77 and the Bartlett test result is significant ($p = 0.000$). According to the results of the confirmatory factor analysis performed with AMOS version 6.0, factor loadings were found to vary between 0.49 and 0.68. The Cronbach α reliability coefficient was found to be 0.72.

4.2.2. Occupational commitment scale

The occupational commitment scale developed by Meyer et al. [74] was used to measure the commitment of the participants to their occupation. The scale consists of three dimensions with six items for each dimension: affective, continuance and normative. Replies were taken on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). In the original study conducted by Meyer et al. [74], the Cronbach α coefficient in terms of occupational affective commitment was 0.85 for the first sample and 0.82 for the second sample; was 0.83 for the first sample and 0.76 for the second sample in terms of occupational continuance commitment; and was 0.77 for the first sample and 0.80 for the second sample in terms of occupational normative commitment.

The scale was adapted into Turkish by Tak and Aydem-Çiftçioğlu [68]. In their study, the reliability coefficients of the items of the scale were determined as Cronbach's α of 0.75 for affective occupational commitment, 0.27 for occupational continuance commitment and 0.73 for normative occupational commitment. The factor analysis results showed that the scale was divided into three dimensions (affective, continuance and normative), and the factor loadings ranged from 0.59 to 0.75 for occupational affective commitment, from 0.51 to 0.79 for occupational continuance commitment and above 0.40 for occupational normative commitment, which is generally accepted. According to the results of the analysis, it was

seen that the reliability coefficient of the occupational continuance commitment dimension was low (Cronbach's α coefficient = 0.27) and there was a weak correlation between the items in the scale. Besides, exploratory factor analysis revealed that some items in the study did not load explicitly on the relevant factor in affective, normative and continuance commitment dimensions.

As a result of the analyses conducted within the scope of the current study in which the occupational commitment of aviation personnel is measured, the KMO test value of the occupational commitment scale is 0.91 with $p = 0.000$, and the sample size is sufficient for factor analysis. According to the exploratory factor analysis results with SPSS version 22.0 to evaluate the construct validity of the scale, it was determined that the data adapted to the three-dimensional structure after an item that disrupted the three-dimensional structure of the scale was excluded from the analysis, and the goodness-of-fit values was in accordance with the first-level associated model values. The factor loadings were determined as 0.35–0.72 for occupational commitment, 0.56–0.85 for occupational continuance commitment and 0.50–0.78 for occupational normative commitment. As a result of the confirmatory factor analysis performed with AMOS, the data were suitable for the three-factor structure of the scale and the factor loads were found to be 0.43 and 0.80 for occupational affective commitment, 0.59 and 0.88 for occupational continuance commitment, and 0.47 and 0.81 for occupational normative commitment. Based on the reliability analysis, the Cronbach α coefficient is 0.88 in total; occupational affective commitment 0.72, occupational continuance commitment 0.86 and occupational normative commitment 0.84.

4.2.3. Well-being scale

In this study, Çelik et al.'s [132] Turkish adaptation of Avey et al.'s [86] general well-being scale was used, which was based on the general well-being scale consisting of 12 items frequently referred to in the literature developed by Goldberg in 1972 [133] and Goldberg and Hillier in 1979 [134]. The questions on the validated scale are 'I can concentrate on what I do' and 'I feel happy despite everything'. The Cronbach α reliability coefficient was calculated as 0.80 by Avey et al. [86], and as 0.80 by Çelik et al. [132].

As a result of the analyses made in the current study in which the well-being of aviation personnel is measured, the KMO test value is 0.91 and the sample size is sufficient for the factor analysis. Considering compliance with the factor analysis, Bartlett's test of sphericity is $p = 0.000$ and the data are suitable for the analysis. Based on the results of the exploratory factor analysis performed to determine the construct validity of the scale, it was observed that two items disrupted the single-dimensional structure of the scale and were therefore removed from the analysis and adapted to the single-dimensional structure. After this change, according to the results of the repeated exploratory factor analysis, it was determined that the factor load values of the scale consisting of 10 items ranged from 0.57 to 0.82. As a result of the confirmatory factor analysis performed with AMOS, it was determined that the data were suitable for the single-factor structure of the scale, and the factor loads varied between 0.51 and 0.81. The goodness-of-fit values of the scale are presented in Table 1. In the reliability analysis of the scale, the Cronbach α reliability coefficient of the scale was determined as 0.88 in total.

4.3. Limitations

This research has some limitations to be declared and taken into consideration when making interpretations. The first limitation of the study is sectoral limitation. It only focuses on the aviation sector. The second limitation of the study is country limitation. It covers only one country sample group from Turkey. So, for making global generalizations, the results have to be compared with similar research studies conducted in other countries. The third limitation is the data collection method. The data were collected using an online survey, so this gives a chance for making generalizations from the sample group to the whole population (aviation sector employees in Turkey) but does not allow reaching deep findings as in the case of interviews. The fourth and last limitation is about the language limitation of the survey. Since the survey is in Turkish only, employees who can speak Turkish are included (foreign employees are not included, so their problems may not be reflected). These four limitations have to be considered when evaluating the results of the study.

5. Findings

The data obtained in the research were analysed using SPSS version 22 and AMOS version 6.0. First of all, the mean, standard deviations and correlation values of the data explaining the participants' COVID-19 anxiety levels, well-being and occupational commitment were examined (Table 2). The model was created according to the structural equation model and the path analyses were carried out. The hypotheses of the study were tested in line with the results of path analysis and the model of the alleged relationships in the study was determined.

As can be seen in Table 2, apart from the relationship between the variables of COVID anxiety and occupational continuance commitment, there are significant relationships between the independent variables and dependent variables of the current research. It can be thought that the employees in the aviation sector are committed to continuing their occupations, but with the COVID pandemic this commitment can create a meaningless relationship due to disease transmission anxiety.

Before path analysis, whether there is a difference based on the demographic characteristics of the sample was analysed with analysis of variance (ANOVA) and t tests. Within the scope of these tests, whether there is a significant difference between groups in terms of gender and educational status regarding perceptions of COVID anxiety, well-being and occupational commitment was investigated. A significant difference was found between the opinions of employees working as flight personnel in airlines regarding the COVID 19 anxiety according to their gender ($t = 5.22$ $p < 0.05$). The mean of female employees' views on COVID 19 anxiety (the sum of squares due to the source (ss) = 0.27) was higher than that of male employees ($ss = 0.24$). These results show that female employees experience more COVID-19 anxiety than male employees. There was no significant difference in the tests performed between the other groups. It was determined that there was no relationship between the perception levels of the variables of COVID anxiety, well-being and occupational commitment.

The results of the structural equation model established to determine the effect of COVID anxiety and well-being on the occupational commitment of the participants are shown

Table 1. Goodness-of-fit values for confirmatory factor analysis.

Variable	χ^2	<i>df</i>	$\chi^2 / df \leq 5$	GFI ≥ 0.85	AGFI ≥ 0.80	CFI ≥ 0.90	TLI ≥ 0.90	rmsea ≤ 0.08
COVID-19 anxiety	80.944	4	20.236	0.991	0.965	0.977	0.942	0.076
Occupational commitment	1445.699	114	12.682	0.948	0.931	0.946	0.935	0.059
Well-being	553.007	32	17.281	0.968	0.944	0.964	0.950	0.070

Note: Goodness-of-fit value ranges arranged according to 'acceptable' standards. Explanation of CMIN / *df* ≤ 5 is given in the Findings section. AGFI = adjusted goodness-of-fit index; CFI = comparative fit index; CMIN = minimum discrepancy function; GFI = goodness-of-fit index; rmsea = root mean square error of approximation; TLI = Tucker–Lewis index.

Table 2. Mean, standard deviation and correlation values for the data.

Variable	Mean	<i>SD</i>	Occ.Aff.C.	Occ.Cont.C.	Occ.Norm.C.	Occ.C.	Well-being	COVID-19 anxiety
Occ.Aff.C.	4.5062	0.50221	(0.746)	–	–	–	–	–
Occ.Cont.C.	4.0817	0.78680	0.391**	(0.867)	–	–	–	–
Occ.Norm.C.	3.7774	0.80521	0.468**	0.610**	(0.847)	–	–	–
Occ.C.	4.1218	0.57543	0.687**	0.854**	0.881**	(0.889)	–	–
Well-being	4.3543	0.49695	0.452**	0.199**	0.356**	0.388**	(0.883)	–
COVID-19 Anxiety	1.1309	0.26280	–0.103**	–0.003	–0.055**	–0.057**	–0.321**	(0.845)

The bold values in the table shows the significance levels at: * $p < 0.05$; ** $p < 0.01$; Note: Occ.Aff.C. = occupational affective commitment; Occ.Cont.C. = occupational continuance commitment; Occ.Norm.C. = occupational normative commitment; Occ.C. = occupational commitment;

in Figure 2. When the fit indices of the model are examined, it was found that the goodness-of-fit index (GFI) value is 0.90, the adjusted goodness of fit index (AGFI) value is 0.88, the comparative fit index (CFI) value is 0.90, the normed goodness-of-fit index (NFI) is 0.89, the minimum discrepancy function (CMIN) / *df* value is 11.61 and the root mean square error of approximation (rmsea) value is 0.06. For a model to be accepted, the rmsea value must be below 0.08 [126]. Within the scope of the values obtained, in accordance with the study by Kline [135], the goodness-of-fit value (> 0.90) of the structural equation model in this study is acceptable.

The fact that the CMIN / *df* value is 11.61 and is not acceptable within the limits can be explained by the sample size. Especially in studies conducted with sample sizes above 1000, the CMIN / *df* value increases more than normal due to the sample size rather than the structure of the model. The fact that 3862 samples were studied in the current study and that other goodness-of-fit values were within acceptable limits shows that the values of the proposed model are suitable for the analysis.

Based on the analysis, it was found that COVID-19 anxiety significantly affected well-being and all three dimensions of occupational commitment (affective, continuance, normative). In addition, it was determined that well-being has a significant effect on three dimensions of occupational commitment (affective, continuance and normative occupational commitment). The values shown in Figure 2 are the analysis values of the research variables. When the values of the variables are examined separately, there are indications that the well-being of the employees may have a mediating effect on the effect of COVID-19 anxiety on occupational commitment. It has already been determined that COVID-19 anxiety has significant indirect effects on the dimensions of occupational commitment.

In the analyses, the precondition of the well-being variable, whose mediator effect is investigated, to be significant in the direction of occupational commitment was sought. Analysis results show that the aforementioned precondition was verified. Then, analyses were performed to determine the total effect, direct effect and indirect effect. As a result of the

analysis, an indirect effect was found to be -0.31 between COVID-19 anxiety and occupational affective commitment, -0.19 between COVID-19 anxiety and occupational continuance commitment, and -0.28 between COVID-19 anxiety and normative occupational commitment, and it was thought that well-being could play a mediating role in these indirect effects. To determine the mediator effect, hierarchical regression analysis [126] was conducted. As claimed by Lok and Bosch [136]: 'mediation analysis, which started with Baron and Kenny [137], is used extensively by applied researchers'. Applied research refers to scientific studies that seek to solve the practical problems of real life. Since this study also focus on the problems of real life in the aviation sector after the COVID-19 pandemic, Baron and Kenny's [137] mediation analysis is found useful to be conducted.

To explain the mediator effect of well-being on COVID-19 anxiety perceived by employees on their occupational commitment, a three-step regression analysis was conducted [137]. Three conditions must be met in this analysis. The first of these conditions is that the dependent variable affects the mediator variable significantly. The second is that the independent variable affects the dependent variable significantly. The third condition is that with the addition of the mediator variable to the second-step analysis, the mediator variable significantly affects the dependent variable, and the regression coefficient, which indicates that the independent variable affects the dependent variable, decreases. Based on these conditions, hierarchical regression analyses were conducted to determine the mediator role of well-being levels in the relationship between perceived COVID-19 anxiety and occupational commitment. Findings regarding the mediator test are presented in Table 3. Within the scope of the mediator test, in the initial stage, the effects of the control variables, gender and marital status, with the mediator role of independent variable COVID-19 anxiety, on well-being were investigated. As a result of the hierarchical regression analysis performed in this context, it was found that affective occupational commitment was affected significantly by COVID-19 anxiety ($\beta = -0.333$, $p < 0.01$), gender ($\beta = -0.083$, $p < 0.01$) and marital status ($\beta = -0.040$, $p < 0.05$).

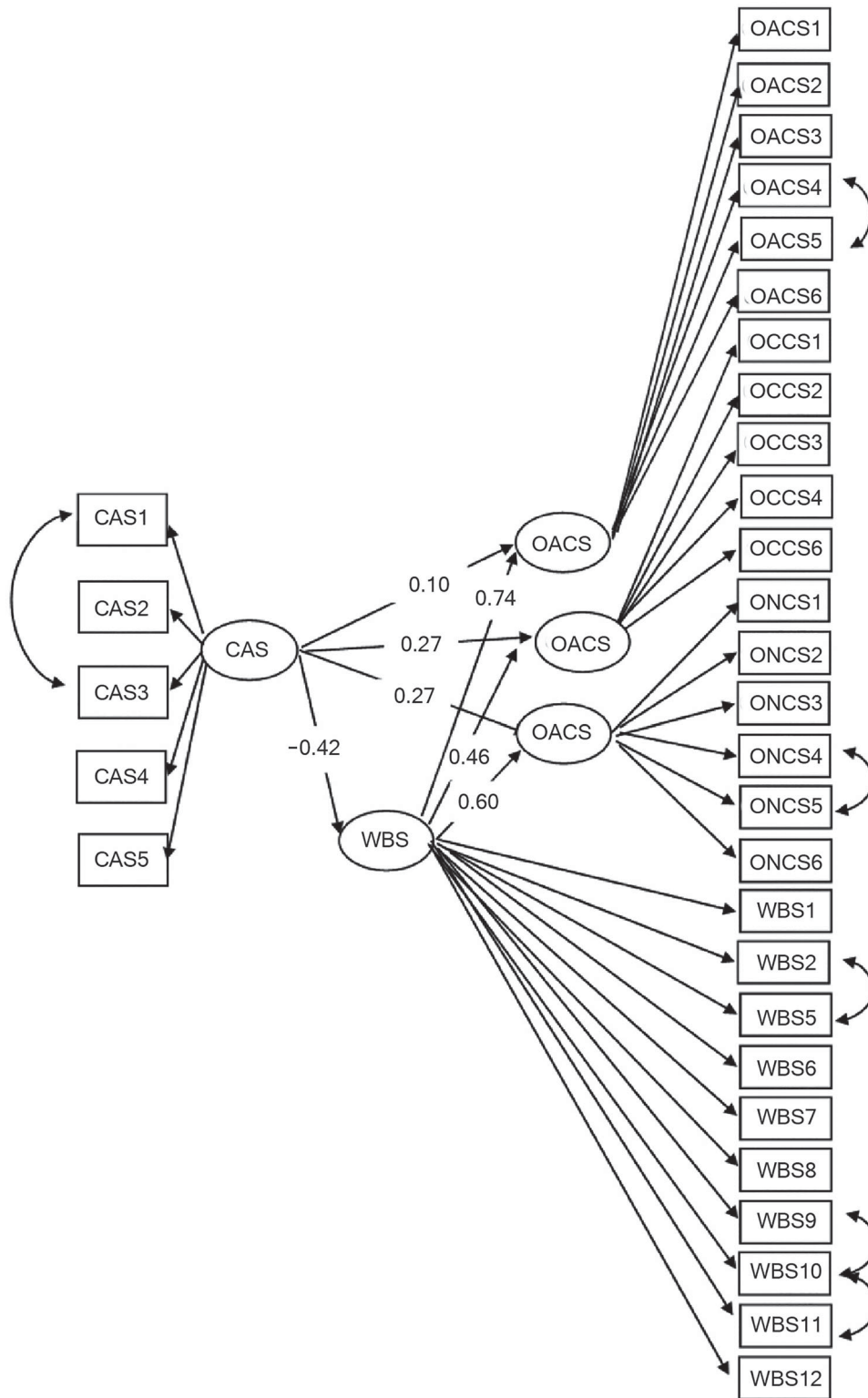


Figure 2. Structural equation model and analysis results.

* $p < 0.05$. ** $p < 0.01$. Note: CAS = coronavirus anxiety dimension of the scale; OACS = occupational affective commitment dimension of the scale; OCCS = occupational continuance commitment dimension of the scale; ONCS = occupational normative commitment dimension of the scale; WBS = well-being dimension of the scale.

In the second stage, the effects of the independent variable (COVID-19 anxiety) on the dependent variable (occupational affective commitment) were analysed. As a result of the analysis, it was determined that the COVID-19 anxiety variable negatively and significantly affects affective occupational commitment ($\beta = -0.109, p < 0.01$).

After meeting the precondition for the mediator effect, in the third stage the analysis continued with the inclusion of the mediator variable. As a result of the analysis, it was determined

that with the inclusion of well-being to the process where its effects were investigated on the dependent variable (affective occupational commitment), the negative effects of COVID-19 anxiety on affective occupational commitment decrease significantly and the mediator role of well-being preserves its significance. Therefore, it can be concluded that the well-being variable has a partial mediator role in the effect of COVID-19 anxiety on the dependent variable (occupational affective commitment).

Table 3. Mediator analysis results: well-being and occupational affective commitment.

Variable	Well-being	Occupational affective commitment
Test 1	–	–
COVID-19 anxiety	– 0.339**	–
Gender	– 0.083**	–
Marital status	– 0.040**	–
R^2	0.120	–
Adapted R^2	0.119	–
–	(F = 152.08**)	–
Test 2	–	–
COVID-19 anxiety	–	– 0.109**
Gender	–	– 0.089**
Marital status	–	– 0.064**
R^2	–	0.157
Adapted R^2	–	0.024 (F = 28.12**)
Test 3	–	–
COVID-19 anxiety	–	0.047**
Gender	–	– 0.051**
Marital status	–	– 0.046**
Well-being	–	0.462**
R^2	–	0.212
Adapted R^2	–	0.211 (F = 225.72**)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Note: N = 3862. Sobel test $z = 6.083$ ($p < 0.001$).

The same analysis was conducted for continuance commitment, the second dimension of occupational commitment. In the analyses conducted to investigate the mediator role of well-being in the effect of COVID-19 anxiety on occupational continuance commitment, it was observed that Baron and Kenny's [137] second prerequisite (COVID-19 anxiety does not have a significant effect on attendance commitment; $\beta = -0.003$, $p > 0.05$) was not provided.

Finally, to determine the mediator role of well-being level, the relationships between perceived COVID-19 anxiety and occupational normative commitment were examined through hierarchical regression analysis. Findings regarding the mediator test are presented in Table 4.

In the hierarchical regression analysis applied to test the mediator, it was found that COVID-19 anxiety ($\beta = -0.064$, $p < 0.01$) affected occupational normative commitment significantly.

In the second stage, the effects of the independent variable (COVID-19 anxiety) on the dependent variable (occupational normative commitment) were analysed. As a result of the analysis, it was determined that COVID-19 anxiety negatively ($\beta = -0.06$, $p < 0.01$) affected occupational normative commitment and this effect was significant. After these conditions were met, the Sobel test was performed to confirm the mediation effect and the Sobel z value was found to be significant ($z = 6.08$, $p < 0.001$).

The results of the tests in the first two stages show that the preconditions for the mediator were met. In the third stage, the analysis was re-performed with the addition of the mediator variable into the model. As a result of the analysis, it was determined that with the inclusion of well-being to the process where its effects were investigated on the dependent variable (normative occupational commitment), the negative effects of COVID-19 anxiety on normative occupational commitment decrease significantly and the mediator role of well-being

Table 4. Mediator analysis results: well-being and occupational normative commitment.

Variable	Well-being	Occupational normative commitment
Test 1	–	–
COVID-19 anxiety	– 0.339**	–
Gender	– 0.083**	–
Marital status	– 0.040**	–
R^2	0.120	–
Adapted R^2	0.119	–
–	(F = 152.08**)	–
Test 2	–	–
COVID-19 anxiety	–	– 0.064**
Gender	–	– 0.111**
Marital status	–	– 0.104**
R^2	–	0.030
Adapted R^2	–	0.029 (F = 35.00**)
Test 3	–	–
COVID-19 anxiety	–	0.060**
Gender	–	– 0.080**
Marital status	–	– 0.090**
Well-being	–	0.366**
R^2	–	0.148
Adapted R^2	–	0.147 (F = 145.80**)

The significance level of the bold values: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Note: N = 3862. Sobel test $z = 6.083$ ($p < 0.001$).

preserves its significance. Therefore, it can be said that the well-being variable has a partial mediator role in the effect of COVID-19 anxiety on the normative occupational commitment.

Within the scope of the analysis, collinearity was also examined to determine whether there is a multiple linear link problem in the model. The tolerance and variance inflation factor (VIF) values obtained gave results confirming that there are no multiple links between the independent variables (tolerance > 0.6 , VIF < 10). The data regarding the findings of the mediator tests are presented in Tables 3 and 4.

Hypothesis test results for the model are presented in Table 5. As seen in the table, H_1 , H_{3a} , H_{3b} and H_{3c} investigating the effect of COVID-19 anxiety perceived by employees on well-being and occupational commitment, and H_{2a} , H_{2b} and H_{2c} investigating the effect of well-being on occupational commitment were confirmed. In addition, H_{4a} questioning the mediator role of well-being in the relationship between COVID-19 anxiety and affective occupational commitment, and H_{4c} questioning the mediator role of well-being in the relationship between COVID-19 anxiety and normative occupational commitment were also confirmed. However, despite the significance of the path between well-being and occupational continuance commitment in the structural model shown in Figure 2, it was found that this effect was not significant in the hierarchical regression analysis performed to determine the mediator. Accordingly, H_{4b} was rejected.

6. Discussion and conclusion

Freud [32] defines fear as 'something to feel' and physical changes such as feelings of anxiety, anxious thoughts, tension and irritability. Anxiety, a theoretical concept, on the other hand, is expressed as understanding situations that are difficult to explain or disturbing [43]. Occupation is described as the

Table 5. Results of hypothesis tests.

	Hypothesis	Path coefficient	Result
H_1	COVID-19 anxiety → well-being	-0.42**	Confirmed
H_{2a}	Well-being → affective commitment	0.74	Confirmed
H_{2b}	Well-being → continuance commitment	0.46**	Confirmed
H_{2c}	Well-being → normative commitment	0.68*	Confirmed
H_{3a}	COVID-19 anxiety → affective commitment	0.18**	Confirmed
H_{3b}	COVID-19 anxiety → continuance commitment	0.27**	Confirmed
H_{3c}	COVID-19 anxiety → normative commitment	0.27**	Confirmed
H_{4a}	COVID-19 anxiety → well-being → affective Commitment	-	Confirmed
H_{4b}	COVID-19 anxiety → well-being → continuance Commitment	-	Rejected
H_{4c}	COVID-19 anxiety → well-being → normative Commitment	-	Confirmed

The significance levels of bold values in the table: * $p < 0.05$; ** $p < 0.01$.

field of work in which the individual works to make a living. The knowledge, skills and duties required by one occupation are different from those of other occupations [60]. Therefore, the individual can fulfil their duties because they have this knowledge and skills, contributing to the increase in the individual's commitment to their occupation [61]. Well-being, on the other hand, is the best health and well-being state that each individual has to reach their ideal capacity to achieve [86]. These explanations emphasize that well-being is a lifestyle that also includes general health conditions [85].

The current study examines the relationship between perceived COVID-19 anxiety, well-being and occupational commitment. To this end, research is conducted on flight personnel (cabin, and cockpit staff) working in public and private airline companies in Turkey. The research investigated the COVID-19 anxiety of aviation personnel and the effects of it on their occupational commitment. The main purpose of this research is to investigate the mediator effect of employee well-being on the effects of COVID-19 anxiety on occupational commitment. Within the scope of the aims of this research, data collected from the employees in the aviation sector – the sector most affected by the pandemic with a considerable employment potential – were analysed and important conclusions were drawn.

First of all, the validity and reliability of each scale used in the study were tested. As a result of the analysis, it was observed that the occupational commitment variable was divided into three factors, as in previous studies, and the general reliability of each dimension of the scale was found acceptable. Then, frequency analyses were performed. When the results of correlation and regression analyses were examined, it was determined that there was a significant relationship between the employees' perceived COVID-19 anxiety and well-being, and it was revealed that while the COVID-19 anxiety level increased, the well-being level decreased significantly (-0.33). These findings are similar to the findings obtained in the studies conducted by Steger and Kashdan [103], de Beurs et al. [104], and De los Santos and Labrague [121].

Based on the results of the analysis, it was determined that there was a significant relationship between perceived COVID-19 anxiety and the occupational commitment of the employees, and as the COVID-19 anxiety increases, the level of occupational commitment (-0.10) decreases. When the sub-dimensions of the occupational commitment were examined, it was observed that the levels of occupational affective commitment (-0.10) and occupational normative commitment decreased (-0.05) with the increase of COVID-19 anxiety. However, no significant relationship was found between COVID-19 anxiety and occupational continuance commitment. It can be stated that anxiety is a concept that has negative effects on events considered important for individuals and lifestyles while occupational commitment is a concept that positively affects people's lifestyles. The findings regarding the relationship between COVID-19 anxiety and occupational commitment mentioned by Yetgin and Benligiray [9] are also in line with this study.

As a result of the analysis, a significant and positive relationship between the perceived well-being levels and the occupational commitment levels of employees (0.39) was found. Researchers have long been investigating the effects of commitment on employees' health and well-being [105,106]. Meyer et al. [107] claim that commitment has a direct relationship with employees' health and well-being. The vast majority of studies that examine the relationship between commitment and employee well-being have focused on affective commitment, particularly the affective commitment to the organization. It has been shown that affective commitment has a positive relationship with physical well-being [108], general health [109], mental health [110], positive impact [111], work-related well-being [112], self-esteem [113] and life satisfaction [107]. The findings of the current study are consistent with the existing studies in the literature.

Analyses demonstrate that there are significant positive relationships between perceived well-being and dimensions of occupational commitment. Previous studies have reported that the relationships between occupational attendance commitment and employee well-being are the opposite of what is determined for affective commitment. Contrary to occupational affective commitment, occupational continuance commitment may have negative effects on well-being [107]. Fewer studies have examined relationships between normative commitment and general health status, and many of these reported no significant relationships [114–116]. The findings of the current study comply with those of studies in the literature [114–120].

As a result, it can be possible to attribute the non-existent relationship between occupational continuance commitment and COVID-19 anxiety to both economic and working conditions. It can be assumed that due to the global economic crisis during the pandemic, employees think of no other alternative solution such as finding a new job despite the COVID-19 anxiety they feel in their current jobs. The other assumption for the non-existent relationship between occupational continuance commitment and COVID-19 anxiety can be attributed to the procedural precautions taken, such as a mandatory polymerase chain reaction (PCR) test before the flight and hygiene and distance rules on the plane.

Finally, path analysis and hierarchical regression analyses were conducted to determine the mediator role of employees' well-being in the relationship between COVID-19 anxiety and occupational commitment. The findings obtained from the

structural equation model created according to the sample are compatible with the data. The model created among the variables of COVID-19 anxiety, well-being and occupational commitment is considered compatible. In the analyses, the precondition of the well-being variable, whose mediator effect was investigated, to be significant in the direction of occupational commitment was sought. Analysis results showed that the aforementioned precondition has been verified. Then, analyses were performed to determine the total effect, direct effect and indirect effect. Indirect effect values supported the mediator effect of well-being suggested in the model. Based on these findings, finally, hierarchical regression analysis was performed. Within the scope of the analysis, the precondition of the variables, whose mediator effect was investigated, to be existent in the determined direction was sought and it was seen that this precondition was met. As a result, it was determined that COVID-19 anxiety perceived by employees negatively and significantly affected their affective and normative occupational commitment, but not their occupational continuance commitment. Moreover, it was found that well-being has a partial mediator role in the effect of COVID-19 anxiety on occupational affective commitment and occupational normative commitment.

The current research has revealed that COVID-19 anxiety and well-being have important effects on the occupational commitment of the flight personnel (cabin and cockpit staff) in the aviation sector. As indicated by Baka [21] in the research related to healthcare personnel:

prolonged coronavirus anxiety and sleeping problems depleted healthcare providers' resources and made them feel exhausted. Exhaustion among these workers can have serious consequences not only for themselves but also for the health of their patients. Therefore, research into effective ways to deal with coronavirus anxiety is needed (p.263).

This research also finds similar results regarding the effects of COVID-19 anxiety on aviation sector employees. In the aviation sector, negative impacts such as sleeping problems and exhaustion will not just affect the lives of these employees but also all of the people using the aviation service. The risk is directed both for the lives of aviation sector employees and the passengers they served. In a similar vein, Mihaylova et al. [22] conducted research on healthcare workers as well and their research concluded that 'Healthcare workers with a higher level of generalized anxiety were more likely to have difficulties doing their jobs, taking care of things at home, or getting along with other people (p.828)'. So, the authors claim that the anxiety experienced is of immense importance for the functioning of the individual. That is why they recommend 'for healthcare specialists to feel that they receive social support to reduce their anxiety levels and to better balance their work and personal life, having more free time to take care of themselves and their close relationships (p.828)' [22]. So the same recommendation can be extended to other sectors including aviation, in which the employees have to work in close contact with people. Moreover the study conducted by Ahmed et al. [25] shows that these negative impacts are not just limited with any single-sector employees but relevant to almost all of the public. The authors' study concludes that the spread of 'COVID-19 increase the stress and worry of the public regarding their health, their family health and negative economic effect of the disease (p.54)' [22]. In another study, Lee et al. [28] assert that 'The adverse psychological effects of COVID-19 have increased globally (p.1)'. The authors'

study concluded that 'coronaphobia explained additional variance in depression, generalized anxiety, and death anxiety, above socio-demographics, COVID-19 factors, and the vulnerability factors of neuroticism, health anxiety, and reassurance-seeking behaviours (p.1)' [28]. So the psychological distress increased by the recent pandemic, which has affected almost all of the sectors and humanity, seems to be an important issue of challenge in the upcoming period. For this reason, taking additional measures that can reduce the concerns of employees regarding the pandemic is necessary to keep qualified and experienced employees in the organization. Besides, practices that may increase the well-being levels of the employees can be beneficial for ensuring their occupational commitment. Because the studies related to the issue show that increased well-being helps people to cope with the stress brought by the pandemic. For example, the findings of the study conducted by Yıldırım et al. [23] explain 'why and when mental well-being-based interventions could be effective in reducing perceived coronavirus risk, fear and parental coronavirus anxiety about their children (p.1)'; their findings provide evidence that 'Mental well-being moderated the effect of coronavirus risk on parental coronavirus anxiety'. From this point of view it is possible to assert that, for any organization, including the aviation sector, it is important to support their employees' well-being in all its aspects to help them cope with the challenges and distress brought by the COVID-19 pandemic. So, they may perform their tasks in an effective and efficient manner without causing any unintended accidents and/or decrease in their regular performance. The findings of other research conducted by Akbolat et al. [24] also supports these claims. The authors' research reaches several findings as follows:

First, the safety environment perceived by employees reduces their stress. Second, psychological well-being plays a mediating role in relation to the effect of safety climate on job stress. This role contributes to the reduction of stress through the improvement of the safety climate (p.1). [24]

By taking all of these research findings into consideration it is important to develop a better safety environment, provide support for the staff and increase their well-being to decrease their stress regarding COVID-19 pandemics. It is also important for managers and leaders to consider this issue in their management processes. Governments and administrations have to take precautions and implement education programmes for their personnel to increase awareness of the impacts of the COVID-19 pandemic and how to cope with its problems. Similarly, Guan et al. [27] assessed 'the prevalence of anxiety and its potential influencing factors among college students' in their study. The authors suggest that 'the government could strengthen health education related to COVID-19 and supervise the performance of preventive behaviours to handle anxiety (p.1)' [27].

As can be seen from the studies discussed, the current literature usually focuses on the impacts of COVID-19 pandemics on healthcare employees, students or the public in general. Based on the fact that no studies indicated a relationship between COVID-19 anxiety and occupational commitment and well-being variables in the literature, and the same gap is also valid related to research on the aviation sector, it is evaluated that the results of this study have a potential to fill this gap. Moreover, COVID-19 anxiety is a variable that has recently entered into the literature, and it is considered that the results of the current research may contribute to addressing this research gap as well.

This study is not without limitations. The research only reveals the situation in the aviation sector in Turkey; comprehensive studies can be carried out to investigate the possible effects of COVID-19 on working life and employees. Besides, similar studies may yield different results in different sectors. Studies similar can also be carried out by adding different variables on the employees of different sectors.

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References

- [1] Taylor S. The psychology of pandemics: preparing for the next global outbreak of infectious disease. Newcastle Upon Tyne: Cambridge; 2019.
- [2] Johnson NP, Mueller J. Updating the accounts: global mortality of the 1918–1920 ‘Spanish’ influenza pandemic. *Bull Hist Med.* 2002;76:105–115. doi:10.1353/bhm.2002.0022
- [3] Alkis Y, Kadirhan Z, Sat M. Development and validation of social anxiety scale for social media users. *Comput Hum Behav.* 2017;72:296–303. doi:10.1016/j.chb.2017.03.011
- [4] Morens DM, Fauci AS. Pandemic Zika: a formidable challenge to medicine and public health. *J Infect Dis.* 2017;216(10):857–859. doi:10.1093/infdis/jix383
- [5] WHO. Pandemic fatigue: Reinvigorating the public to prevent COVID-19; [Internet]; 2020 [cited 2022 Mar 8]. Available from: <http://www.who.int/> <https://apps.who.int/iris/bitstream/handle/10665/335820/WHO-EURO-2020-1160-40906-55390-eng.pdf>
- [6] WHO. Coronavirus disease (COVID-19) pandemic [Internet]; 2020 [cited 2021 Jan 14]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- [7] WHO. Timeline: WHO’s COVID-19 response; [Internet]; 2020 [cited 2022 Mar 8]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline>
- [8] Bakker A, Wagner D. Pandemic: lessons for today and tomorrow? *Educ Stud Math.* 2020;104(1):1–4. doi:10.1007/s10649-020-09946-3
- [9] Yetgin D, Benligiray S. The effect of economic anxiety and occupational burnout levels of tour guides on their occupational commitment. *Asia Pac J Tour Res.* 2019;24(4):333–347. doi:10.1080/10941665.2018.1564681
- [10] Macit A, Macit D. Türk sivil havacılık sektöründe COVID-19 pandemisinin yönetimi (The Management of COVID-19 Pandemic in Turkish Civil Aviation Sector). *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi (Euroasia social and Economics Research Journal).* 2020;7(4):100–116.
- [11] Weir K. Seven crucial research findings that can help people deal with COVID-19 [Internet]; 2020 Mar 16 [cited 8 March 2022]. Available from: <https://www.apa.org/news/apa/2020/covid-19-research-findings>
- [12] Duan L, Zhu G. Psychological interventions for people affected by the COVID-19 epidemic. *Lancet Psychiatry.* 2020;7(4):300–302. doi:10.1016/S2215-0366(20)30073-0
- [13] Xiao C. A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: structured letter therapy. *Psychiatry Investig.* 2020;17(2):175–176. doi:10.30773/pi.2020.0047
- [14] Kirzinger A, Hamel L, Muñana C, et al. KFF Health Tracking Poll - Late April 2020: Coronavirus, Social Distancing, and Contact Tracing; 2020 Apr 24 [cited Mar 8 2022]. <https://www.kff.org/coronavirus-covid-19/issue-brief/kff-health-tracking-poll-late-april-2020/>
- [15] Craig AT, Heywood AE, Hall J. Risk of COVID-19 importation to the Pacific islands through global air travel. *Epidemiol Infect.* 2020;148:e71. doi:10.1017/S0950268820000710
- [16] Hopancı B, Akdeniz H, Şahin Ö. The effect of COVID19 pandemic on aviation industry. *Eng Mach.* 2021;62(704):446–467.
- [17] ATAG. ATAG report on the impacts of COVID-19 to aviation sector [Internet]; 2020 [cited 2022 Feb 15]. Turkish. Available from: <https://web.shgm.gov.tr/tr/haberler/6465-atag-covid-19un-havacilik-sektorune-etkilerini-iceren-rapor-yayimladi>
- [18] Turkish Airlines. 1st of July–30th of September 2021 Board of Directors’ Activity Report [Internet]; 2021 [cited 2022 Feb 15]. Turkish. Available from: <https://investor.turkishairlines.com/documents/faaliyet-raporlari/yk-faaliyet-raporu-3q2021-tr-v3.pdf>
- [19] Mhalla M. The impact of novel coronavirus (COVID-19) on the global oil and aviation markets. *J Asia Sci Res.* 2020;10(2):96–104. doi:10.18488/journal.2.2020.102.96.104
- [20] Dizer U, Demirpek U. Blood supply in pandemics. *Turk J Infect.* 2009;23(1):29–34.
- [21] Baka L. Coronavirus anxiety and exhaustion among polish front-line healthcare workers – the mediation effect of insomnia. *Int J Occup Med Environ Health.* 2021;34(2):263–273. doi:10.13075/ijomh.1896.01745
- [22] Mihaylova T, Koychev A, Stoyanova S, et al. Generalized anxiety in healthcare workers during the coronavirus pandemic. *Biotechnol Biotechnol Equip.* 2021;35(1):828–838. doi:10.1080/13102818.2021.1932596
- [23] Yıldırım M, Özasan A, Arslan G. Perceived risk and parental coronavirus anxiety in healthcare workers: a moderated mediation role of coronavirus fear and mental well-being. *Psychol Health Med.* 2021;1–12. doi:10.1080/13548506.2021.1871771
- [24] Akbolat M, Amarat M, Yıldırım Y, et al. Moderating effect of psychological well-being on the effect of workplace safety climate on job stress. *Int J Occup Saf Ergon.* 2022;1–6. doi:10.1080/10803548.2022.2026073.
- [25] Ahmed NJ, Alrawili AS, Alkhwaja FZ. The anxiety and stress of the public during the spread of novel coronavirus (COVID-19). *J Pharm Res Int.* 2020;2(7):54–59. doi:10.9734/jpri/2020/v3i2i730460
- [26] Artan T, Cebeci F, Karaman M, et al. The relationship between coronavirus (COVID-19) outbreak related perceptions and health anxiety. *Soc Work Public Health.* 2022;37(2):135–145. doi:10.1080/19371918.2021.198645
- [27] Guan J, Wu C, Wei D, et al. Prevalence and factors for anxiety during the COVID-19 pandemic among college students in China. *Int J Environ Res Public Health.* 2021 May 7;18(9):4974. doi:10.3390/ijerph18094974. PMID: 34067045; PMCID: PMC8124424.
- [28] Lee SA, Jobe MC, Mathis AA, et al. Incremental validity of coronaphobia: coronavirus anxiety explains depression, generalized anxiety, and death anxiety. *J Anxiety Disord.* 2020;74:102268. doi:10.1016/j.janxdis.2020.102268
- [29] Rigoli F. Opinions about immigration, patriotism, and welfare policies during the coronavirus emergency: the role of political orientation and anxiety. *Soc Sci J.* 2020. doi:10.1080/03623319.2020.1806583
- [30] Muniswamy P, Peter IG, Gorhe V, et al. Association between physical and mental health variables among software professionals working at home: a secondary analysis. *Int J Occup Saf Ergon.* 2021;1–9. doi:10.1080/10803548.2021.1986307
- [31] Steimer T. The biology of fear- and anxiety-related behaviors. *Dialogues Clin Neurosci.* 2002;4(3):231–249. doi:10.31887/DCNS.2002.4.3/tsteimer
- [32] Freud S. History of the psychoanalytic movement. In: Ernest Jones ed. Sigmund Freud collected papers. Translated by Joan Riviere. London: Hogarth Press; 1924; p. 285–359.
- [33] Kazdin AE. Developing a research agenda for child and adolescent psychotherapy. *Arch Gen Psychiatry.* 2000;57(9):829–835. doi:10.1001/archpsyc.57.9.829
- [34] Barlow DH. Unraveling the mysteries of anxiety and its disorders from the perspective of emotion theory. *Am Psychol.* 2000;55(11):1247–1263. doi:10.1037/0003-066X.55.11.1247.
- [35] Barlow DH, Chorpita BF, Turovsky J. Fear, panic, anxiety, and disorders of emotion. In: Hope DA, editor. Nebraska Symposium on

- Motivation, 1995: perspectives on anxiety, panic, and fear Vol. 43. Lincoln (NE): University of Nebraska Press; 1996. p. 251–328.
- [36] Bouton ME, Mineka S, Barlow DH. A modern learning theory perspective on the etiology of panic disorder. *Psychol Rev.* 2001;108(1):4–32. doi:10.1037/0033-295X.108.1.4
- [37] Mahmud MS, Talukder MU, Rahman SM. Does 'Fear of COVID-19' trigger future career anxiety? An empirical investigation considering depression from COVID-19 as a mediator. *Int J Soc Psychiatry.* 2021;67(1):35–45. doi:10.1177/0020764020935488
- [38] TDK. Türk Dil Kurumu Sözlükleri [Turkish Language Institution Dictionaries] [cited 8 March 2022]. Turkish. Available from: <https://sozluk.gov.tr/>
- [39] Allwright R, Allwright D, Bailey KM. Focus on the language classroom: an introduction to classroom research for language teachers. Cambridge: Cambridge University Press; 1991.
- [40] Akgün S. İç iletişim sürecinde kaygı düzeylerinin öğrenci başarısı üzerine etkisi [unpublished master's thesis]. Konya: Selçuk University Social Sciences Institute; 2018.
- [41] Beksaçı I. Üniversite öğrencilerinde yaşam doyumu ile depresyon ve kaygı düzeyleri arasındaki ilişki [unpublished master's thesis]. Samsun: Ondokuz Mayıs University. Education Sciences Institute; 2019.
- [42] Tekin E. COVID-19 Kaygısının Motivasyon Üzerindeki Etkisi: Z Kuşağı Üzerine Bir Araştırma. *Electron Turk Stud.* 2020;15(4):1129–1145. doi:10.7827/TurkishStudies.44070
- [43] Morosanova V, Fomina T, Filippova E. The relationship between the conscious selfregulation of schoolchildren's learning activity, their test anxiety level, and the final exam result in mathematics. *Behav Sci.* 2020;10(1):16–26. doi:10.3390/bs10010016
- [44] Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the Beck depression and anxiety inventories. *Behav Res Ther.* 1995;33(3):335–343. doi:10.1016/0005-7967(94)00075-U
- [45] Taylor S. Anxiety sensitivity. In: Abramowitz JS, Blakey SM, editors. *Clinical handbook of fear and anxiety: psychological processes and treatment mechanisms.* Washington, DC: American Psychological Association; 2019. p. 65–90.
- [46] Taha S, Matheson K, Cronin T, et al. Intolerance of uncertainty, appraisals, coping, and anxiety: the case of the 2009 H1N1 pandemic. *Br J Health Psychol.* 2014;19(3):592–605. doi:10.1111/bjhp.12058
- [47] Çiçek B, Almalı V. COVID-19 Pandemisi Sürecinde Kaygı Öz-yeterlilik ve Psikolojik İyi Oluş Arasındaki İlişki: Özel Sektör ve Kamu Çalışanları Karşılaştırması. *Electron Turkish Stud.* 2020;15(4):241–260.
- [48] Abramowitz JS, Braddock AE. *Hypochondriasis and health anxiety.* Vol. 19. Göttingen, Germany: Hogrefe Publishing; 2011.
- [49] Taylor S, Asmundson G. *Treating health anxiety: a cognitive behavioral approach.* New York (NY): Guilford; 2004.
- [50] Gilles I, Bangertner A, Clémence A, et al. Trust in medical organizations predicts pandemic (H1N1) 2009 vaccination behavior and perceived efficacy of protection measures in the Swiss public. *Eur J Epidemiol.* 2011;26(3):203–210. doi:10.1007/s10654-011-9577-2
- [51] Goodwin R, Gaines SO, Myers L, et al. Initial psychological responses to swine flu. *Int J Behav Med.* 2011;18(2):88–92. doi:10.1007/s12529-010-9083-z
- [52] Rubin GJ, Amlôt R, Page L, et al. Public perceptions, anxiety, and behaviour change in relation to the swine flu outbreak: cross sectional telephone survey. *BMJ.* 2009;339:b2651. doi:10.1136/bmj.b2651
- [53] Williams L, Rasmussen S, Kleczkowski A, et al. Protection motivation theory and social distancing behaviour in response to a simulated infectious disease epidemic. *Psychol Health Med.* 2015;20(7):832–837. doi:10.1080/13548506.2015.1028946
- [54] Wong LP, Sam IC. Knowledge and attitudes in regard to pandemic influenza A (H1N1) in a multiethnic community of Malaysia. *Int J Behav Med.* 2011;18(2):112–121. doi:10.1007/s12529-010-9114-9
- [55] Hedman E, Lekander M, Karshikoff B, et al. Health anxiety in a disease-avoidance framework: investigation of anxiety, disgust and disease perception in response to sickness cues. *J Abnorm Psychol.* 2016;125(7):868–878. doi:10.1037/abn0000195
- [56] Wheaton MG, Berman NC, Franklin JC, et al. Health anxiety: latent structure and associations with anxiety-related psychological processes in a student sample. *J Psychopathol Behav Assess.* 2010;32(4):565–574. doi:10.1007/s10862-010-9179-4
- [57] Kennedy WP. The placebo reaction. *Med World.* 1961;95:203–205.
- [58] Taylor S, Asmundson GJ. Treatment of health anxiety. *Wiley Handb Obsess Compulsive Disord.* 2017;2:977–989. doi:10.1002/9781118890233.ch55
- [59] Firestone WA, Pennell JR. Teacher commitment, working conditions, and differential incentive policies. *Rev Educ Res.* 1993;63:489–525. doi:10.3102/00346543063004489
- [60] Lee K, Carswell JJ, Allen NJ. A meta-analytic review of occupational commitment: relations with person-and work-related variables. *J Appl Psychol.* 2000;85(5):799–811. doi:10.1037/0021-9010.85.5.799
- [61] Blau GJ. Further exploring the meaning and measurement of career commitment. *J Vocat Behav.* 1988;32(3):284–297. doi:10.1016/0001-8791(88)90020-6
- [62] Greenhaus JH. An investigation of the role of career salience in vocational behavior. *J Vocat Behav.* 1971;1:209–216. doi:10.1016/0001-8791(71)90022-4
- [63] Morrow PC. Concept redundancy in organizational research: the case of work commitment. *Acad Manage Rev.* 1983;8(3):486–500. doi:10.2307/257837
- [64] Aranya N, Pollock J, Amernic J. An examination of professional commitment in public accounting. *Account Organ Soc.* 1981;6(4):271–280. doi:10.1016/0361-3682(81)90007-6
- [65] Meyer JP, Allen NJ. A three-component conceptualization of organizational commitment. *Hum Resour Manag Rev.* 1991;1:61–89. doi:10.1016/1053-4822(91)90011-Z
- [66] Hackett RD, Lapierre LM, Hausdorf PA. Understanding the links between work commitment constructs. *J Vocat Behav.* 2001;58(3):392–413. doi:10.1006/jvbe.2000.1776
- [67] Meyer JP, Becker TE, Vandenberghe C. Employee commitment and motivation: a conceptual analysis and integrative model. *J Appl Psychol.* 2004;89(6):991–1007. doi:10.1037/0021-9010.89.6.991
- [68] Tak B, Aydem-Çiftçioğlu B. Üç boyutlu mesleki bağlılık ölçeğinin Türkçe'de güvenilirlik ve geçerliliğinin incelenmesine yönelik bir alan araştırması. *İşletme Fakültesi Dergisi.* 2009;10(1):35–54.
- [69] Allen NJ, Meyer JP. The measurement and antecedents of affective, continuance and normative commitment to the organization. *J Occup Psychol.* 1990;63(1):1–18. doi:10.1111/j.2044-8325.1990.tb00506.x
- [70] Blau G. The measurement and prediction of career commitment. *J Occup Psychol.* 1985;58:277–288. doi:10.1111/j.2044-8325.1985.tb00201.x
- [71] Blau G. Testing the discriminant validity of occupational entrenchment. *J Occup Organ Psychol.* 2001;74:85–93. doi:10.1348/096317901167244
- [72] Carson KD, Carson PP, Bedeian AG. Development and construct validation of a career entrenchment measure. *J Occup Organ Psychol.* 1995;68(4):301–320. doi:10.1111/j.2044-8325.1995.tb00589.x
- [73] Dave RH, Rajput JS. *Competency based and commitment oriented teacher education for quality education.* New Delhi: NCTE, Sri Aurobindo Marg; 1998.
- [74] Meyer JP, Allen NJ, Smith C A. Commitment to organizations and occupations: extension and test of a three-component conceptualization. *J Appl Psychol.* 1993;78(4):538–551. doi:10.1037/0021-9010.78.4.538
- [75] Kerr S, Von Glinow MA, Schriesheim J. Issues in the study of 'professionals' in organizations: the case of scientists and engineers. *Organ Behav Hum Perform.* 1977;18(2):329–345. doi:10.1016/0030-5073(77)90034-4
- [76] Carson KD, Bedeian AG. Career commitment: construction of a measure and examination of its psychometric properties. *J Vocat Behav.* 1994;44(3):237–262. doi:10.1006/jvbe.1994.1017
- [77] Aranya N, Ferris KR. A reexamination of accountants organizational professional conflict. *Account Rev.* 1984;59:1–15.
- [78] Bedeian AG. Issues in the dimensional structure of career entrenchment. *J Occup Organ Psychol.* 2002;75(2):247–250. doi:10.1348/09631790260098253
- [79] Blau G. On assessing the construct validity of two multidimensional constructs occupational commitment and occupational entrenchment. *Hum Resour Manag Rev.* 2001;11:279–298. doi:10.1016/S1053-4822(00)00052-8
- [80] Blau G. Testing for a four-dimensional structure of occupational commitment. *J Occup Organ Psychol.* 2003;76:469–488. doi:10.1348/096317903322591596
- [81] Meyer JP, Allen NJ. Testing the 'side-bet theory' of organizational commitment: some methodological considerations. *J Appl Psychol.* 1984;69(3):372–378. doi:10.1037/0021-9010.69.3.372

- [82] Meyer JP, Allen NJ. A longitudinal analysis of the early development and consequences of organizational commitment. *Can J Behav Sci/Revue canadienne des sciences du comportement*. 1987;19(2):199–215. doi:10.1037/h0080013
- [83] Palombi BJ. Psychometric properties of wellness instruments. *J Couns Dev*. 1992;71(2):221–225. doi:10.1002/j.1556-6676.1992.tb02204.x
- [84] Myers JE, Sweeney TJ, Witmer JM. The wheel of wellness counseling for wellness: a holistic model for treatment planning. *J Couns Dev*. 2000;78(3):251–266. doi:10.1002/j.1556-6676.2000.tb01906.x
- [85] Avey H, Fuller E, Branscomb J, et al. Using a health in all policies approach to address social determinants of sexually transmitted disease inequities in the context of community change and redevelopment. *Public Health Rep*. 2013;128(6):77–86. doi:10.1177/003335491312865312
- [86] Avey JB, Luthans F, Smith RM, et al. Impact of positive psychological capital on employee well-being over time. *J Occup Health Psychol*. 2010;15(1):17–28. doi:10.1037/a0016998
- [87] Brooks RB, Goldstein S. Power of resilience. New York (NY): McGraw-Hill; 2003.
- [88] Doğan T, Yıldırım İ. Üniversite öğrencilerinin iyilik halinin 'arkadaşlık' ve 'sevgi' boyutlarının incelenmesi. *Eur J Educ Res*. 2006;24:77–86.
- [89] Ryff CD, Keyes CLM. The structure of psychological well-being revisited. *J Pers Soc Psychol*. 1995;69(4):719–727. doi:10.1037/0022-3514.69.4.719
- [90] Ryan RM, Deci EL. On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annu Rev Psychol*. 2001;52(1):141–166. doi:10.1146/annurev.psych.52.1.141
- [91] Kim-Prieto C, Diener E, Tamir M, et al. Integrating the diverse definitions of happiness: a time-sequential framework of subjective well-being. *J Happiness Stud*. 2005;6(3):261–300. doi:10.1007/s10902-005-7226-8
- [92] Diener E, Lucas RE, Oishi S. Subjective well-being: the science of happiness and life satisfaction. *Handb Posit Psychol*. 2002;2:63–73.
- [93] Oruç E. İş şekillendirmenin psikolojik iyi oluşa etkisinde işin anlarının aracılık etkisi. *Sakarya Üniversitesi İşletme Enstitüsü Dergisi*. 2019;1(1):24–28.
- [94] Roscoe LJ. Wellness: a review of theory and measurement for counselors. *J Couns Dev*. 2009;87(2):216–226. doi:10.1002/j.1556-6678.2009.tb00570.x
- [95] Miller G, Foster LT. Critical synthesis of wellness literature: faculty of human and social development. Victoria (BC): University of Victoria; 2010. p. 1–32.
- [96] Korkut F. Ölçme ve iyilik hali. *Eur J Educ Res*. 2004;15:79–87.
- [97] Myers JE, Sweeney TJ. The indivisible self: an evidence-based model of wellness. *J Individ Psychol*. 2004;60:234–244.
- [98] Renger RF, Midyett SJ, Soto Mas FG, et al. Optimal living profile: an inventory to assess health and wellness. *Am J Health Behav*. 2000;24(6):403–412. doi:10.5993/AJHB.24.6.1
- [99] Korkut-Owen F, Owen DW. İyilik hali yıldızı modeli, uygulanması ve değerlendirilmesi. *Uluslararası Avrasya Sosyal Bilimler Dergisi*. 2012;3(9):24–33.
- [100] McMahon S, Fleury J. Wellness in older adults: a concept analysis. *Nurs Forum*. 2012;47(1):39–51. doi:10.1111/j.1744-6198.2011.00254.x
- [101] McKee-Ryan F, Song Z, Wanberg CR, et al. Psychological and physical well-being during unemployment: a meta-analytic study. *J Appl Psychol*. 2005;90(1):53–76. doi:10.1037/0021-010.90.1.53
- [102] Owen FK, Çelik ND. Yaşam boyu sağlıklı yaşam ve iyilik hali. *Psikiyatride Güncel Yaklaşımlar*. 2018;10(4):440–453.
- [103] Steger MF, Kashdan TB. Depression and everyday social activity, belonging, and well-being. *J Couns Psychol*. 2009;56(2):289–300. doi:10.1037/a0015416
- [104] de Beurs E, Beekman AT, van Balkom AJ, et al. Consequences of anxiety in older persons: its effect on disability, well-being and use of health services. *Psychol Med*. 1999;29(3):583–593. doi:10.1017/s0033291799008351
- [105] Mowday RT, Porter LW, Steers RM. Employee-organization linkages: the psychology of commitment, absenteeism and turnover. New York (NY): Academic Press; 1982.
- [106] Meyer JP, Allen NJ. Commitment in the workplace: theory, research, and application. Thousand Oaks, CA: Sage; 1997.
- [107] Meyer JP, Stanley LJ, Parfyonova NM. Employee commitment in context: the nature and implication of commitment profiles. *J Vocat Behav*. 2012;80(1):1–16. doi:10.1016/j.jvb.2011.07.002
- [108] Siu OL, Spector PE, Cooper CL, et al. Managerial stress in greater China: the direct and moderator effects of coping strategies and work locus of control. *Appl Psychol*. 2002;51(4):608–632. doi:10.1111/1464-0597.00111
- [109] Bridger RS, Kilminster S, Slaven G. Occupational stress and strain in the naval service: 1999 and 2004. *Occup Med*. 2007;57(2):92–97. doi:10.1093/occmed/kql124
- [110] Grawitch MJ, Tares S, Kohler JM. Healthy workplace practices and employee outcomes. *Int J Stress Manage*. 2007;14(3):275–293. doi:10.1037/1072-5245.14.3.275
- [111] Thoresen CJ, Kaplan SA, Barsky AP, et al. The affective underpinnings of job perceptions and attitudes: a meta-analytic review and integration. *Psychol Bull*. 2003;129(6):914–945. doi:10.1037/0033-2909.129.6.914
- [112] Epitropaki O, Martin R. From ideal to real: a longitudinal study of the role of implicit leadership theories on leader-member exchanges and employee outcomes. *J Appl Psychol*. 2005;90(4):659–676. doi:10.1037/0021-9010.90.4.659
- [113] Frone MR, Kern JH, Grandey AA. Verbal abuse from outsiders versus insiders: comparing frequency, impact on emotional exhaustion, and the role of emotional labor. *J Occup Health Psychol*. 2007;12(1):63–79. doi:10.1037/1076-8998.12.1.63
- [114] Addae HM, Wang X. Stress at work: linear and curvilinear effects of psychological-, job-, and organization-related factors: an exploratory study of trinidad and tobago. *Int J Stress Manage*. 2006;13(4):476–493. doi:10.1037/1072-5245.13.4.476
- [115] Saks AM, Ashforth BE. A longitudinal investigation of the relationships between job information sources, applicant perceptions of fit, and work outcomes. *Pers Psychol*. 1997;50(2):395–426. doi:10.1111/j.1744-6570.1997.tb00913.x
- [116] Somers MJ. The combined influence of affective, continuance and normative commitment on employee withdrawal. *J Vocat Behav*. 2009;74(1):75–81. doi:10.1016/j.jvb.2008.10.006
- [117] Tan DS, Akhtar S. Organizational commitment and experienced burnout: an exploratory study from a Chinese cultural perspective. *Int J Organ Anal*. 1998;6(4):310–333. doi:10.1108/eb028889
- [118] Falguera CC, De los Santos JAA, Galabay JR, et al. Relationship between nurse practice environment and work outcomes: a survey study in the Philippines. *Int J Nurs Pract*. 2021;27(1):e12873. doi:10.1111/ijn.12873
- [119] Faremi FA, Olatubi MI, Adeniyi KG, et al. Assessment of occupational related stress among nurses in two selected hospitals in a city southwestern Nigeria. *Int J Afr Nurs Sci*. 2019;10:68–73. doi:10.1016/j.ijans.2019.01.008
- [120] Vivian E, Oduor H, Arceneaux SR, et al. A cross-sectional study of perceived stress, mindfulness, emotional self-regulation, and self-care habits in registered nurses at a tertiary care medical center. *SAGE Open Nurs*. 2019;5. doi:10.1177/2377960819827472
- [121] De los Santos JAA, Labrague LJ. Impact of COVID-19 on the psychological well-being and turnover intentions of frontline nurses in the community: A cross-sectional study in the Philippines. *Traumatology*; 27(1):52–59. Doi:10.1037/trm0000294.
- [122] Uludağ G, Taşdöven H, Dönmez M. Polis adaylarının mesleki kaygı düzeylerinin çeşitli değişkenler açısından incelenmesi. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 2014;18(2):75–94.
- [123] Osberg L, Sharpe A. How should we measure the 'economic' aspects of well-being? *Rev Inc Wealth*. 2005;51(2):311–336. doi:10.1111/j.1475-4991.2005.00156.x
- [124] Frey BS, Stutzer A. What can economists learn from happiness research? *J Econ Lit*. 2002;40(2):402–435. doi:10.1257/jel.40.2.402
- [125] Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol*. 2000;55(1):68–78. doi:10.1037/0003-066X.55.1.68
- [126] Şimşek ÖF. Yapısal eşitlik modellemesine giriş (Introduction to structural equation modeling): Temel İlkeler ve LISREL Uygulamaları (Basic Principals and LISREL Applications). Ankara-Türkiye: Ekinoks; 2007.
- [127] American Psychiatric Association. Diagnostic and statistical manual for mental disorders. 4th ed. Washington (DC): American Psychiatric Association; 2000.
- [128] Barlow DH. Disorders of emotion. *Psychol Inq*. 1991;2(1):58–71. doi:10.1207/s15327965pli0201_15
- [129] Cosmides L, Tooby J. Evolutionary psychology and the emotions. *Handb Emot*. 2000;2(2):91–115. doi:10.31887/DCNS.2000.2.2/asschachter

- [130] Ekman P. Emotions revealed: recognizing faces and feelings to improve communication and emotional life. New York (NY): Times Books; 2003.
- [131] Lee SA. Coronavirus anxiety scale: a brief mental health screener for COVID-19 related anxiety. *Death Stud.* 2020;44(7):393–401. doi:10.1080/07481187.2020.1748481
- [132] Çelik M, Turunç Ö, Bilgin N. Çalışanların örgütsel adalet algılarının psikolojik sermaye üzerine etkisi: çalışanların iyilik halinin düzenleyici rolü. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi.* 2014;16(4):559–585. doi:10.16953/deusbed.25259
- [133] Goldberg DP. The detection of psychiatric illness by questionnaire: A technique for the identification and assessment of non-psychotic psychiatric illness. London: Oxford U. Press; 1972.
- [134] Goldberg DP, Hillier VF. A scaled version of the general health questionnaire. *Psychol Med.* 1979;9(1):139–145. doi:10.1017/S0033291700021644
- [135] Kline RB. Software review: software programs for structural equation modeling: Amos, EQS, and LISREL. *J Psychoeduc Assess.* 1998;16(4):343–364. doi:10.1177/073428299801600407
- [136] Lok JJ, Bosch RJ. Causal organic indirect and direct effects: closer to Baron and Kenny, with a product method for binary mediators. *Epidemiology* [Internet]; 2021 [cited 2022 Feb 18]. Available from: <https://arxiv.org/pdf/1903.04697.pdf>
- [137] Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J Pers Soc Psychol.* 1986;51(6):1173–1182. doi:10.1037/0022-3514.51.6.1173