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PREDICTION OF SMARTPHONE ADDICTION IN UNIVERSITY STUDENTS IN THE CONTEXT OF ACADEMIC PROCRASTINATION AND SELF-CONTROL LEVELS

ÜNİVERSİTE ÖĞRENCİLERİNDE AKILLI TELEFON BAĞIMLILIĞININ AKADEMİK ERTELEME VE ÖZ-KONTROL DÜZEYLERİ BAĞLAMINDA YORDANMASI

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ABSTRACT

The aim of this study is to examine whether academic procrastination and self-control predict smartphone addiction among university students. In addition, it seeks to contribute to identifying numerical thresholds related to smartphone addiction in terms of daily usage time and frequency of checking the device. Additionally, the study aims to investigate the relationships among these three variables and whether gender creates significant differences in these variables. The study was conducted with 320 students (219 females, 101 males) continuing their university education in Turkey. The data collection tools used in the research include the Smartphone Addiction Scale-Short Form, Aitken Academic Procrastination Inventory, Brief Self-Control Scale, and a personal information form. The data were analyzed using Independent Samples T-Test, One-Way ANOVA, Pearson Correlation, and Regression techniques. According to the findings, there was a significant positive relationship between smartphone addiction and academic procrastination tendency, and a significant negative relationship between smartphone addiction and self-control. Additionally, no significant difference was observed in smartphone addiction based on gender; however, significant differences were identified in relation to daily smartphone usage time and the number of daily checks. Beyond these relational results, regression analyses revealed that academic procrastination significantly predicted smartphone addiction, while self-control was found to be a marginal predictor. The findings were interpreted in light of the relevant literature, and suggestions were offered to inform future research.

Keywords: Smartphone Addiction, Academic Procrastination, Self-Control.

ÖZET

Bu araştırmanın amacı, üniversite öğrencilerinde akademik erteleme ve öz kontrolün akıllı telefon bağımlılığını yordayıp yordamadığını incelemektir. Ayrıca, günlük kullanım süresi ve telefonu kontrol etme sıklığı açısından bağımlılığa ilişkin sayısal eşiklerin belirlenmesine katkı sağlanması hedeflenmektedir. Bununla beraber her üç değişkenin birbirleriyle ilişkilerinin incelenmesi ve cinsiyetin söz konusu değişkenler üzerinde anlamlı farklılık yaratıp yaratmadığının incelenmesi de amaçlanmıştır. Çalışma Türkiye'de üniversite öğrenimine devam eden 320 (NKadın= 219; NErkek= 101) öğrenci ile gerçekleştirilmiştir. Bu araştırmada veri toplamak amacıyla; Akıllı Telefon Bağımlılığı Ölçeği-Kısa Form, Aitken Akademik Erteleme Eğilimi Ölçeği, Kısa Öz-Kontrol Ölçeği ile kişisel bilgi formu kullanılmıştır. Elde edilen veriler, Bağımsız Örneklem t-Testi, Tek Yönlü Varyans Analizi (ANOVA), Pearson Korelasyon Katsayısı ve Regresyon Analizi ile değerlendirilmiştir. Yapılan analizler sonucunda; akıllı telefon bağımlılığı ile akademik erteleme eğilimi arasında anlamlı ve pozitif yönlü, akıllı telefon bağımlılığı ile öz kontrol arasında ise anlamlı ve negatif yönlü ilişkiler saptanmıştır. Ayrıca, akıllı telefon bağımlılığı açısından cinsiyete göre anlamlı bir fark bulunmazken, günlük kullanım süresi ve günlük kontrol edilme sayısına göre anlamlı düzeyde farklılıklar gözlemlenmiştir. İlişkisel bulgulara ek olarak, regresyon analizleri sonucunda akademik ertelemenin akıllı telefon bağımlılığını anlamlı düzeyde yordadığı; öz kontrolün ise bu bağımlılığı marjinal düzeyde yordadığı belirlenmiştir. Elde edilen sonuçlar, ilgili literatür doğrultusunda yorumlanmış ve ileride gerçekleştirilebilecek çalışmalara ışık tutacak önerilerde bulunulmuştur.

Anahtar Kelimeler: Akıllı Telefon Bağımlılığı, Akademik Erteleme, Öz-Kontrol.

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1. INTRODUCTION

This study aims to examine smartphone addiction among university students in relation to their levels of academic procrastination and self-control. In this context, smartphone addiction is addressed as the dependent variable, while academic procrastination and self-control are evaluated as independent variables. By identifying the relationships among these variables, the study seeks to determine the extent to which academic procrastination and self-control predict smartphone addiction. The analyses were conducted with the intention of contributing to the understanding of behavioral patterns related to technology use among young adults.

In many of these studies, interpretations have emphasized that as smartphone addiction increases, academic procrastination also rises, with assertions that academic procrastination behavior occurs as a result of smartphone addiction. However, it should be noted that due to the lack of experimental methods in these studies, making causal inferences, even indirectly, is difficult; if such inferences are made, it is possible that reverse causal explanations may also be feasible. Although an experimental method is not applied in this research, it is emphasized that, contrary to previous studies, smartphone addiction may also emerge as a consequence of academic procrastination. In this context, the need to test the predictive power of academic procrastination on smartphone addiction has emerged. On the other hand, it has been observed that self-control has a significant influence on smartphone addiction (Karaçorlu et al., 2019; Khang et al., 2013; Cho et al., 2017), and it is intended to compare the predictive power of self-control and academic procrastination. The absence of any studies in the literature that address both academic procrastination and self-control together can be considered another research problem. Despite the increasing number of studies on smartphone addiction, academic procrastination, and self-control, there is still a gap in the literature regarding the joint examination of these three variables within a single predictive framework. Especially among university students—who are in a critical developmental stage for self-regulation and digital habits—understanding how behavioral traits like procrastination and self-control relate to smartphone addiction is essential for both theoretical and practical reasons. While prior research has often investigated these variables in isolation or in pairwise models, an integrated approach is needed to reveal the underlying mechanisms that contribute to excessive smartphone use. Moreover, the mixed findings in the literature regarding gender differences highlight the importance of further investigation in different cultural and educational contexts. Therefore, this study aims to contribute to the growing body of literature by examining smartphone addiction as a behavioral outcome that can be predicted by both academic procrastination and self-control levels in a university student sample.

1.1. Smartphone Addiction

The ever-changing conditions of the technological age and the shift away from traditional forms in daily life can lead to changes in the rates of technology usage, which in turn affects the usage of technological devices. For instance, during the Covid-19 pandemic, this had a global impact, the prevalence of online education increased, leading to a rise in the use and duration of smartphones, computers, tablets, and instant messaging applications. This situation caused a significant and marked increase in technology addiction scores, especially among students (Karakaya, 2021). Technology addiction is defined as a non-chemical (behavioral) addiction involving human-machine interaction (Griffiths, 1996). It can be passive, like watching TV, or active, like playing games, and it has been emphasized that it contains encouraging and reinforcing features that can contribute to the promotion of addictive tendencies (Griffiths,

1996). Griffiths (1995) classifies technology addiction under behavioral addictions and states that such addictions manifest through various criteria, including salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. In recent literature, technology addiction is defined as the excessive, uncontrolled, and compulsive use of digital technologies—particularly the internet and social media platforms—in ways that impair daily functioning (Uslu, 2022). This form of addiction is not solely associated with the amount of time spent using technology but is also characterized by symptoms such as loss of control, use for mood regulation, and withdrawal-like experiences (Brand et al., 2022). Recent studies further emphasize that persuasive system designs and dark patterns deliberately embedded in digital platforms play a critical role in reinforcing addictive behaviors (Chen et al., 2021; Puspitasari & Lee, 2022). Considering the fast-evolving and dynamic nature of digital environments, it is essential that definitions and conceptualizations of technology addiction are grounded in current scientific literature.

Although smartphones, as a product of technological development, are designed to enhance individuals' functionality in daily life, some people overuse smartphones or become addicted to them, thereby reducing their quality of life both physically and mentally (Elhai et al., 2017; Matar Boumosleh & Jaalouk, 2017). While smartphone addiction is not yet officially recognized as a clinical disorder by the Diagnostic and Statistical Manual of Mental Disorders (DSM), Fifth Edition **(**American Psychiatric Association, 2013) ICD-11 (International Classification of Diseases), many aspects of this behavior show similarities to other recognized behavioral addictions (Ting & Chen, 2020). Addictive behaviors are often subjectively experienced as a "loss of control" and persist despite efforts to avoid the behavior. Indeed, Al-Barashdi et al. (2015) have addressed smartphone addiction using terms like "problematic mobile phone use" or "impulsive mobile phone use" and defined this behavioral addiction as "being preoccupied with phone use to the extent that other areas of life are neglected." Therefore, it is not surprising that some studies on smartphone addiction use the term "excessive use" instead of "addiction" (e.g., Claesdotter-Knutsson et al., 2021; Kim, Choi & Jin-Kim, 2020).

Despite the lack of a clear definition of smartphone addiction, it has been noted that it develops based on factors such as the duration and frequency of use, the ability to control usage, and the purpose of use (Kuyucu, 2017). For example, Claesdotter-Knutsson et al. (2021) defined excessive smartphone use as “the misuse of smartphones” along with functional impairment. Hefner et al. (2018) described this addiction as “an excessive level of cognitive, emotional, and behavioral dependence on smartphones.” Considering the studies and definitions in the literature, it is observed that smartphone addiction is often used interchangeably with “excessive mobile phone/smartphone use.” In this study, smartphone addiction refers to excessive smartphone use, which does not yet have an official definition but exhibits patterns of behavioral addiction.

Smartphone addiction as become a significant global issue due to the increasing influence of smartphones in daily life (Lin et al., 2016). From 2016 to 2023, there has been a rapid increase in the global smartphone usage rate and prevalence, reaching 69% of the world's population (statista.com, 2024). This rise seems to have led to an increase in research on which conditions and personality traits might be associated with smartphone addiction. However, findings on smartphone addiction appear to show inconsistencies regarding certain variables. For example, while some studies suggest that problematic smartphone use is higher in women than in men (Augner & Hacker, 2011; Güneş, 2018; Qaisar et al., 2017; Yang et al., 2019), other studies argue

that there are no significant gender differences in smartphone addiction (e.g., Güngör & Koçak, 2020; Kwon et al., 2013; Mitchell & Hussain, 2018; Pearson & Hussain, 2016). In this context, it appears that more comprehensive and additional research is needed to better understand the role of gender in smartphone addiction.

Many studies highlight the harmful effects of excessive smartphone use alongside its beneficial applications, such as providing users with internet-based communication, commerce, education, entertainment platforms, and even clinical applications (Moattari et al., 2017) (see Hanphitakphong, 2021; Moattari et al., 2017; Montag, Wegmann, Sariyska, Demetrovics & Brand, 2020). It is known that individuals with a high likelihood of smartphone addiction tend to have higher scores for neuroticism and narcissistic personality disorder (Pearson & Hussain, 2016), and experience chronic stress and low emotional stability (Augner & Hacker, 2011). Moreover, studies have shown that individuals with smartphone addiction have poorer sleep quality, and this low sleep quality increases the risk of depression and anxiety (Adams & Kisler, 2013). It has also been found that university students with smartphone addiction have lower grade point averages compared to those without (Hawi & Samaha, 2016). A review of the literature on which personal traits might trigger this behavioral addiction suggests that age, impulsivity, excessive reassurance-seeking, and depression are important antecedents (Mitchell & Hussain, 2018). These findings draw attention to research on the antecedents and effects of smartphone addiction.

1.2. Academic Procrastination

Procrastination is the act of delaying tasks without any reason until reaching a point of experiencing subjective distress (Solomon & Rothblum, 1984). According to Steel (2007), procrastination is voluntarily delaying an intended action despite the expectation that the action plan will be in a worse state due to the delay. Procrastination behavior is also influenced by mindset and beliefs, such as an individual's views on success, failure, self-worth, immediate gratification, and task importance (Fernández Da Lama & Brenlla, 2024). Yıldırım (2014) stated that, according to the behavioral approach, procrastination is reinforced due to the reinforcement of procrastination behavior, which is not punished or is rewarded after being carried out (cited in Öztürk-Başpınar, 2020).

There are many studies that categorize procrastination into various types (Chun Chu & Choi, 2005; Milgram, Mey-Tal, & Levison, 1998). Milgram et al. (1998) identified five different types of procrastination: academic procrastination, general procrastination, decision procrastination, neurotic procrastination, and compulsive procrastination. In this study, the focus is specifically on academic procrastination, as it examines the predictive power of academic procrastination on smartphone addiction among university students. Academic procrastination is generally defined as the tendency to delay the initiation or completion of academic tasks without a clear or justified reason (Ferrari, Keane, Wolfe, & Beck, 1998), and as voluntarily postponing an intended action related to study, despite the expectation that the delay will result in a worse outcome (Steel & Klingsieck, 2016). Ajayi (2020) defined academic procrastination as the behavior of postponing academic tasks, such as preparing for exams, completing term assignments, managing administrative tasks related to school, and fulfilling attendance requirements, to another time. There are studies indicating that academic procrastination is quite common among students. For example, while academic procrastination is observed at a rate of 54% among high school students (Uzun Özer, 2009), this rate is 40% among undergraduate students (Rothblum, Solomon, & Murakami, 1986), and ranges between 20% and 45% among graduate

students (Onwuegbuzie, 2004). Academic procrastination, which is becoming increasingly common among university students (Gustavson & Miyake, 2017; Zacks & Hen, 2018), was reported at a rate of 53% in the study by Ulukaya and Bilge (2014). The significant prevalence of academic procrastination behavior seems to have led to an increase in research on this behavior. These studies indicate that academic procrastination may be associated with certain negative conditions or characteristics. For instance, it has been found that the tendency for academic procrastination is negatively and significantly related to academic perfectionism (Aygün & Topkaya, 2022), individuals exhibiting academic procrastination struggle with emotion regulation (Bytamar, Omid, & Khakpoor, 2020), and experience higher levels of psychological stress (Eisenbeck, Carreno, & Uclés-Juárez, 2019). Additionally, it has been reported that individuals prone to academic procrastination have low self-control (Özer, Leblanc, & Ferrari, 2020; Li et al., 2022) and low self-esteem (Uzun et al., 2020; Beck, Koons, & Milgram, 2000).

Many studies conducted with university students have shown a positive correlation between academic procrastination and smartphone addiction among this demographic, indicating that as smartphone addiction increases, the tendency toward academic procrastination also rises (Akıncı, 2021; Albursan et al., 2022; Güngör & Koçak, 2020; Li, Gao & Xu, 2020; Urfalıoğlu-Şahin & Tunalı, 2023). Iftikhar, Liaquat, and Shadid (2022) obtained similar results and additionally noted that male participants exhibited more academic procrastination behavior than female participants. Other studies have also found similar gender differences in academic procrastination. For example, in a study by Balkıs, Duru, Buluş, and Duru (2006) examining academic procrastination tendencies among university students in relation to various variables, it was found that female students exhibited lower levels of academic procrastination compared to their male counterparts. In another study by Balkıs and Duru (2009), conducted on prospective university teachers to investigate the prevalence of procrastination behavior, demographic characteristics, and personal preferences, male participants scored higher in procrastination behavior than female participants. Similarly, in a study by Özer and Bilge (2005) on university students examining the prevalence, possible causes, gender differences, and academic performance related to academic procrastination, male students were found to procrastinate more than female students, particularly in preparing for exams, completing term papers, and weekly reading assignments. These research findings collectively suggest that academic procrastination is more prevalent in males compared to females. On the other hand, there are a limited number of studies that indicate no gender difference in academic procrastination (e.g., Bolbolian, Asgari, Sefidi, & Zadeh, 2022). The study by Uzun-Özer, Demir, and Ferrari (2009) emphasized that there are gender differences in the causal processes of academic procrastination. According to the findings of this study, the number of female students reporting higher levels of academic procrastination due to fear of failure and laziness was significantly greater than that of male students. The same study reported that male students were more prone to academic procrastination compared to female students, and that this behavior was associated with tendencies such as higher sensation-seeking and resistance to authority. Therefore, it can be stated that more research is needed to investigate whether there are gender differences in academic procrastination.

1.3. Self-Control

According to Hofmann et al. (2013), self-control involves the capacity to regulate one's internal reactions and inhibit impulsive or undesired behavioral patterns, thereby preventing those impulses from being acted upon. It encompasses delaying gratification, exerting control,

willpower, time management, self-discipline, self-regulation, and ego strength (Moffitt et al., 2011). It is also expressed as an individual's effort to regulation of self (Muraven & Baumeister, 2000). According to Kanfer and Karoly (1972), self-control emerges when an individual or an organism attempts to change the way they would otherwise think, feel, or behave (as cited in Muraven & Baumeister, 2000). Self-control behaviors or self-regulatory behaviors are designed to maximize an individual's long-term interests (Mischel, 1996), and there are significant individual differences in these behavioral capacities (Rosenbaum, 1980; Paschke et al., 2016). For example, some individuals may possess self-control over behaviors related to maintaining their lives, managing their anger, adhering to diets, or keeping promises, while others may have more self-control regarding stopping after a few drinks, saving money, or keeping secrets. These differences are associated with greater success and well-being in life domains (Tangney, Baumeister, & Boone, 2004). Additionally, individuals with low self-control and those with high self-control interpret their world differently. Individuals with low self-control often perceive many behaviors, particularly regulatory behaviors, as burdensome and difficult. After completing a challenging behavior, individuals with low self-control are more likely to fail in exhibiting regulatory behaviors, while it is more probable for a highly self-regulated person to maintain their regulatory behavior (Mehta, 2010).

Elevated self-control levels have been empirically linked to enhanced academic achievement, greater psychological adjustment, and elevated self-esteem. Furthermore, high self-control is negatively associated with maladaptive behaviors such as excessive eating and alcohol misuse, while positively correlated with the capacity to establish healthy interpersonal relationships, the development of secure attachment styles, and effective emotional regulation (Tangney et al., 2004). Studies conducted with university students have shown that students with low self-control are at greater risk for reporting excessive drinking, marijuana use, and prescription drug misuse (Ford & Blumenstein, 2013), and they are more likely to exhibit internet addiction (Li et al., 2021). Another study observed a relationship between trait self-control and emotion regulation, indicating that students with high self-control are more likely to use healthier and more adaptive coping strategies for stress compared to students with low self-control (Powers, Moshontz, & Hoyle, 2020).

Studies examining the relationship between smartphones and self-control indicate that increased stress leads to a decrease in self-control, which in turn contributes to an increase in smartphone addiction (Cho, Kim, & Park, 2017). In a study conducted by Adiyatma, Mudjiran, and Afdal (2020), the relationship between university students' smartphone usage habits and their levels of self-control was examined. The findings indicated that higher levels of self-control were associated with lower tendencies toward smartphone addiction, whereas individuals with lower self-control exhibited more pronounced signs of addictive behavior. Several studies in the literature have reported similar findings (e.g., Kalecik, 2016; Khang et al., 2013; Yanık & Özçiçek, 2021; Özdemir et al., 2014).

On the other hand, conflicting findings exist in the literature regarding whether self-control abilities differ by gender. For instance, in a study conducted by Yıldız Yıldırım (2022), no statistically significant difference was found between self-control and gender. However, in Boyalı's (2020) research, which examined the mediating role of smartphone addiction in the relationship between self-control and academic procrastination, self-control levels were found to vary by gender, with female participants demonstrating higher levels of self-control compared to male participants. Feyzioğlu (2023), in a study examining self-control and coping styles with

stress as predictors of procrastination, indicated that self-control levels did not differ by gender. In another study conducted with adolescent individuals, it was reported that males had higher self-control abilities than females (Wang et al., 2017). However, in a study by Lynskey et al. (2000), male participants exhibited lower self-control compared to female participants.

The relationship between self-control and gender has been a long-standing topic of debate in psychological literature. The origins of observed gender differences in individuals' self-regulatory abilities are not solely biological; they are also associated with social norms, parenting styles, and cultural values. Accordingly, numerous studies conducted with individuals from different age groups and cultural contexts have explored the role gender may play in shaping self-control. For example, a comprehensive meta-analysis conducted by Else-Quest, Hyde, Goldsmith, and Van Hulle (2006), which examined data from over 16,000 children, found that girls scored higher than boys in areas of self-regulation such as attention focusing, emotional regulation, and effortful control. The same analysis reported that boys exhibited greater activity levels and shorter attention spans. Similarly, in a study conducted by Matthews, Ponitz, and Morrison (2009), classroom observations of five-year-old children revealed that girls demonstrated significantly higher behavioral self-regulation compared to boys. The researchers explained these findings not only by individual differences but also through gender norms and socialization processes. In another study conducted by Wanless et al. (2013), which aimed to compare preschool children's self-regulation skills based on gender across the United States, Taiwan, South Korea, and China, both direct assessments and teacher evaluations were used. The results showed that girls in the U.S. sample significantly outperformed boys in both individual tests and teacher observations. However, in Taiwan, South Korea, and China, no significant gender differences were found in the individual assessments. Notably, in Taiwan and South Korea, girls were rated higher in self-regulation by teachers, while in China, the difference was not statistically significant. These findings indicate that gender differences in self-regulation are influenced by cultural context and may vary depending on the method of assessment (Wanless et al., 2013). When these results are considered together, it can be suggested that in some cultural contexts, girls are expected to conform more strongly to social-emotional norms such as calmness and responsibility, thereby encouraging the early and systematic development of self-regulation skills. In contrast, boys tend to face fewer such social pressures and experience greater behavioral autonomy during the development of self-control. In some societies, for example, it is expected that girls will exhibit greater self-restraint due to higher socio-emotional expectations (Chaplin & Aldao, 2013), while boys may be subject to fewer such expectations (Rose & Rudolph, 2006). Indeed, studies have shown that girls are more often exposed to social guidance and societal expectations in domains such as emotion regulation, empathy, and relationship management, which can contribute to gender-based divergences in the development of self-regulation (Else-Quest et al., 2006). Therefore, the gender differences observed in the present study can be interpreted not only at the individual level but also as a reflection of prevailing social norms. Nofziger (2010) examined the influence of gender identity on individuals' levels of self-control and found that those with more feminine gender traits displayed higher levels of self-control. This finding suggests that societal norms and feminine behavioral expectations, when combined with a desire for social acceptance, may strengthen individuals' self-regulation abilities. Similarly, Shoenberger and Rocheleau (2017) identified differences in parental disciplinary strategies toward boys and girls, reporting that girls were subject to stricter supervision and more structured, explanatory parenting practices, while boys were granted more autonomy. These differences were found to influence levels of self-control:

girls developed higher levels of self-regulation, while boys remained at relatively lower levels. Taken together, these studies indicate that self-control is not merely an individual or innate capacity, but is also shaped by gender roles and parental attitudes experienced during childhood (Nofziger, 2010; Shoenberger & Rocheleau, 2017). In this regard, the findings of the present study point not only to individual-level differences but also to the broader effects of gender norms on self-control, offering a valuable basis for understanding how self-regulation is structured across different cultural settings. Therefore, it appears that there are inconsistent findings in the literature regarding whether self-control differs by gender, and it was deemed necessary and appropriate to examine whether there is a gender difference in self-control abilities in this study.

In many of these studies, interpretations have emphasized that as smartphone addiction increases, academic procrastination also rises, with assertions that academic procrastination behavior occurs as a result of smartphone addiction. However, it should be noted that due to the lack of experimental methods in these studies, making causal inferences, even indirectly, is difficult; if such inferences are made, it is possible that reverse causal explanations may also be feasible. Although an experimental method is not applied in this research, it is emphasized that, contrary to previous studies, smartphone addiction may also emerge as a consequence of academic procrastination. In this context, the need to test the predictive power of academic procrastination on smartphone addiction has emerged. On the other hand, it has been observed that self-control has a significant influence on smartphone addiction (Karaçorlu et al., 2019; Khang et al., 2013; Cho et al., 2017), and it is intended to compare the predictive power of self-control and academic procrastination. The absence of any studies in the literature that address both academic procrastination and self-control together can be considered another research problem.

Taken together, these gaps point to a clear need for a more integrated and explanatory approach to understanding smartphone addiction among university students. This study seeks to fill that gap by jointly examining the predictive roles of academic procrastination and self-control within a single model, while also exploring behavioral indicators such as daily usage time and checking frequency. By addressing both psychological and behavioral dimensions simultaneously, the current research offers a more comprehensive understanding of smartphone addiction. Furthermore, by clarifying the direction of the relationship between academic procrastination and smartphone addiction, this study contributes new insights to a field where causal assumptions are often made without adequate methodological grounding.

1.4. Research Problem

Smartphone addiction has become an increasingly prevalent issue, particularly among university students in early adulthood. As smartphones become integrated into nearly every aspect of daily life, problematic usage patterns have grown significantly. However, there is no universally accepted definition of smartphone addiction in the existing literature. This conceptual ambiguity necessitates the investigation of behavioral indicators—such as daily usage time and frequency of checking the device—that may signal problematic use.

Psychological variables such as academic procrastination and self-control are considered among the key individual factors associated with smartphone addiction. However, there is a lack of research examining the combined predictive roles of these two constructs. Moreover, studies investigating gender differences in smartphone addiction, academic procrastination, and self-

control have yielded inconsistent results. These discrepancies highlight the importance of addressing the issue through both exploratory and hypothesis-driven approaches.

Accordingly, the present study has two main objectives. First, it aims to explore whether smartphone addiction, academic procrastination, and self-control levels differ by gender, and whether smartphone addiction scores vary based on users' daily usage time and the frequency of checking the device. Due to inconsistent findings in the literature, no hypotheses were formulated for these variables, and they were examined through exploratory research questions. Second, the study aims to examine the extent to which academic procrastination and self-control predict smartphone addiction among university students. These relationships were tested using a hypothesis-driven approach, based on previous empirical and theoretical findings.

Research Questions

1. Does smartphone addiction differ by gender?
2. Does academic procrastination differ by gender?
3. Does self-control differ by gender?
4. Do smartphone addiction scores differ according to daily smartphone usage time?
5. Do smartphone addiction scores differ according to the frequency of checking the smartphone?

Research Hypotheses

H1: Self-control negatively and significantly predicts smartphone addiction.

H2: Academic procrastination positively and significantly predicts smartphone addiction.

2. METHOD

2.1. Research Model

This study employed a relational survey design, categorized under quantitative research methodologies. Data were analyzed using the SPSS 22 statistical software package. For descriptive statistics, mean and standard deviation values were calculated. To assess whether the data met the assumption of normality, skewness and kurtosis values were examined, with the acceptable threshold set between -1.5 and +1.5 (Tabachnick & Fidell, 2013). The results indicated that all variables in the study conformed to normal distribution (see Table 1). In order to assess group differences in participants' mean scale scores, independent samples t-tests and one-way ANOVA were utilized. The homogeneity of variances assumption was tested using Levene's test. Additionally, Pearson correlation analysis was performed to explore the relationships between the study variables.

To determine the variables predicting smartphone addiction, two separate multiple linear regression analyses were conducted (total self-control, impulsivity/self-discipline). The research data were checked for regression assumptions during the data analyses. First, the linearity of the variables was assessed using scatterplots, and it was determined that the variables were linear. Subsequently, to determine the presence of autocorrelation among the variables, Durbin-Watson coefficients were calculated. The values were computed as 1.97 and 2.00 for the two different regression analyses (1 - total self-control, 2 - impulsivity/self-discipline). A Durbin-Watson coefficient between 1.5 and 2.5 indicates that there is no autocorrelation among the variables. Therefore, no autocorrelation issue exists in the current data. Variance inflation factor (VIF)

values were checked concerning the multicollinearity problem. A value less than 10 indicates that there is no multicollinearity issue in the data (Büyüköztürk, 2011). The maximum VIF value was calculated as 1.17 (total self-control) and 1.16 (impulsivity/self-discipline) for both analyses. The normality of residuals was checked via normal probability plots (P–P plots) and histograms, which showed that residuals were approximately normally distributed. Homoscedasticity was evaluated by inspecting scatterplots of standardized residuals versus predicted values. The random spread of the residuals suggested that the assumption of constant variance was satisfied. Finally, to identify outliers in the research data, Cook's distance values were examined. A Cook's distance value exceeding 1 suggests that the data point may be an outlier (Tabachnick & Fidell, 2013). As a result, the maximum Cook's distance value was calculated as 0.05 for both analyses.

2.2. Study Group

This study was conducted with a total of 320 university students enrolled in various academic levels and departments at different higher education institutions in Turkey. The participant group included 101 males (31.5%) and 219 females (68.5%). Their ages ranged from 18 to 25 and above. Of the students, 6 were enrolled in preparatory programs, 39 were first-year, 53 were second-year, 112 were third-year, 54 were in their fourth year, and 56 were graduate students. Participation in the study was entirely voluntary. Prior to data collection, participants were informed about the purpose of the study and provided written consent, acknowledging that they could withdraw from the study at any point. All necessary ethical procedures were followed throughout the research process.

2.3. Data Collection Tools

In this study, data were collected using the Aitken Procrastination Inventory, the Brief Self-Control Scale, the Smartphone Addiction Scale–Short Version, and personal information form.

2.3.1. Smartphone Addiction Scale–Short Version

The Smartphone Addiction Scale–Short Version used in this study is a measurement tool developed to assess individuals' risk of smartphone addiction. The original version of the scale was developed by Kwon et al. in 2013, and its Turkish adaptation was conducted by Noyan et al. in 2015. The Smartphone Addiction Scale–Short Version was chosen to practically assess individuals' problematic smartphone use. This version was deemed appropriate due to its adequate psychometric properties in terms of reliability and validity, as well as its ability to streamline the data collection process. Given that the sample consisted of university students, the use of a short form was preferred to reduce attention fatigue and increase participant engagement by shortening the survey duration.

The scale consists of 10 items, and participants respond to each item using a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree). All items are scored in one direction, and the total score ranges from 10 to 60. Higher scores indicate a greater risk of smartphone addiction.

This scale has a unidimensional structure and does not include any sub-dimensions. Psychometric analyses have shown that the skewness and kurtosis values fall within the acceptable range of ±1.5. In the current study, the internal consistency coefficient (Cronbach's alpha) of the scale was calculated as .89, indicating that the scale has a high level of internal reliability and functions as a valid measurement instrument.

2.3.2. Brief Self-Control Scale

The Brief Self-Control Scale, developed by Tangney et al. (2004), was designed to assess individuals' capacity to regulate their impulses, emotions, and thoughts. The scale consists of 13 items, and participants respond to these items using a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items are structured to reflect individuals' levels of self-control and their ability to avoid engaging in maladaptive behaviors.

The Brief Self-Control Scale was used to evaluate individuals' ability to regulate their impulses, act in a planned manner, and maintain goal-directed behavior. Self-control is considered a relevant individual trait in the context of smartphone addiction and is expected to have meaningful associations with the behavioral outcomes examined in this study. Furthermore, the short and practical structure of the scale facilitates completion without inducing survey fatigue in participants and contributes to time efficiency in the research process.

The scale was first adapted into Turkish by Coşkan (2010), who reported a Cronbach's alpha internal consistency coefficient of .89. In the original development study, the Cronbach's alpha was found to be .85, and the test-retest reliability was reported as .87. Another validity study conducted by Nebioğlu, Konuk, Akbaba, and Eroğlu (2012) found the internal consistency coefficient to be .83.

In the current study, the overall Cronbach's alpha reliability coefficient of the scale was calculated as .79. The scale includes two sub-dimensions: impulsivity and self-discipline. The analysis revealed that the Cronbach's alpha for the impulsivity dimension was .67, while the self-discipline dimension yielded a relatively low value of .38. Due to the low internal consistency of the self-discipline subscale, the current analysis was conducted using the total score rather than evaluating each sub-dimension separately. Additionally, the skewness and kurtosis values were within the acceptable range of ±1.5, indicating a normal distribution of the data.

2.3.3. Aitken Procrastination Inventory

The Aitken Procrastination Inventory was originally developed by Aitken (1982) to assess students' tendencies to delay fulfilling academic responsibilities on time. The scale has a single-factor structure and includes a total of 19 items. Participants respond to each item using a 5-point Likert-type scale ranging from 1 (never) to 5 (always).

The Aitken Procrastination Inventory was employed to measure individuals' tendencies to delay academic tasks. Academic procrastination is recognized as a significant behavioral factor associated with digital media and technology use, and constitutes one of the key variables in this study. The scale has been widely used in previous research with similar populations and is considered an effective tool for capturing this construct.

The Turkish adaptation of the scale was carried out by Balkıs (2006), and in that study, the internal consistency coefficient (Cronbach's alpha) was reported as .89. In the current research, the internal consistency coefficient was calculated as .88. Additionally, the distribution of the data was examined, and the skewness and kurtosis values were found to fall within the acceptable range of ±1.5, indicating that the data met the assumption of normality. Higher scores obtained from the scale reflect a greater tendency toward academic procrastination.

3. FINDINGS

3.1. Descriptive Statistics and Correlation Analysis

The findings of the descriptive statistics and the analysis related to normal distribution are presented in Table 1.

Table 1. Descriptive Statistics

	N	Mean	SD	Skewness	Curtosis
Smartphone addiction	320	31.98	11.15	.42	-.30
Self-control	320	43.15	8.11	.13	-.39
Academic procrastination	320	39.74	11.71	-.06	-.69

When examining the skewness and kurtosis values of the data in the study, it was determined that all study variables exhibited a normal distribution. To explore the interrelationships among the variables in the study, Pearson correlation coefficients were calculated, with the corresponding results summarized in Table 2.

Table 2. Correlation Analysis Results

	1	2	3
1. Smartphone addiction	1	-.52**	.42**
2. Self-control		1	-.62**
3. Academic procrastination			1

Note: **p<.01,*p<.05

As seen in Table 2, smartphone addiction is significantly negatively correlated with self-control ($r = -.52$, $p < .01$) and significantly positively correlated with academic procrastination ($r = .42$, $p < .01$). On the other hand, a significant negative correlation was found between self-control and academic procrastination ($r = -.62$, $p < .01$).

3.2. Independent Samples T-Test Analysis

In order to assess whether gender plays a role in participants' levels of smartphone addiction, self-control, and academic procrastination, an independent samples t-test was utilized. The outcomes of this statistical procedure are detailed in Table 3.

Table 3. T-test Results Based On Gender

	Gender	N	Mean	SD	t	P
Smartphone addiction	Male	101	31.64	12.01	-.36	.714
	Female	219	32.14	10.75		
Self-control	Male	101	41.34	7.63	-2.75	.006**
	Female	219	43.99	8.20		
Academic procrastination	Male	101	40.08	11.42	.34	.728
	Female	219	39.59	11.86		

Note: ***p<.001, **p<.01, *p<.05.

According to the findings of the t-test analysis, it was determined that the gender variable did not create a significant difference in smartphone addiction and academic procrastination. On the other hand, the mean self-control scores for men were found to be 41.34 (SD = 7.63) and for women 43.99 (SD = 8.20), indicating a significant differentiation between the mean self-control scores. Thus, it was concluded that the mean self-control scores of female participants were significantly higher than those of male participants.

3.3. One-Way Analysis of Variance

3.3.1. Examination Of Group Averages In Terms Of Daily Smartphone Usage Duration

To investigate whether participants' levels of smartphone addiction, self-control, and academic procrastination differ significantly based on their daily smartphone usage durations, a one-way ANOVA was carried out. The subgroup reporting 0–1 hour of daily use was excluded from the analysis due to the limited number of participants (n = 2). The outcomes derived from this analysis are outlined in Table 4.

Table 4. ANOVA Results Based On Daily Smartphone Usage Time

Variable	**Group**	**N**	**Mean**	**SD**	**F**	**P**
Smartphone addiction	1-3 hours	76	25.07	7.78	29.18	.000
	4-6 hours	185	33.01	10,92		
	7 hours and above	57	38.35	10.90		
	Total	318	32.07	11.13		
Self-control	1-3 hours	76	47.51	7.73	16.69	.000
	4-6 hours	185	42.11	8.05		

	7 hours and above	57	40.65	6.68		
	Total	318	43.14	8.12		
Academic procrastination	1-3 hours	76	34.46	9.88	15.14	.000
	4-6 hours	185	40.28	12.05		
	7 hours and above	57	45.12	10.14		
	Total	318	39.75	11.73		

Findings from the ANOVA indicated that participants' levels of smartphone addiction, self-control, and academic procrastination varied significantly based on their daily smartphone usage duration, as reflected in the following results: smartphone addiction ($F(2, 315) = 29.18$, $p < .05$), self-control ($F(2, 315) = 16.69$, $p < .05$), and academic procrastination ($F(2, 315) = 15.14$, $p < .05$). To determine which groups differed, Tukey and Games-Howell tests were used as Post Hoc analyses. The findings from the Post Hoc analysis are presented in Table 5.

Table 5. Post Hoc Results Based On Daily Smartphone Usage Time

Variable	**Test**	**Group (I)**	**Group (J)**	**P**
Smartphone addiction	Games-Howell	1-3 hours	4-6 hours	.000
			7 hours and above	.000
		4-6 hours	7 hours and above	.005
Self-control	Tukey	1-3 hours	4-6 hours	.000
			7 hours and above	.000
		4-6 hours	7 hours and above	.429
Academic procrastination	Games-Howell	1-3 hours	4-6 hours	.000
			7 hours and above	.000
		4-6 hours	7 hours and above	.009

According to the results of the conducted analyses, it was determined that the levels of smartphone addiction and academic procrastination in the group with daily smartphone usage between 1-3 hours were significantly lower than those in the groups with daily usage between 4-6 hours and 7 hours and above ($p < .05$). Additionally, the group with daily smartphone usage between 4-6 hours was found to have significantly lower levels of academic procrastination and smartphone addiction compared to the group with daily usage of 7 hours and above ($p < .05$). On the other hand, the self-control level of the group with daily smartphone usage between 1-3

hours was found to be significantly higher than that of the groups with daily usage between 4-6 hours and 7 hours and above ($p < .05$).

3.3.2. Examination Of Group Averages In Terms Of Smartphone Checking Frequency

A one-way analysis of variance (ANOVA) was conducted to test whether there is a significant difference in smartphone addiction, self-control, and academic procrastination levels of participants based on their daily smartphone checking frequency. The group that checks their smartphone less than 10 times a day was not included in the analysis due to the small number of participants (n = 14). The findings from the analysis are presented in Table 6.

Table 6. ANOVA Test Results Based On Participants' Daily Smartphone Checking Frequency

Variable	Group	N	Mean	SD	F	P
Smartphone addiction	10-20 times	119	28.51	9.99	15.38	.000
	30-40 times	93	33.78	10.36		
	40+ times	94	36.24	11.10		
	Total	306	32.49	10.94		
Self-control	10-20 times	119	44.96	8.06	10.28	.000
	30-40 times	93	42.95	7.84		
	40+ times	94	40.14	7.08		
	Total	306	42.87	7.93		
Academic procrastination	10-20 times	119	36.80	10.57	9.84	.000
	30-40 times	93	41.01	12.39		
	40+ times	94	43.57	11.02		
	Total	306	40.16	11.61		

According to the results of the ANOVA analysis, significant differences were found in smartphone addiction ($F (2-303) = 15.38$, $p < .05$), self-control ($F (2-303) = 10.28$, $p < .05$), and academic procrastination ($F (2-303) = 9.84$, $p < .05$) scores based on participants' daily smartphone checking frequency. To determine between which groups the differences occurred, the Tukey test was used as a Post Hoc analysis. The findings from the Post Hoc analysis are presented in Table 7.

Table 7. Post Hoc Analysis Results Based on Participants' Daily Smartphone Checking Frequency

Variable	Test	Group (I)	Group (J)	P

Smartphone addiction	Tukey	10-20 times	30-40times	.001
			40+ times	.000
		30-40 times	40+ times	.244
Self-control	Tukey	10-20 times	30-40 times	.144
			40+ times	.000
		30-40 times	40+ times	.035
Academic procrastination	Tukey	10-20 times	30-40 times	.020
			40+ times	.000
		30-40 times	40+ times	.268

According to the results of the conducted analyses, it was determined that the levels of smartphone addiction and academic procrastination in the group that checks their smartphone 10-20 times a day were significantly lower than those in the groups that check their smartphones 30-40 times and more than 40 times a day ($p < .05$). Additionally, the group that checks their smartphone 30-40 times a day was found to have significantly higher self-control levels than the group that checks their smartphone more than 40 times a day ($p < .05$).

3.4. Multiple Regression Analyses

Two separate Multiple Linear Regression analyses were conducted to test the predictive effects of self-control and academic procrastination on smartphone addiction. The findings from the analysis, which aimed to identify the variables predicting smartphone addiction, are presented in Table 8.

Table 8. Regression Analysis Results For Predicting Smartphone Addiction

Variable	**B**	**SE**	B	**t**	**Sig.**	**Zero-Order r**	**Partial r**
(Constant)	51.48	5.34		9.63	.000		
Self-control	-.59	.08	-.43	-7.03	.000	-.33	-.36
Academic procrastination	.15	.06	.15	2.51	.012	.12	.14

Note. R= .533, R^2= .284, F= 62.80

According to the results of the multiple regression analysis, the tested model for predicting smartphone addiction was found to be significant ($F(2\text{-}317) = 62.80$, $p < .001$). The created model explains 28.4% of the total variance in smartphone addiction. As shown in Table 11, self-

control (β = -0.59, t = 9.63, p < .001) and academic procrastination (β = 0.15, t = 2.51, p < .05) have a significant predictive effect on smartphone addiction.

4. CONCLUSION

This study found no significant gender difference in smartphone addiction, suggesting that gender may not be a decisive factor on its own. Supporting this, recent studies (Chen et al., 2017; Lee & Kim, 2018) emphasize that digital addiction is shaped more by usage patterns—such as social media or gaming—than by gender roles. Similarly, Wu and Chou (2023) show that gender is often treated as a secondary variable in intervention research. In contrast, Jenaro et al. (2007) found that women reported higher levels of anxiety, loneliness, and psychological distress related to mobile phone use. Choliz (2012) also noted that women tend to develop addiction through emotional and social functions, whereas men are more drawn to gaming and unregulated digital content.

These conflicting findings can be explained by theoretical frameworks that view gender as a cultural and contextual category rather than a biological one. In particular, the Gender Role Theory (Eagly, 1987) argues that individuals' patterns of technology use are shaped by socially constructed roles. In this context, the effect of gender alone is insufficient to explain addictive behaviors; it must be evaluated in conjunction with other psychosocial factors such as age, social ties, family communication style (Lee & Kim, 2018), self-efficacy (Samson, 2020), and academic satisfaction (Balkıs & Duru, 2017). Indeed, the Behavioral Addiction Theory (Griffiths, 1995) emphasizes that technology addiction is defined not only by the frequency of use but also by the individual's loss of control over this use, neglected areas of life, and withdrawal symptoms. In this context, gender is not a sole determinant but interacts with context and individual tendencies.

In conclusion, the findings of this study reveal that gender does not have a universal and direct effect on smartphone addiction; rather, this relationship is shaped within a complex and multifactorial structure. In future research, it is important to consider the socio-cultural context, individual psychological factors, and types of digital media together to understand the effects of gender. On the other hand, it is noteworthy that studies reporting gender differences are relatively old, while studies reporting no gender differences were conducted relatively recently. This detail suggests that increasing digitalization may have contributed to a decrease in differences in the socialization characteristics of women and men and an increase in similarities in their social and emotional needs.

The present study found no significant gender difference in academic procrastination, aligning with several prior findings. For instance, Samson (2020) emphasized that procrastination is more strongly influenced by academic self-efficacy and coping strategies than by gender. Similarly, Solomon and Rothblum (1984), in their foundational study, observed no systematic pattern of gender-based procrastination tendencies, highlighting the central role of individual cognitive and motivational factors.

However, other studies suggest a different pattern. Balkıs and Duru (2017) reported that male students are more likely to procrastinate than females, and that this tendency negatively affects academic satisfaction and performance. They linked this to lower levels of self-regulation and time management in males. Supporting this, a large-sample study by Balkıs, Duru, Buluş, and Duru (2006) also found that male students showed higher levels of procrastination. These contrasting findings may be shaped by academic task demands, personal coping styles, and the

influence of gender roles. On the other hand, Ghosh and Roy's (2017) study presents one of the important findings that reverses the dominant trend in the literature. In their study with university students in India, the researchers found that female students exhibited higher levels of academic procrastination behavior than males. This suggests the influence of cultural context; particularly in developing societies, women may be more prone to procrastinate due to educational expectations, social pressures, or role conflicts.

The existence of these differing results indicates that gender alone is not a sufficient explanatory variable for academic procrastination behavior. This situation can be better understood through psychological theories such as Social Cognitive Theory (Bandura, 1986) and Expectancy-Value Theory (Eccles & Wigfield, 2002). According to Social Cognitive Theory, individuals' behaviors are influenced not only by their internal characteristics but also by their social environment and learning processes through observation. Therefore, the effect of gender may vary depending on how gender roles are structured in the environment in which the individual was raised.

The Expectancy-Value Theory argues that individual factors such as the meaningfulness of academic tasks, expectations of success, and perceptions of self-efficacy can be decisive in procrastination behavior. Female and male students may differ in how they evaluate the outcomes of tasks; however, this difference may not always be observed at a statistically significant level.

Taken together, these results suggest that while gender may influence procrastination in certain contexts, it is not a universal determinant. The current study contributes to this literature by reinforcing the idea that academic procrastination is better understood through the lens of psychological and contextual variables rather than gender alone.

Another finding of the study revealed that female participants exhibited higher levels of self-control compared to male participants. The relationship between self-control and gender has long been discussed in the literature (Gibson et al., 2010; Jo & Bouffard, 2014). For example, Gibson et al. (2010) examined gender differences in self-control within the context of criminal behavior and found that when gender-biased items were removed from the scale, the difference between males and females dropped from 33% to 6%, indicating the potential influence of measurement bias. Similarly, Gibbs, Giever, and Martin (1998) investigated the role of parental management and concluded that effective parental supervision significantly contributed to the development of self-control in children. There are conflicting findings in the literature regarding gender and self-control. While Wang et al. (2017) reported higher self-control in male participants, other studies (Feyzioğlu, 2023; Yıldız Yıldırım, 2022) found no significant gender differences. However, a larger group of studies indicates that females tend to exhibit higher self-control (Cheung & Cheung, 2010; Ercoşkun, 2016; Gibson, Ward, Wright, Beaver, & Delisi, 2010; Higgins, 2007; Silverman, 2003). For example, Lynskey, Winfree, Esbensen, and Clason (2000) found that parental monitoring—knowing the child's whereabouts—was the strongest predictor of self-control, and that girls received more monitoring than boys. This supports the view that higher self-control in females may stem from early socialization processes rather than inherent gender traits. Moreover, they also noted that low self-control is more closely linked to holding central positions in gangs, which were predominantly occupied by males.

In the literature, there is evidence indicating that as daily smartphone usage time increases, individuals' levels of smartphone addiction also tend to rise (Kumcağız, Terzi, Koç, & Terzi, 2020; Güngör & Koçak, 2020; Bal & Balcı, 2020). Moreover, research findings have shown that an increase in the frequency of checking one's smartphone is significantly associated with higher

levels of smartphone addiction (Noyan, Enez-Darçın, Nurmedov, Yılmaz, & Dilbaz, 2015; Yılmaz, Gökdere-Çınar, & Özyazıcıoğlu, 2017). In our study, similar results were obtained, but it also allowed for more specific determinations. The research questions developed regarding how daily smartphone usage times and frequency of checking affect smartphone addiction were answered through ANOVA analysis findings. Additionally, important clues were obtained regarding what the for risky usage time/checking frequency could be, going a step further than the correlational findings in the literature: It was determined that the smartphone addiction scores were significantly higher in participants who used their smartphones for 4 hours or more per day compared to those who used them for less than 3 hours. A similar significant difference seems to be valid for participants who use their smartphones for 7 hours or more per day. The significance of this finding summarized as follows: having an average daily usage time of 4 hours or more poses a risk for an individual's smartphone addiction. Similarly, exceeding 3 hours of smartphone usage can also be considered a signal that the individual's self-control may weaken and their tendency for academic procrastination may increase. It was found that checking a smartphone more than 20 times a day leads to significant differences in both individuals' levels of smartphone addiction and their tendencies toward academic procrastination. Regarding the weakening of self-control, checking smartphones 40 times or more a day can be evaluated as a significant signal.

In the relevant literature, it can be stated that studies conducted on smartphone addiction are limited due to it being a relatively new concept (Boyalı, 2020). In the study we conducted with university students, it was found that smartphone addiction is predicted by both academic procrastination and self-control, thus confirming our H1 and H2 hypotheses. Although there are few studies examining the three variables together, consistent findings have been reached with many studies conducted on the relevant variables. For instance, in Boyalı's (2020) study, which examined smartphone addiction as a mediating variable, the correlations among the variables were analyzed, and it was found that among university students, an increase in self-control was associated with decreases in both academic procrastination and smartphone addiction. On the other hand, a positive relationship was identified between smartphone addiction and academic procrastination in the same study, indicating that smartphone addiction has a partial mediating role between the other two variables.

In a study conducted by Akıncı (2021) to investigate the predictive relationships among problematic smartphone use, self-regulation, academic procrastination, and academic stress, it was found that individuals with higher self-regulation levels were less likely to develop smartphone addiction, while smartphone addiction was a significant positive predictor of academic procrastination. Similarly, Jung and Hang (2014), in a study with adolescent participants, found that smartphone addiction partially mediated the relationship between self-control and academic procrastination. This finding implies that low self-control may lead to smartphone addiction, which in turn may contribute to delays in fulfilling academic tasks. Supporting this, Yang, Asbury, and Griffiths (2019) found that problematic smartphone use predicted both academic procrastination and academic anxiety; additionally, low self-regulation was a predictor of problematic smartphone use, and poor self-control was associated with destructive academic outcomes such as procrastination and anxiety. Overall, the literature emphasizes the role of smartphone addiction as a predictor of academic procrastination. However, our study provides a different perspective by examining the reverse direction of this relationship. Specifically, it was found that academic procrastination significantly predicts smartphone addiction, suggesting that increased academic delays may elevate the risk of

developing smartphone addiction in university students. The correlational results obtained in this study align with existing literature. For instance, Çiftçi (2023) reported a statistically significant association between academic procrastination and smartphone addiction, indicating that higher levels of smartphone addiction tend to correspond with increased academic procrastination. The study by Liu et al. (2022), which focused on university students, revealed that increased dependence on smartphones was linked to a notable rise in academic procrastination behaviors. A review of the literature reveals that many other studies have produced similar findings (Güngör & Koçak, 2020; Baykan, Güneş, & Akşehirli-Seyfeli, 2020). Consistent with previous researches, the findings of this study support the notion that academic procrastination is moderately and positively associated with smartphone addiction. It was observed that as students' scores on the academic procrastination scale increased, their scores on the smartphone addiction scale also increased. This study clearly demonstrates that academic procrastination is not merely associated with, but significantly contributes to the development of smartphone addiction. Thus, addressing procrastination behaviors should be considered a central strategy in preventing smartphone addiction among university students.

The negative significant relationship obtained between smartphone addiction and self-control is supported by the literature (see Adiyatma, Mudjiran, & Afdal, 2020; Ding et al., 2022; Karaçorlu et al., 2019; Kendir, 2021). The inverse association suggests that individuals with lower self-control capacities are more prone to developing smartphone addiction. Supporting this, Cho et al. (2017) observed that heightened stress levels can impair self-control abilities, thereby increasing vulnerability to smartphone addiction. The current findings further underscore the role of self-control as a key protective factor against such behavioral dependence.

Findings in the literature suggest that increased daily smartphone usage time and more frequent device checking throughout the day may contribute to higher levels of smartphone addiction. In addition to obtaining similar findings in this study, presenting numerical data on the critical values of these behaviors related to smartphone addiction can be considered a unique aspect of this research. These values should be accepted as preliminary findings requiring verification and should be tested in future studies.

The findings of this study were obtained from a sample limited to university students, and it should be noted that their generalizability to the general population may be limited. Furthermore, since the data were collected within a cross-sectional design, it is not possible to establish causal relationships between variables. The fact that the research data were obtained through self-reporting raises the possibility that factors such as participants' social desirability tendencies and recall biases may have influenced the results. Furthermore, the fact that some potential confounding variables (e.g., individuals' psychological resilience levels, social support resources, or academic stress levels) were not measured can be considered another factor limiting the scope of the findings. Future research should use longitudinal designs to examine such relationships in greater depth, revealing changes over time and cause-and-effect relationships. Additionally, collecting more objective data through behavioral tracking techniques (e.g., real-time app usage data or digital diary entries) beyond self-report measures will enhance the reliability of the findings. In this context, the mediating or moderating roles of variables such as self-control, digital awareness, academic self-efficacy, and emotional regulation should be tested in detail. This will allow for a more accurate explanation of how gender differences emerge under specific conditions and through which psychological mechanisms, rather than focusing solely on their direct effects.

Despite all these limitations, it should not be forgotten that smartphone use may pose a potential risk of addiction not only for university students but also for individuals of different age groups. Therefore, future research that takes developmental differences into account and works with multiple age groups, including childhood, adolescence, and adulthood, will provide a more comprehensive perspective for both diagnostic and preventive interventions.

REFERENCES

Adams, S. K., & Kisler, T. S. (2013). Sleep quality as a mediator between technology-related sleep quality, depression, and anxiety. Cyberpsychology, Behavior, and Social Networking, 16(1), 25–30.

Adiyatma, R., Mudjiran, M., & Afdal, A. (2020). The contribution of self-control towards students smartphone addiction. Schoulid: Indonesian Journal of School Counseling, 1(5), 45-49.

Ajayi, O. S. (2020). Academic self-efficacy, gender and academic procrastination. Epiphany. Journal of Transdisciplinary Studies, 13(1), 75-84.

Akıncı, T. (2021). Determination of predictive relationships between problematic smartphone use, self-regulation, academic procrastination and academic stress through modelling. International Journal of Progressive Education , 17(1), 35-53.

Al-Barashdi, H. S., Bouazza, A., & Jabur, N. H. (2015). Smartphone addiction among university undergraduates: A literature review. Journal of Scientific Research & Reports, 4(3), 210-225.

Albursan, I., Al Qudah, M., Al-Barashdi, H., Bakhiet, S., Darandari, E., Al-Asqah, S. S., . . . Albursan, H. (2022). Smartphone addiction among university students in light of the COVID-19 pandemic: prevalence, relationship to academic procrastination, quality of life, gender and educational stage. International Journal of Environmental Research and Public Health, 19(16), 1-15.

Augner, C., & Hacker, G. W. (2011). Associations between problematic mobile phone use and psychological parameters in young adults. International Journal of Public Health, 57(2), 437–441.

Aygün, N., & Topkaya, N. (2022). Akademik erteleme ve akademik mükemmeliyetçilik ile psikolojik iyi oluş arasındaki ilişkinin incelenmesi. Mehmet Akif Üniversitesi Eğitim Fakültesi Dergisi(61), 189-208.

Bal, E., & Balcı Ş. (2020). Akıllı cep telefonu bağımlılığı: Kişilik özellikleri ve kullanım örüntülerinin etkinliği üzerine bir inceleme. Erciyes İletişim Dergisi, 7(1), 369-394.

Balkıs, M., & Duru, E. (2009). Akademik erteleme davranışının öğretmen adayları arasındaki yaygınlığı, demografik özellikler ve bireysel tercihlerle ilişkisi. Eğitimde Kuram ve Uygulama, 5(1), 18-32.

Balkıs, M., & Duru, E. (2017). Gender differences in the relationship between academic procrastination, satifaction with academic life and academic performance. Electronic Journal of Research in Educational Psychology, 15(1), 105-125.

Balkıs, M., Duru, E., Buluş, M., & Duru, S. (2006). Üniversite öğrencilerinde akademik erteleme eğiliminin çeşitli değişkenler açısından incelenmesi. Ege Eğitim Dergisi, 7(2), 57-73.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Baykan, Z., Güneş, H., & Akşehirli- Seyfeli M. Y. (2021). Erciyes Üniversitesi Tıp Fakültesi öğrencilerinde akıllı telefon bağımlılığı ile akademik erteleme ve akademik başarı arasındaki ilişki. Tıp Eğitimi Dünyası, 20(61), 119-134.

Beck, B. L., Koons, S. R., & Milgrim, D. L. (2000). Correlates and consequences of behavioral procrastination: The effects of academic procrastination, self-consciousness, self-esteem and self-handicapping. Journal of social behavior and personality, 15(5), 3.

Bolbolian, M., Asgari, S., Sefidi, F., & Zadeh, A. S. (2021). The relationship between test anxiety and academic procrastination among the dental students. Journal of Education and Health Promotion, 10.

Boyalı, C. (2020). Öz kontrol ile akademik erteleme arasındaki ilişkide alıllı telefon bağımlılığının aracı rolünün incelenmesi.

Brand, M., Wegmann, E., Stark, R., Müller, A., Wölfling, K., Robbins, T. W., & Potenza, M. N. (2022). The Interaction of Person-Affect-Cognition-Execution (I-PACE) model of addictive behaviors: Update, implications, and future directions*. Journal of Behavioral Addictions*, 11(1), 1–16. https://doi.org/10.1556/2006.2022.00001

Büyüköztürk, Ş. (2011). Sosyal bilimler için veri analizi el kitabı: İstatistik, araştırma deseni, SPSS uygulamaları ve yorum (15. baskı). Ankara: Pegem Akademi.

Bytamar, J. M., Omid , S., & Khakpoor, S. (2020). Emotion regulation difficulties and academic procrastination . Frontiers in Psychology, 11(524588), 1-9.

Chaplin, T. M., & Aldao, A. (2013). Gender differences in emotion expression in children: A meta-analytic review. *Psychological Bulletin*, *139*(4), 735–765. https://doi.org/10.1037/a0030737

Chen, B., Liu, F., Ding, S., Ying, X., Wang, L., & Wen, Y. (2017). Gender differences in factors associated with smartphone addiction: a cross-sectional study among medical college students. BMC Psychiatry, 17, 1-9.

Chen, Y. C., Wang, S., & Sun, Y. (2021). Persuasive system design and consumer engagement in smartphone use: A pathway to digital addiction? Telematics and Informatics, 60, 101563. https://doi.org/10.1016/j.tele.2021.101563

Cheung, N.W. ve Cheung, Y.W. (2010). Strain, self-control and gender differences in delinquency among chinese adolescents: Extending general strain theory. Sociological Perspectives, 53(3), 321-345. https://doi.org/10.1525/sop.2010.53.3.32

Cho, H.-Y., Kim, D., & Park, J. (2017). Stress and adult smartphone addiction: Mediation by self-control, neuroticism, and extraversion. Stress and Health, 33(5), 624-630.

Choliz, M. (2012). Mobile-phone addiction in adolescence: the test of mobile phone dependence (TMD). Progress in Health Sciences, 2(1), 33-44.

Chun Chu, A. H., & Choi, J. N. (2005). Rethinking procrastination: positive effects of "active" procrastination behavior on attitudes and performance. The Journal of Social Psychology, 145(3), 245–264.

Claesdotter-Knutsson, E., André, F., Fridh, M., Delfin, C., Hakansson, A., & Lindström, M. (2021). Gender-based differences and associated factors surrounding excessive smartphone use among adolescents: Cross-sectional study. JMIR pediatrics and parenting, 4(4), e30889.

Çiftçi, İ. (2023). Akıllı telefon bağımlılığı ve akademik erteleme: Spor bilimleri öğrencileri üzerine bir araştırma. Yalova Üniversitesi Spor Bilimleri Dergisi, 2(3), 245-257.

Da Lama, R. G. F., & Brenlla, M. E. (2024). Why people think they procrastinate? A study on adults from Buenos Aires with the General Procrastination Scale. Psychology Hub, 41(1)

Ding, Y., Wan, X., Lu, G., Huang, H., Liang, Y., Yu, J. ve Chen, C. (2022). The associations between smartphone addiction and self-esteem, self-control, and social support among Chinese adolescents: A meta-analysis. Frontiers in Psychology, 13(1029323). doi:10.3389/fpsyg.2022.102932

Eagly, A. H. (1987). Sex Differences in Social Behavior: A Social-role Interpretation. Hillsdale, NJ: Erlbaum.

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, *53*(1), 109–132.

Eisenbeck, N., Carreno, D. F., & Uclés-Juárezb, R. (2019). From psychological distress to academic procrastination: Exploring the role of psychological inflexible. Journal of Contextual Behavioral Science, 13, 103-108.

Elhai, J., Dvorak, R., Levine, J., & Hall, B. (2017). A conceptual overview and systematic review of relations with anxiety and depression psychopathology. Journal of Affective Disorders, 207, 251-259.

Else Quest, N. M., Hyde, J. S., Goldsmith, H. H., & Van Hulle, C. A. (2006). Gender differences in temperament: A meta-analysis. *Psychological Bulletin*, *132*(1), 33–72. https://doi.org/10.1037/0033 2909.132.1.33

Ercoşkun, M. H. (2016). Adaptation of self-control and self-management scale (SCMS) into Turkish culture: A study on reliability and validity. Educational Sciences: Theory & Practice, 16(4), 1125-1145. https://doi.org/10.12738/estp.2016.4.2725

Ferrari, J. R., Keane, S. M., Wolfe, R. N., & Beck, B. L. (1998). The antecedents and consequences of academic excuse-making: Examining individual differences in procrastination. Research in higher education, 39, 199-215.

Ferrari, J., Uzun Özer , B., & Leblanck, S. (2020). Relationship between academic procrastination and self-control the mediational role of self-esteem. College Student Journal, 54(3), 309-316.

Feyzioğlu, F. (2023). Ertelemenin yordayıcıları olarak öz kontrol ile stresle başa çıkmanın incelenmesi. (Yüksek Lisans Tezi). Ulusal Tez Merkezi. (822625).

Ford, J. A., & Blumenstein, L. (2013). Self-control and substance use among college students. Journal of Drug Issues, 43(1), 56-68.

Geng, Y., Gu, J., Wang, J., & Zhang, R. (2021). Smartphone addiction and depression, anxiety: The role of bedtime procrastination and self-control. Journal of Affective Disorders, 293, 415-421.

Ghosh, R., & Roy, S. (2017). Relating multidimensional perfectionism and academic procrastination among Indian university students. Gender in Management: An International Journal, 32(8), 518–534. doi:10.1108/gm-01-2017-0011

Gibbs, J. J., Giever, D., & Martin, J. S. (1998). Parental management and self-control: an empirical test of gottfredson and hirschi's general theory. Journal of Research in Crime and Delinquency, 35(1), 40–70. doi:10.1177/0022427898035001002

Gibson, C. L., Ward, J. T., Wright, J. P., Beaver, K. M., & Delisi, M. (2010). Where does gender fit in the measurement of self-control? Criminal Justice and Behavior, 37(8), 883–903. doi:10.1177/0093854810369082

Griffiths, M. D. (1995). Technological addictions. Clinical Psychology Forum, 76, 14-19. Division of Clinical Psychology of the British Psychol Soc.

Griffiths, M. D. (1996). Gambling on the internet: A brief note. Journal of Gambling Studies, 12(4), 471-473.

Gustavson, D. E., & Miyake, A. (2017). Academic procrastination and goal accomplishment: A combined experimental and individual differences investigation. Learning and individual differences, 54, 160-172. https://doi.org/10.1016/j.lindif.2017.01.010

Güneş, E. (2018). *Zorbalık eğilimi, duygusal özerklik ve akıllı telefon bağımlılığı arasındaki ilişkinin incelenmesi.* (Yüksek Lisans Tezi, İstanbul Sabahattin Zaim Üniversitesi, İstanbul). Erişim adresi https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Güngör, A. B., & Koçak, O. (2020). Üniversite öğrencilerinin akıllı telefon bağımlılığı ve akademik erteleme davranışı arasındaki ilişkinin incelenmesi. Eğitim ve Toplum Araştırmaları Dergisi, 7(2), 397-419.

Hanphitakphong, P., Keeratisiroj, O., Thawinchai, N. (2021). Smartphone addiction and its association with upper body musculoskeletal symptoms among university students classified by age and gender. Journal of physical therapy science, 33(5), 394-400.

Hawi, N., & Samaha, M. (2016). To excel or not to excel: Strong evidence on the adverse effect of smartphone addiction on academic performance. Computers & Education, 98, 81-89.

Hefner, D., Knop, K., & Vorderer, P. (2018, January). "I wanna be in the loop!"–the role of fear of missing out (fomo) for the quantity and quality of young adolescents' mobile phone use. ın youth and media. 39-54. Nomos Verlagsgesellschaft mbH & Co. KG.

Higgins, G. E. (2007). Examining the Original Grasmick Scale. Criminal Justice and Behavior, 34(2), 157–178. doi:10.1177/0093854806290071

Hirschi, T., & Gottfredson, M. (1988). Towards a general theory of crime. In Explaining criminal behaviour. 8-26.

Hofmann, W., Luhmann, M., Fisher, R. R., Vohs, K. D., & Baumeister, R. F. (2013). Yes, but are they happy? effects of trait self-control on affective well-being and life satisfaction. Journal of Personality, 82(4), 265–277.

Iftikhar, A., Liaquat, A. W., & Shahid, H. (2022). Mediating effect of academic amotivation between smartphone addiction and academic procrastination among university students. Online Media and Society, 3, 202-212.

Jenaro, C., Flores, N., Vela, M., & Gonzalez Gil, F. (2007). Problematic internet and cell-phone use: Psychological, behavioral, and health correlates. Addiction Research & Theory, 15(3), 309-320.

Jo, Y., & Bouffard, L. (2014). Stability of self-control and gender. Journal of Criminal Justice, 42(4), 356-365.

Jung, E. J., & Han, Y. J. (2014). The effect of adolescents' time perspective and self-control on academic procrastination: The mediating effect of cellular phone addiction. Korean Journal of Child Studies, 35(1), 119-133.

Kalecik, S. (2016). *Problemli internet ve akıllı telefon kullanımına ilişkin olarak duygu düzenleme, öz-denetim, yenilik arayışı, depresyon ve sosyal kaygı semptomları* (Yüksek Lisans Tezi. Bahçeşehir Üniversitesi İstanbul). Erişim adresi https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Karaçorlu, F. N., Oğuzöncül, A. F., Pirinçci, E., & Deveci, S. E. (2019). Üniversite öğrencilerinde akıllı telefon bağımlılığı ile öz kontrol ve algılanan stres ilişkisi. 3. Uluslararası 21. Ulusal Halk Sağlığı Kongresi'nde sunulmuştur. Antalya, Türkiye.

Karakaya, E. (2021). COVID-19 sürecinde eğitimine evde devam eden ortaöğretim öğrencilerinin teknoloji bağımlılığı düzeylerinin incelenmesi.

Kendir, S. (2021). Üniversite hazırlık sınıfı öğrencilerinde öz denetim, dürtüsellik, akıllı telefon bağımlılığı ve obezite arasındaki ilişkinin incelenmesi.(Yüksek Lisans Tezi). Ulusal tez merkezi. (657998).

Khan, M., Arif, H., Sumbul Noor, S., & Muneer, S. (2014). Academic procrastination among male and female university and college students. FWU Journal of Social Sciences, 8(2), 65-70.

Khang, H., Kim, J. K., & Kim, Y. (2013). Self-traits and motivations as antecedents of digital media flow and addiction: The Internet, mobile phones, and video games. Computers in human behavior, 29(6), 2416-2424.

Kim, H., Choi, I. Y., & Kim, D. J. (2020). Excessive smartphone use and self-esteem among adults with internet gaming disorder: quantitative survey study. JMIR mHealth and Health, 8(9), e18505.

Kumcağız, H., Terzi Ö., Koç, B., & Terzi M. (2020). Üniversite öğrencilerinde akıllı telefon bağımlılığı. İnsan ve Toplum Bilimleri Araştırmaları Dergisi, 9(1), 13-39.

Kuyucu, M. (2017). Gençlerde akıllı telefon kullanımı ve akıllı telefon bağımlılığı sorunsalı:"Akıllı telefon (kolik)" üniversite gençliği. Global Media Journal TR Edition, 7(14), 328-359.

Kwon, M., Kim, D. J., Cho, H., & Yang, S. (2013). The smartphone addiction scale: development and validation of a short version for adolescents. PloS one, 8(12), e83558.

Laricchia, F. (2024, Ağustos, 2).Smartphone penetration worldwide as share of global population 2016-2023. Statista. https://www.statista.com/statistics/203734/global-smartphone-penetration-per-capita-since-2005/#:~:text=Smartphone%20penetration%20worldwide%20as%20share%20of%20global%20population%202016%2D2023&text=The%20global%20smartphone%20penetration%20rate,population%20of%20around%207.4%20billion.

Lee, E. J., & Kim, H. S. (2018). Gender differences in smartphone addiction behaviors associated with parent–child bonding, parent–child communication, and parental mediation among Korean elementary school students. Journal Of Addictions Nursing, 29(4), 244-254.

Li, C., Hu, Y., & Ren, K. (2022). Physical activity and academic procrastination among Chinese university students: A parallel mediation model of self-control and self-efficacy. 19(10), 1-9.

Li, L., Gao, H., & Xu, Y. (2020). The mediating and buffering effect of academic self-efficacy on the relationship between smartphone addiction and academic procrastination. Computers and Education , 159, 1-11.

Li, S., Ren, P., Chiu, M., Wang, C., & Lei, H. (2021). The relationship between self-control and internet addiction among students: A meta-analysis. Frontiers in Psychology, 12, 735-755.

Lin, Y.-H., Chiang, C.-L., Lin, P.-H., Chang, L.-R., Ko, C.-H., Lee, Y.-H., & Lin, S.-H. (2016). Proposed diagnostic criteria for smartphone addiction. PloS One, 11(11), 1-11.

Liu, F., Xu, Y., Yang, T., Li, Z., Dong, Y., Chen, L., & Sun, X. (2022). The mediating roles of time management and learning strategic approach in the relationship between smartphone addiction and academic procrastination. Psychology Research and Behavior Management, 2639-2648.

Lynskey, D. P., Winfree Jr, L. T., Esbensen, F. A., & Clason, D. L. (2000). Linking gender, minority group status and family matters to self-control theory: A multivariate analysis of key self-control concepts in a youth-gang context. Juvenile and Family Court Journal, 51(3), 1-19.

Matar Boumosleh, J., & Jaalouk, D. (2017). Depression, anxiety, and smartphone addiction in university students-A cross sectional study. PloS one, 12(8), e0182239.

Matthews, J. S., Ponitz, C. C., & Morrison, F. J. (2009). Early gender differences in self-regulation and academic achievement. *Journal of Educational Psychology, 101*(3), 689–704. https://doi.org/10.1037/a0014240

Mehta, R. (2010). Exploring self-control: Moving beyond depletion hypothesis. Advances in Consumer Research, 37, 174-178.

Milgram, N., Mey-Tal, G., & Levison, Y. (1998). Procrastination, generalized or specific, in college students and their parents. Personality and Individual Differences, 25(2), 297-316.

Mischel, W. (1996). From good intentions to willpower.

Mitchell, L., & Hussain, Z. (2018). Predictors of problematic smartphone use: An examination of the integrative pathways model and the role of age, gender, impulsiveness, excessive reassurance seeking, extraversion, and depression. Behavioral Sciences, 8(8), 74.

Moattari, M., Moattari, F., Kaka, G., Kouchesfahani, H. M., Sadraie, S. H., & Naghdi, M. (2017). Smartphone addiction, sleep quality and mechanism. International Journal of Cognition and Behavior, 1(002), 1-7.

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., … Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. Proceedings of the National Academy of Sciences, 108(7), 2693–2698.

Montag, Montag, C., Wegmann, E., Sarıyska, R., Demetrovics, Z., & Brand, M. (2020). How to overcome taxonomical problems in the study of internet use disorders and what to do with smartphone addiction? Journal of Behavioral Addiction, 9(4), 908-914.

Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? Psychological Bulletin, 126(2), 247–259.

Nebioglu, M., Konuk, N., Akbaba, S., & Eroglu, Y. (2012). The investigation of validity and reliability of theTurkish version of the brief self-control scale. Klinik Farmokoloji Bülten-Bulletin of Clinical Psychopharmacology, 22(4), 340-351.

Nofziger, S. (2010). A gendered perspective on the relationship between self-control and deviance. *Feminist Criminology, 5*(1), 29–50. https://doi.org/10.1177/1557085109357594

Noyan, C. O., Enez-Darçın, A., Nurmedov, S., Yılmaz, O., & Dilbaz, N. (2015). Akıllı telefon bağımlılığı ölçeğinin kısa formunun üniversite öğrencilerinde Türkçe geçerlilik ve güvenilirlik çalışması. Anadolu Psikiyatri Dergisi, 16, 73-81.

Onwuegbuzie, A. J. (2004). Academic procrastination and statistics anxiety. Assessment and Evaluation in Higher Education, 29(1), 3-19.

Özdemir, Y., Kuzucu, Y., & Ak, Ş. (2014). Depression, loneliness and Internet addiction: How important is low self-control?. Computers in Human Behavior, 34, 284-290.

Özer, B. U., Demir, A., & Ferrari, J. R. (2009). Exploring academic procrastination among turkish students: possible gender differences in prevalence and reasons. The Journal of Social Psychology, 149(2), 241–257. doi:10.3200/socp.149.2.241-257

Özer, B. U, Leblanc, S. and Ferrari, J. (2020) Relationship between academic procrastinaton and self-control: the mediational role of self-esteem. College Student Journal, 54, 309-316.

Öztürk-Başpınar, N., (2020). Üniversite öğrencilerinin genel erteleme davranışları ile akademik erteleme davranışları arasındaki ilişki. Journal of Turkish Studies, 15(2), 1197-1219.

Paschke, L. M., Dörfel, D., Steimke, R., Trempler, I., Magrabi, A., Ludwig, V. U., … Walter, H. (2016). Individual differences in self-reported self-control predict successful emotion regulation. Social Cognitive and Affective Neuroscience, 11(8), 1193–1204. doi:10.1093/scan/nsw036

Pearson, C., & Hussain, Z. (2016). Smartphone addiction and associated psychological factors. Addicta: The Turkish Journal of Addictions, 3(2), 1-15.

Powers, J. P., Moshontz, H., & Hoyle, R. H. (2020). Self-control and affect regulation styles predict anxiety longitudinally in university students. Collabra: Psychology, 6(1), 1-14.

Puspitasari, I., & Lee, J. (2022). Dark patterns in immersive technologies: A review of persuasive designs in AR/VR platforms. *Behaviour & Information Technology, 41*(10), 2163–2176. https://doi.org/10.1080/0144929X.2022.2043705

Qaisar, S., Akhter, N., Masood, A. & Rashid, S. (2017). Problematic mobile phone use, academic procrastination and academic performance of college students. Journal of Educational Research, 20(2), 201-214.

Rose, A. J., & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. Psychological Bulletin, 132(1), 98–131. https://doi.org/10.1037/0033-2909.132.1.98

Rosenbaum, M. (1980). Individual differences in self-control behaviors and tolerance of painful stimulation. Journal of Abnormal Psychology, 89(4), 581–590. doi:10.1037/0021-843x.89.4.581

Rothblum, E. D., Solomon, L. J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. Journal of Counseling Psychology, 33(4), 387-394.

Samson, A. O., (2020). Academic self-efficacy, gender and academic procrastination. Epiphany. Journal of Transdisciplinary Studies, 13(1), 75-84.

Shoenberger, N. A., & Rocheleau, G. C. (2017). Effective parenting and self-control: Difference by gender. *Women & Criminal Justice, 27*(5), 271–286. https://doi.org/10.1080/08974454.2016.1261071

Silverman, I. W. (2003). Gender differences in delay of gratification: A meta-analysis. Sex Roles, 49, 451-463.

Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: frequency and cognitive behavioral correlates. Journal of Counseling Psychology, 31(4), 503-509.

Steel, P. (2007). The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure. Psychological bulletin, 133(1), 65.

Steel, P., & Klingsieck, K. B. (2016). Academic procrastination: Psychological antecedents revisited. Australian Psychologist, 51(1), 36-46.

Tabachnick, B. G. ve Fidell, L. S. (2013). Using multivariate statistics. Boston: MA Pearson

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. Journal of Personality, 72(2), 271-324.

Ting, C. H., & Chen, Y. Y. (2020). Smartphone addiction. In adolescent addiction. 215-240. Academic Press.

Ulukaya, S. ve Bilge, F. (2014) Üniversite öğrencilerinde Akademik Ertlemenin Yordayıcıları Olarak Aile Bağlamında Benlik ve Ana-Baba Tutumları. Turkish Psychological Counseling and Guidance Journal, 5(41), 89-102. https://doi.org/10.17066/pdrd.63183

Urfalıoğlu, Ş., & Tunalı, D. (2023). Akademik erteleme ve akademik yaşam doyumunun akıllı telefon bağımlılığı ile ilişkisi. Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi, 13(4), 2334-2346.

Uslu, O. (2022). Causes and consequences of technology addiction: A systematic review. *Addicta: The Turkish Journal on Addictions, 9*(2), 345–360. https://doi.org/10.5152/addicta.2022.21078

Uzun Özer, B. R. (2005). Academic Procrastination: Prevalence, Self-reported reasons, gender difference and it's relation with academic achievement (Master's thesis, Middle East Technical University).

Uzun Özer, B. (2009). Academic procrastination in group of high school students: Frequency, possible reasons and role of hope. Turkish Psychological Counseling and Guidance Journal, 4(32), 12-19.

Uzun Özer, B., Demir, A., & Ferrari, J. R. (2009). Exploring academic procrastination among Turkish students: Possible gender differences in prevalence and reasons. The Journal of Social Psycology, 149(2), 241-257.

Uzun Özer, B., LeBlanc, S., Ferrari, J. R. (2020). Relationship between academic procrastination and self-control: the mediational role of self-esteem. College Student Journal, 54(3), 309-316.

Wang, L., Fan, C., Tao, T., & Gao, W. (2017). Age and gender differences in self-control and its intergenerational transmission. Child: care, health and development, 43(2), 274-280.

Wanless, S. B., McClelland, M. M., Lan, X., Son, S.-H., Cameron, C. E., Morrison, F. J., Li, S., Wu, X., & Acock, A. C. (2013). Gender differences in behavioral regulation in four societies: The United States, Taiwan, South Korea, and China. *Early Childhood Research Quarterly, 28*(3), 621–633. https://doi.org/10.1016/j.ecresq.2013.04.002

Wu, Y. Y., & Chou, W. H. (2023). A bibliometric analysis to identify research trends in intervention programs for smartphone addiction. International Jorunal of Environmental Research and Public Health, 20(5), 1-16.

Yang, Z., Asbury, K., & Griffiths, M. D. (2019). An exploration of problematic smartphone use among Chinese university students: Associations with academic anxiety, academic procrastination, self-regulation and subjective wellbeing. International Journal of Mental Health and Addiction, 17, 596-614.

Yanık, A. & Özçiçek, S. (2021). "Akıllı telefon bağımlılığında sosyal medya ve oyunların etkilerini anlamak". Uluslararası Halkbilimi Araştırmaları Dergisi, 4(7), 177-192.

Yıldız-Yıldırım, A. (2022). Ebeveynleşme olgusunun bedensel belirtiler, stresle başa çıkma tarzları ve öz kontrol ile ilişkisinin incelenmesi. (Yüksek lisans tezi). Ulusal Tez Merkezi. (783712)

Yılmaz, D., Çinar, H. G., & Özyazıcıoğlu, N. (2017). Hemşirelik öğrencilerinde akıllı telefon ve internet bağımlılığı ile üst ekstremite fonksiyonel aktivite düzeyleri arasındaki ilişkinin incelenmesi. Süleyman Demirel Üniversitesi Sağlık Bilimleri Dergisi, 8(3), 34-39.

Zacks, S., & Hen, M. (2018). Academic interventions for academic procrastination: A review of the literature. Journal of Prevention & İntervention in The Community, 46(2), 117-130. https://doi.org/10.1080/10852352.2016.1198154

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