# The Mediating Role of Self-Alienation between Fear of Covid-19 and Smartphone Addiction

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**Abstract**: The Covid-19 pandemic, which affected all areas of life, also continues to affect addiction situations. The present study was conducted to investigate the relationships among self-alienation, fear of Covid-19 and smartphone addiction. Within the scope of the research, 4 hypotheses were tested within the quantitative design. Using the "Structural Equation Model" (SEM), the mediating role of "Self-alienation" between "Fear of Covid-19" and "Smartphone Addiction" was examined. This study included 619 university students who were enrolled in the 2021-2022 academic year. These students were 429 (69.3%) female and 190 (30.7%) male. Participants are studying via distance education. Data were obtained with "Personal Information Form", "Fear of Covid-19 Scale", "Alienation Scale" and "Smartphone Addiction Scale". As a result of the research, the mediating role of self-alienation was found. In addition, the participants got high level scores of "Fear of Covid-19", "Self-alienation" and "Smartphone Addiction", due to the epidemic.

## Introduction

As the COVID-19 pandemic, which started in China in late 2019 and spread to all around the world, restricted face to face education, most of the educational institutions were obliged to continue their education through online learning (Kaya, 2021) as a result, many negative emotional situations such as fear, stress, anxiety and negative psychological effects have occurred in individuals (Ahorsu et al., 2020; Reznik et al., 2020). Researchers found that individuals developed fears about the Covid-19 process during the epidemic process (Ekiz, Ilıman & Dönmez, 2020; Rajkumar, 2020; Wang et al., 2020). Another situation increased during the epidemic process was the alienation of individuals from themselves. It was observed that there was an increase in the alienation of individuals towards themselves, their work and social environments during this process (Alparslan, Polatcı & Yastıoğlu, 2021; Ulusal, 2021). Along with the changes that the epidemic process brought to human life, the use of the phone increased for many reasons such as getting information, maintaining the relationships they could not establish in the virtual world, and loneliness (Çiçek, Şahin, & Erkal, 2021; Fidancı et al., 2021). Increasing use of phone during the epidemic also caused an increase in smartphone addiction, which negatively affected the lives of individuals (Kayis et al., 2021; Van Dursen, 2020; Duan et al., 2021). In the light of these studies, it can be said that the level of alienation of individuals may increase with the Covid-19 Pandemic process, and the use of smartphones has increased due to situations such as loneliness, social isolation and the need for information. Various studies can be seen both in Turkey and abroad regarding the variables related to fear of Covid-19, self-alienation and smartphone addiction during pandemic process.

Considering the studies carried out in Turkey, Bal & Balcı (2020) have found that university students who feel comfortable, have the personality trait to cope with stress easily, and the ones who can positively reflect their self-

control personality traits have lower smartphone addiction levels. In the context of this finding, it can be said that people with low self-alienation tendency have lower addiction levels. As a matter of fact, in the concept of self-alienation, it is stated that the person can feel powerless in achieving and realizing something, and that people with high self-control have lower levels of self-alienation (Devecioğlu & Tekin, 2013). In another study conducted by Tohumcu et al. (2019), a moderate, positive and effective link between Smartphone addiction and Loneliness variables was revealed. Çetin and Anuk (2020) have found that there is a significant difference between university students' fear of the people they love being affected by the virus during the epidemic and the situation of individuals experiencing loneliness, and stated that loneliness can make people feel isolated due to social alienation. In another study, it has been stated that fear of Covid-19 has effects on loneliness and smartphone addiction in young adults and middle adults (Kayis et al. 2021).

Looking at the studies outside of Turkey, Kozhina and Vinokurov (2020) have stated that the level of work-related alienation of individuals increased during the epidemic process. Zhu et al. (2021), on the other hand, stated that negative emotions such as fear of Covid-19, helplessness, and self-alienation during the epidemic were the predictors of "Post-traumatic stress disorder" (PTSD) that emerged during the epidemic process. Király et al. (2020) have state that individuals can turn to the use of internet, social media and smartphones in order to reduce their anxiety during the Covid-19 epidemic. There are also studies showing that young people's smartphone addiction has increased during the process of epidemic (Hosen et al., 2021; Serra et al., 2021).

As we explained the relations between the variables below, we aimed to investigate the mediating role of self-alienation between "Fear of Covid-19" and "Smartphone Addiction" of young adults, in the present study. It is thought that the results of this study will lead the other studies to conduct on the feelings of loneliness and self-alienation that young adults may feel during the epidemic. Within the scope of the present study and further studies, some bad affected situations like the variables of this study will be detailed.

**Fear of Covid-19**

The fear of contracting the disease, death, losing a loved one, or infection of loved ones due to Covid-19 can affect individuals in depth (Montemurro, 2020; Ornell et al., 2020). Increases in the number of infected individuals and deaths due to the virus, the psychological reactions of people towards the Covid-19 epidemic process can be in the form of fear, anxiety or fobia (Pakpour & Griffiths, 2020). The Covid-19 epidemic has turned into an event in which the virus constantly mutates, countries and individuals constantly take different measures, and is constantly on the agenda of the world. Thus, the epidemic process, which is constantly in people's lives, causes people to lose themselves or the people with whom they have close relationships, to not be able to reach medical help due to the intensity in hospitals, to be deprived of basic food needs, to be infected with the virus, to feelings of insecurity due to losses (Biçer et al., 2020; Han et al., 2021; Mortazavi et al., 2020) or infecting another person and being unemployed in this process. Due to the aforementioned reasons, the physical and psychological health of individuals

is under threat and this causes many psychological negative situations such as fear, anxiety, anxiety, stress and depression (Harper et al., 2020; Pakpour & Griffiths, 2020; Özok & Aka, 2021).

## Smartphone Addiction

Phones, which are among the most used tools from mobile devices, are used intensively to meet the needs such as getting information about the virus in an easy way and getting news about the epidemic process. It can be said that smart phones can also be used easily in social media networks, especially in this process, it changes life in a different way and affects daily life (Sanal & Özer, 2017). The Covid-19 epidemic and measures such as the unprecedented controlled isolation, quarantine conditions, social distance and the obligation to stay at home have led to significant changes in the lives of individuals. Individuals have started to use digital platforms much more through smartphones to obtain information and meet their social relationship needs during the epidemic (Yang et al., 2021).

One of the consequences of using smartphones intensively, which negatively affects individuals, is smartphone addiction (Huang et al., 2020). Smartphone addiction is a type of addiction that includes withdrawal symptoms similar to substance addiction, causes deterioration in people's social lives, is associated with problems such as the demand for uncontrolled access to the phone and developing tolerance, and causes problems in a number of areas, like social, economic, physical and similar aspects of individuals' lives. In the literature, this type of addiction can also be expressed as "problematic mobile phone use", "overuse of mobile phone", "pathological smart phone use", "Smartphone addiction". This type of addiction is expressed as a situation that causes negativities in the lives of individuals due to the use of phones more than normal and uncontrolled. (Fidan, 2016). Smartphones have become an indispensable part of daily life due to their functions such as high functionality of processors, carrying mobile features and being portable in terms of usability, and this increases the risk of smartphone addiction (Kwon, 2013).

## Self-Alienation

The concept of self-alienation is one of the long-standing, original and up-to-date issues that are constantly researched in the scientific world. Fromm (1955) has expressed this concept as the individual's alienation from her own nature and confrontation with unusual situations and events (Taviss, 1969). Horowitz (1966) has explained this concept as getting away from objects, people, nature and other people's ideas. The individual, who is alienated from herself/himself may have cut off her relationship from her/his nature and her/his own world of meaning. Individuals may experience feelings such as emptiness towards their existential meaning, alienation from nature and themselves, and feeling powerless. (Kırman and Atak, 2020; Seeman, 1983).

The concept of self-alienation is a phenomenon that develops over time and occurs as a result of a long time, unlike the feelings that occur in a short time. As a result of self-alienation, the individual may experience apathy towards the things he/she enjoys. As a result, the individual can distance himself from his own essence, nature and emotions. (Turan, 2019).

**Fear of Covid-19, Self-Alienation and Smartphone Addiction**

The Covid-19 epidemic has turned into a situation that has spread all over the world, causing the death of several million people and infecting millions of people. This situation has adversely affected many areas including health, education, economy and global political policies. The fear about the virus is mostly as a result of the virus's rapid spread and the threat to human life, due to the situations where individuals lose their loved ones or not to infect the people they love and themselves, and the uncertainty of the process. (Bhuiyan et al., 2020; Brooks et al., 2020). During the epidemic, curfews, restriction of country and city travel, and many restrictions on social life, in addition to the strict isolation that most people have probably not experienced before, have deeply affected human life (Gao et al., 2020; Qiu et al, 2020; Xiao et al., 2020). The restrictions within social life have prevented people from moving away from each other and this situation has prevented people from socializing. It can be said that the self-alienation that occurs in individuals emerges as an important problem, as even education and training activities, which are one of the most important places where socialization takes place, are continued remotely and social life has almost come to a standstill (Zolfaghari & Ashayeri, 2021). The rapid transmission of the virus, its deadly nature, and the restrictions experienced in social life, together with the anxiety, stress, fear and uneasiness of individuals about the disease, can cause individuals to become alienated from themselves, others and their jobs (Alparslan et al., 2021).

During the epidemic; It can be said that factors such as interruption of face-to-face education, inability to establish social relations, isolation in social life, restrictions, the need to learn more on virus and cyber socialization cause more spending time on smartphones (Li et al., 2020). On the other hand, Elhai et al. (2020) have found that individuals spend more time on their phones during the epidemic process. It has been stated that individuals experience nomophobia with the effect of social isolation and being alone during the Covid-19 epidemic process, and therefore, addiction situations may occur in smartphone use (Caponnetto et al., 2021; Fidancı et al., 2021). According to researchers, the concept of loneliness experienced by individuals can also be defined with the concepts of self-alienation and social isolation (Alexandrova, 2019). When we look at other studies conducted on this subject, it is seen that a strong relationship between self-alienation and smartphone use was found (Atarodi et al., 2020; Liu and Zhu, 2019) a link between social isolation and phone addiction status was revealed (Al-Kandari & Al-Sejari, 2021).

**The Present Study**

Individuals who experience fear of Covid-19 are especially afraid of infecting themselves and transmitting the virus to their loved ones, and the risk of death due to transmission (Fitzpatrick et al., 2020; Mertens et al., 2020). The rates of transmission of the virus and the lack of effective interventions during the epidemic process have caused countries to take measures in many environments from social life to education life. These measures and changes have led to very serious changes in human life. These changes, which are effective on individuals' daily lives, have also affected many areas such as human relations, educational status, and psychological health of individuals (Bhamani et al., 2020; Dragun et al., 2021).

In this process, it is predicted that individuals who are exposed to such rapid changes become alienated from themselves. Due to this situation, it is thought that individuals who try to lead an isolated life and whose social life is restricted will become more self-alienated. It is supposed that individuals who have fear of Covid-19 and become self-alienated establish relationships in the virtual world that they cannot establish in the natural environment, they mostly look at their smartphones to learn about the virus, and these situations are thought to lead to smartphone addiction in this process. For this purpose, the following hypotheses have been examined in present study.

Hypotheses are given below:
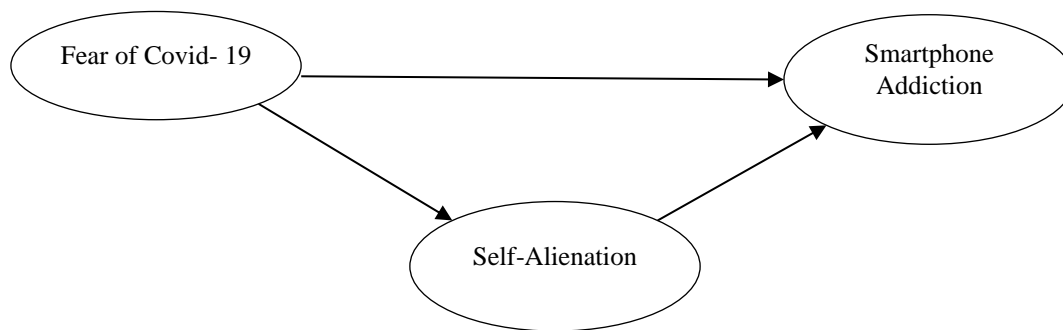
H1: Fear of Covid-19 predicts self-alienation.

H2: Fear of Covid-19 predicts smartphone addiction.

H3: Self-alienation predicts smartphone addiction.

H4: Self-alienation has a mediating role between fear of Covid-19 and smartphone addiction.

**Figure 1**

*Hypothesized model involving selected predictors*



**Participants**

Random sampling method was used in the study. Participants were selected by using the stratified sampling technique, one of the random sampling methods. The students studying at Van Yüzüncü Yıl University for two years, four years, five years and six years formed the strata. The purpose of choosing this technique was to include every college and faculty with different education periods in the study. Two of the colleges, five of the four-year faculties, and all of the five and six-year faculties were determined as a stratum and in this way the participants were reached. The students who participated in the study voluntarily formed the study group. Students studying in the 2021-2022 academic year participated in the study. A total of 619 volunteer students took the part in the study. Of the participants, 49 (7.9%) were in two-year, 435 (70.3%) were in four-year, 112 (18.1) were in five-year, and 23 (3.7%) were in six-year departments. In this respect, it can be said that a sample representing the whole university has been obtained. These students of 429 (69.3%) were female and 190 (30.7%) were male. 222 (35.9%) students from the faculty of education, 134 (21.6%) students from the faculty of science and literature, 12 (1.9%) students

from the faculty of pharmacy, 78 (12.6%) students from the faculty of dentistry, and 23 (3,7%) students from the faculty of medicine, 49 (7.9%) students from vocational school of higher education, 18 (2.9%) students from theology faculty, 61 (9.9%) students from health faculties, 22 (3.6%) students from engineering faculties were included in the process of this research. The average age of these participants was 22.48. Also, students from all grades 1 to 6 took the part in the study so that each class could be represented in the study. First grade consisted of 143 (23.1%), second grade consisted of 120 (19.4%), third grade consisted of (30.2%), fourth grade consisted of 120 (19.4%), fifth grade consisted of 28 (4.5%) and sixth grade consisted of 21 (3.4%) students. 604 students (97.6%) stated that they used the phone as the most used tool for accessing the Internet, while 15 students (2.4%) stated that they used tablets and computers. The students' purpose of using the phone was asked, the purposes were like that; 293 (47.3%) social media, 200 (32.3%) communication, 76 (12.3%) news, 31 (5%) lectures and 19 (3,1%) other purposes. 176 (28.4%) of the students stated that they caught Covid-19, 443 (71.6%) have stated that they did not get the disease. 520 students (84%) stated that one of their relatives caught Covid-19, 99 students (16%) stated that one of their relatives was not infected. In addition, 187 students (30.2%) stated that they lost one of their relatives due to Covid-19, while 432 students (69.8%) stated that they did not experience any loss.

**Measuring Tools**

***Fear of Covid-19 Scale***

This scale which was adapted to Turkish in 2020 by Satıcı et al., had been developed by Ahorsu et al. in same year. The scale has a one-dimensional and 7-item structure, and one can get scores between 7 to 35. In the validity and reliability study, the item correlation values of the scale are found to be between 0.47-0.56. Factor loading values are between 0.66-0.74. The internal consistency coefficient of the scale, which has a five-point Likert structure, is found to be 0.82. At the results of the CFA "Confirmatory Factor Analysis", the goodness of fit values of the scale are "($\chi2$ = 42.286, df = 11 ($\chi2$ /df = 3.84), AGFI =0.96, GFI =0.99, CFI = 0.99, RMSEA = 0.053 RMR =0.028)". As a result of CFA, the values of the item correlation values change between 0.57 and 0.72 and the internal consistency coefficient is 0.87. As a result of CFA, the values of the item correlation values are between 0.57 and 0.72 and the internal consistency coefficient is 0.87. In addition, it is observed that the two-factor goodness of fit values of the scale is higher and thus the scale has given better results. In this context, the scale has been included in the analyzes with two factors. Factor loading values were between 0.72-0.84.

***Alienation Scale (AS)***

The scale, adapted into Turkish by Güğercin and Aksay in 2017, was developed by Dean in 1961. The Likert-type scale consists of 20 items. It is formed in the range of "I totally disagree" and "I totally agree" statements. It has been discovered that as the individual's score on the scale rises, so does their level of estrangement. Five of the items in the scale contain reverse coded statements. In the validity and reliability study on the scale, the internal consistency coefficient is found to be 0.88 (0.90 in the Turkish version). In the analyzes made on the scale items, it is stated that all items have a correlation value of over 0.40, except for the 18th item. Since the scale factor loads have values above 0.70, it is concluded that there is convergent validity. The scale has three sub-dimensions. In the

results obtained in this study, it has been seen that the internal consistency coefficient is 0.87, in which the same features are valid, and the factor loads are above 0.70 as a conclusion of the Exploratory and Confirmatory Factor Analysis. After the analysis, it has been found that the scale has given good results in three sub-dimensions and has been added to the model in this way.

*Smartphone Addiction Scale - Short Form (SPAS-SF)*

SPAS-SF was developed in 2013 by Kwon et al. and was adapted into Turkish in 2015 by Noyan et al. This short form of the scale includes 10 items and was prepared in a 6-point Likert type. The score obtained from the scale varies among 10-60 and it is stated that the individual's scoring high means the risk of addiction. In the Turkish version, KMO=0.86. It has been reported that the 10-item scale explains 46.30% of the total variance. The factor loads of the scale items are between 0.49 and 0.82. It is stated that the "item-total correlation coefficients" ranged between 0.40-0.75. Cronbach's alpha coefficient is found to be 0.88. As a result of its validity and reliability studies, it has been revealed that it is a scale that can be applied to evaluate phone addiction. The same results have been obtained in this study.

### Data Analysis

Normal distribution assumptions were confirmed before the analysis and the data distribution was found to be normal. Pearson correlation coefficient was applied to investigate the relationships among Self-Alienation, Smartphone Addiction and Fear of Covid-19. To assess the mediating effect of self-alienation in the connection between the other two variables, a structural equation model was built using full information maximum likelihood estimation. This is demonstrated in the hypothetical model (Figure-1). The goodness of fit indices that used were $\chi^2/df$, "Comparative Fit Index (CFI)", "Tucker-Lewis Index (TLI)", "Goodness of Fit Index (GFI)", and "Root Mean Square Error of Approximation (RMSEA)". In order to determine whether the model fitted the data, $\chi^2 / df < 5$, CFI > .90, TLI > .90, GFI > .90, and RMSEA < .10 were used (Kline, 2005; Marcoulides & Schumacher, 2001; Tabachnick & Fidell, 2007). To see if self-alienation mediated the association between Smartphone Addiction and Fear of Covid-19, we used bootstrapping testing. In the Bootstrap test, 95% confidence interval (CI) and, as used common, 10,000 resampling were used. IBM SPSS v25.0 and AMOS-Graph.v24 were employed for data analysis.

### Procedures and Ethics

Due to the Covid-19 epidemic, educational institutions continue their processes in the form of online and hybrid education. In addition, there is a situation where face-to-face meetings with students pose a risk of contamination. In this context, study data were collected by reaching students online. Measurement tools prepared through Google Forms presented the data to the study. During the data collection process, no specific questions were asked regarding the protection of Personal Data. The study, which was approved by "Van Yuzuncu Yil University Social and Human Sciences Ethics Committee" was recorded (E-85157263-604.01.02-144602).

# Results

**Findings on correlations between variables**

In this section, firstly correlations between variables were given, then the other findings on hypotheses were given. Table 1 shows the correlation values for the fear of Covid-19, self-alienation, and smartphone addiction variables based on the collected data.

**Table 1**

*Correlation values among three variables*

|  | M  - (SD) | Cronbach's α | (1) | (2) | (3) |
|---|---|---|---|---|---|
| (1)- Fear of Covid19 | 36.39 (8.56) | .85 | — |  |  |
| (2)- Self-Alienation | 72.34 (10.01) | .81 | .53** | — |  |
| (3)- Smartphone addiction | 27.45 (9.04) | .92 | .26** | .32** | — |

*Note:* **p < .01; M, mean; SD, standard deviation.

As seen in Table 1, a positive correlation between fear of Corona Virus Disease and self-alienation (r =.53, p < .01) can be seen. And also, a correlation between this fear and smartphone addiction (r =.26, p <.01) can be seen in a positive way. In addition, there is a correlation (r = .32, p <.01) between the variables of self-alienation and phone addiction. From this point of view, it was determined that the correlations between the fear of virus, self-alienation and smartphone addiction were positive and significant. Furthermore, the correlation between fear of Covid-19 and self-alienation was found to be the highest. To summarize, it is obvious that as the scores obtained from the three variables increase, the scores of the other variables also increase.
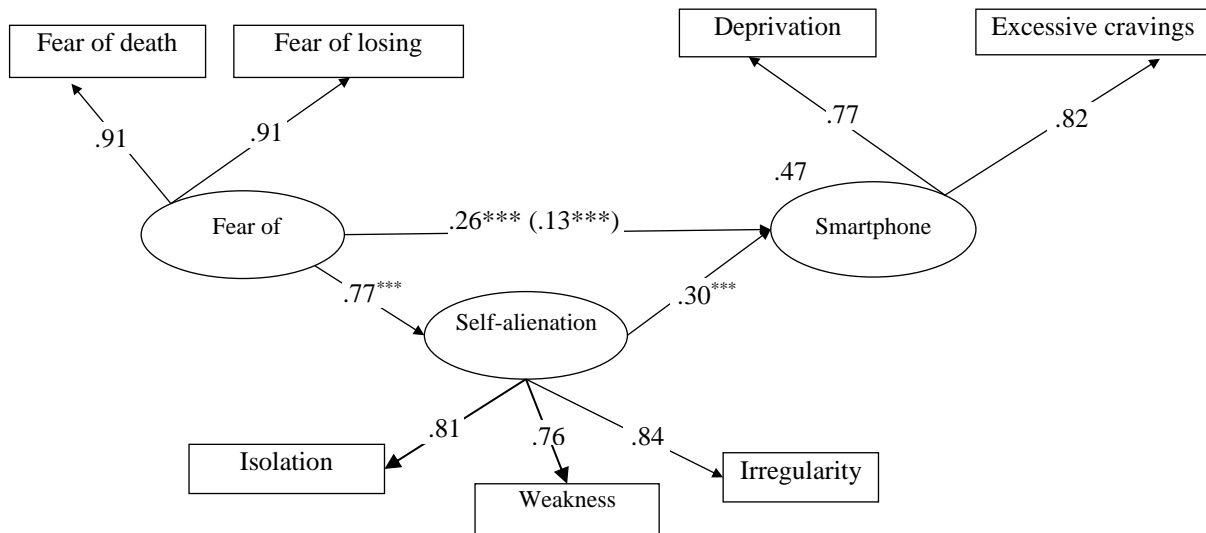
**Findings on the study model**

The mediating role of the self-alienation variable in the relationship between addiction of smartphone and fear of Corona Virus Disease was tested on the model. The findings obtained within the scope of this analysis are shown in Figure 2.

First of all, the path coefficient between the "smartphone addiction" and "fear of Covid-19" was tested with a model in which the self-alienation variable was not a mediator. This model's goodness of fit values were examined and it was seen that it was in an acceptable range [$\chi2$ (40, N = 619) = 35.585; p < .001; $\chi2$/ df = 2.70; TLI = .951; CFI = .963; GFI = .954; RMSEA = .042]. The path coefficient between the fear and addiction variables was found statistically significant ($\beta$ =.13, p < .001). Then, the goodness of fit values of the model in which self-alienation has a mediating role in the relationship between the other two variables were examined. It was determined that the goodness of fit values of this model are also in an acceptable range [$\chi2$ (68, N = 619) = 947.42; p <.001; $\chi2$/ df = 2.39; TLI = .923; CFI = .929; GFI = .912; RMSEA = .047]. Path coefficients between fear of Covid-19 and self-

alienation variables (β = .77, p <.001), and path coefficients between self-alienation and smart phone addiction (β = .30, p <.001) are statistically significant. Also, the path coefficients between fear of Covid-19 and phone addiction (β = .26, p <.001) are statistically significant.

**Figure 2**

*Model of the Relationship between Variables*



*Note*: Those in the ellipse are the latent variables; those in the rectangle are sub-dimensions of the latent variables and serve as the observed variable. The coefficients between the latent variables and the coefficients between each latent variable and their associated observed variables are standardized coefficients. The coefficient expressed in parentheses is the coefficient between life goals and hopelessness before self-alienation was included in the model. ***p < .001

To see if self-alienation had a role in the correlation between fear of Covid-19 and smartphone addiction, we used a bootstrapping test. Confidence interval above 95 percent and 10,000 resampling routes were employed in the bootstrapping procedure. Table 2 summarizes these findings.

As seen in Table 2, the lower and upper values of the confidence interval do not include zero for all path coefficients. That is, the indirect effect of self-alienation on telephone addiction by mediating Covid-19 was found to be significant (β = .44, p <.001, GA [.54, .36]). The path coefficient between fear of Covid-19 and phone addiction reveals a higher path coefficient through self-alienation. Therefore, it has been seen that alienation has a partial mediating role in the relationship between fear of Covid-19 and smartphone addiction.

**Table 2**

*Bootstrapping analysis to examine the mediating role of Self-alienation*

| Pathways | β | S E | 95% CI | P |
|---|---|---|---|---|
| *"Direct effect"* | | | | |
| Covid19 → Smartphone | .13*** | .05 | .10 to .24 | .000 |
| Covid19 → Self-alienation | .57*** | .06 | .48 to .63 | .000 |
| Self-alienation → Smartphone | .16*** | .06 | .14 to .26 | .000 |
| *"Indirect effect"* | | | | |
| Covid19 → Self-alienation → Smartphone | .30*** | .04 | .24 to .36 | .000 |
| Total effect | | | | |
| Covid19 → Smartphone | .26*** | .05 | .23 to .32 | .000 |

*Note. CI*: Confidence interval.  Standardized beta coefficients (β) were reported. ***$p < .001$

## Discussions

In this study, the relationships among fear of Covid-19, smartphone addiction and self-alienation were examined using the Structural Equation Model (SEM). As a result, it can be said that "Fear of Covid-19" and "Self-alienation" have positive effects on "Smartphone Addiction". Furthermore, the findings about the all relationships among self-alienation, fear of Covid-19 and smartphone addiction have revealed that there was a mediating role of self-alienation. The hypotheses of the study and the findings of the study were discussed in detail below.

It has turned out that the H1 hypothesis is confirmed according to the findings of the study. According to the findings of the study, the anxiety, fear and uneasiness felt by individuals about the speed of infection of the virus brought by the epidemic period, the threat to people's lives and the changes in daily life brought by this situation has revealed that individuals become self-alienated and alienated towards their lives. Similar findings have emerged in studies on the subject. Zhu et al. (2021) have found that traumatic situations such as the epidemic process and anxiety and similar situations experienced during this period increase alienation. Ural and Canpolat (2021) has concluded that negative situations and moods experienced during the epidemic caused teachers to self- alienate. In a similar study by Alparslan, Polatcı, and Yastıoğlu (2021), it has been revealed that the fear, anxiety and worry experienced by academicians increased their self-alienation and alienation toward their profession. Rowe, Ngwenyama, and Richet (2021), in their study, have revealed that the negativities experienced during the epidemic are a predictor of alienation.

It has turned out that the H2 hypothesis is confirmed in line with revealed findings. There is a positive correlation between addiction and fear which are the main variables of this study. In this situation, it may be assumed that people who are afraid of Covid-19 during the outbreak use their smartphones more to alleviate their anxieties, which can be linked to smartphone addiction. Similarly, some studies have reached similar results in line with the findings of this study. Yam, Korkmaz, and Griffiths (2021) have found in their study that there is a positive relationship between the fear of Covid-19 and smartphone addiction, and it has been revealed that individuals who are afraid of Covid-19 use smartphones more. Chopdar, Paul and Prodanova (2022) have concluded that Covid-19 phobia and

exposure to Covid-19 news are important determinants of consumers' smartphone addiction use. Similarly, Ahorsu et al (2022) revealed that this fear is a strong predictor of problematic phone and social media use associated with smartphone addiction. Altundağ (2021), in a study on the fear of Covid-19, has explained that the use of smartphones increases very seriously throughout the epidemic period. Servido et al. (2021), Boursier et al. (2020) and Kayış et al. (2021) have reached similar findings in their studies.

The accuracy of the H3 hypothesis has emerged as a result of the analyzes made. Self-alienation predicts smartphone addiction and there is a positive relationship between them. Similar studies have also reached parallel results with the study. Atarodi, Rajabi, and Atarodi (2020) have revealed that a positive relationship between self-alienation and mobile phone addiction could be seen. Rather and Rather (2019) reached similar conclusions regarding alienation and the smartphone. Al-Kandari & Al-Sejari (2021) stated in their study that smartphone users experience more alienation as their social relations are damaged.

The H4 hypothesis has been also tested according to the findings of the study. The indirect effect of self-alienation between the variables ("fear of Covid-19" and "smartphone addiction") has been examined. As a result of the study, it has been determined that self-alienation has a partial mediation role in the relationship between, fear of Covid-19 and smartphone addiction. It can be said that individuals who are alienated from themselves experience different kinds of worries and anxieties such as the fear of Covid-19, and they are more interested in their smartphones for instant information about the virus in order to eliminate these concerns. In addition, it can be said that social, educational and business life, which is limited by the virus's rapid spread and human lethality, is carried out through smart phones. Some studies have also reached similar results to these findings (Hamilton, Nesi, & Choukas-Bradley, 2020; Nadeak, 2020; Çiçek, Şahin, & Erkal, 2021; Yıldırım & İpek, 2020; Norbury et al., 2021).

As a result, it can be said that the epidemic process, which is an extraordinary situation that the world has experienced, has caused many changes in human life. The Covid-19 virus, which many people have not heard of, and the fear of Covid-19 that this virus has created in human life, has also entered the literature as an emotional state that people have experienced during the epidemic process. It has been revealed that individuals experience self-alienation in this period, as it is an unusual process in the epidemic process and many changes are experienced in human life. It has also been revealed that people are afraid of covid-19 due to many reasons such as the threat of the Covid-19 virus to human life and its rapid contagiousness. In individuals who are self-alienated have fear of Covid-19, the use of smartphones has increased due to many reasons such as socializing and gaining information during the epidemic and it can be said that this situation spreads smartphone addiction. In addition, it can be suggested that further studies can be conducted between these variables with different participants as the epidemic affected almost everyone.

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