



Geliş Tarihi (Received): 10/11/2025

Kabul Tarihi (Accepted): 25/12/2025

Yaşam Becerileri Psikoloji Dergisi-Life Skills Journal of Psychology, 2025; 9(2), 133-155.

## Mediating Role of Experiential Avoidance in The Relationship Between Attachment Styles and Smartphone Addiction: A Network Analysis

*Bağlanma Stilleri ile Akıllı Telefon Bağımlılığı Arasındaki İlişkide Yaşantısal Kaçınmanın Aracı Rolü: Network Analizi*

Gülşah Balaban,<sup>1</sup> Yusuf Bilge<sup>2</sup>

10.31461/ybpd.1820856

### Abstract

This study aimed to examine the mediating role of experiential avoidance in the relationship between attachment styles and smartphone addiction, as well as to explore the interactions among these variables through a Gaussian partial correlation-based network analysis. The study sample consisted of 462 individuals aged between 18 and 64 years ( $M=36.01$ ,  $SD=12.99$ ), of whom 53.7% were female ( $n=248$ ) and 46.3% were male ( $n=214$ ). Data were collected using the Smartphone Addiction Scale-Short Form, the Attachment-Based Mental Representations Scale, and the Multidimensional Experiential Avoidance Questionnaire-30. Analyses included Independent Samples t-tests, Network Analysis (Gaussian Graphical Model), and mediation analyses using PROCESS Macro (Model 4). Gender comparisons revealed that women scored significantly higher than men in insecure attachment, behavioral avoidance, and distress aversion, while no significant differences were found in secure attachment or smartphone addiction scores. Network analysis results indicated that procrastination and distress aversion were the most central and predictive nodes in the network. Mediation analyses showed that procrastination mediated the relationship between secure attachment and smartphone addiction. Furthermore, both procrastination and distress aversion were found to mediate the relationship between insecure attachment and smartphone addiction. The findings suggest that smartphone addiction is closely related to attachment patterns and avoidance-based coping strategies. In this context, it is recommended that clinical and preventive interventions targeting smartphone addiction also focus on individuals' attachment patterns as well as their tendencies toward procrastination and distress avoidance.

**Key Words:** Attachment Styles, Experiential Avoidance, Smartphone Addiction

### Öz

Bu çalışmada, bağlanma stilleri ile akıllı telefon bağımlılığı arasındaki ilişkide yaşantısal kaçınmanın aracı rolünün ve bu değişkenler arasındaki etkileşimlerin Gaussian Kısmi Korelasyon Temelli Ağ Analizi ile incelenmesi hedeflenmiştir. Araştırmaya, yaşları 18 ile 64 arasında ( $Ort.=36.01$ ,  $SS=12.99$ ), %53.7'si kadın ( $n=248$ ) ve %46.3'ü erkek ( $n=214$ ) olmak üzere toplam 462 kişi katılmıştır. Veriler, Akıllı Telefon Bağımlılığı Ölçeği-Kısa Form, Bağlanma Temelli Zihinsel Temsiller Ölçeği ve Çok Boyutlu Yaşantısal Kaçınma Ölçeği-30 ile toplanmıştır. Analizlerde Bağımsız Örneklemeler t-testi, Ağ Analizi (Gaussian Grafiksel Model) ve PROCESS Macro (Model 4) Aracılık Analizleri kullanılmıştır. Cinsiyete göre yapılan karşılaştırma analizinde, kadınların güvensiz bağlanma, davranışsal kaçınma ve sıkıttan hoşlanmama düzeylerinin erkeklere göre anlamlı düzeyde yüksek olduğu, ancak güvenli bağlanma ve akıllı telefon bağımlılığı puanlarında anlamlı bir fark bulunmadığı belirlenmiştir. Ağ analizi sonucuna göre, erteleme ve sıkıttan kaçınma değişkenleri ağda en merkezi ve yordayıcı düğümler olarak öne çıkmıştır. Aracılık analizlerinde, güvenli bağlanma ile akıllı telefon bağımlılığı arasındaki ilişkide ertelemenin aracı rolü tespit edilmiştir. Güvensiz bağlanma ile akıllı telefon bağımlılığı arasındaki ilişkide ise hem erteleme hem de sıkıttan hoşlanmama değişkenlerinin aracı role sahip olduğu bulunmuştur. Bulgular, akıllı telefon bağımlılığının bağlanma örüntüleri ve kaçınma temelli başa çıkma stratejileriyle yakından ilişkili olduğunu göstermektedir. Bu doğrultuda, akıllı telefon bağımlılığına yönelik klinik ve önleyici müdahalelerde bireylerin bağlanma örüntülerinin yanı sıra, erteleme ve sıkıttan kaçınma davranışlarına odaklanılmasının faydalı olacağı düşünülmektedir.

**Anahtar Kelimeler:** Bağlanma Stilleri, Yaşantısal Kaçınma, Akıllı Telefon Bağımlılığı

<sup>1</sup>**Correspondence:** Gulsah Balaban, Istanbul Sabahattin Zaim University, E-Mail: sahquant@gmail.com

## Introduction

Smartphones, one of the fundamental indicators of the digital age, have led to radical changes in the way individuals communicate, access information, and interact socially (Loleska & Pop-Jordanova, 2021). This transformation, in addition to the conveniences provided by technological advancement (Kim & Park, 2019), has led to the emergence of new behavioral patterns that also affect the psychological functioning of individuals (Zhu, Li, & Zhang, 2025). Intensive smartphone use, which is particularly prevalent among young adults and adolescents (Fischer-Grote et al., 2019), has moved beyond being merely a means of communication and has begun to be central to processes of emotion regulation (Safaria et al., 2023; Shi et al., 2023), attention management (Herdi, 2022), and social bonding (Enez Darcin et al., 2016). At this point, the nature of the relationship that individuals establish with their smartphones has become a psychologically remarkable area of research (Mahapatra, 2019; Nikolic et al., 2023). To understand this psychological interaction, it is important to examine how the attachment styles individuals develop in their human relationships are reflected in the digital environment.

Attachment theory proposes that early caregiver-child bonds shape an individual's later relationships with others and the environment (Bretherton, 1992). Individuals with secure attachment can manage closeness and separation in a balanced manner, while those with insecure attachment may exhibit anxious or avoidant attitudes (Messina, Calvo, & Grecucci, 2023). Today, the smartphone is not just a tool but also an object to which individuals constantly access, attach emotional meaning, and perceive it as an extension of the self (Ross & Kushlev, 2025). Therefore, it is expected that an individual's early attachment patterns will be reflected in their relationship with their smartphone (Ding et al., 2022). While individuals with a secure attachment style use smartphones in a functional and controlled manner, individuals with an insecure attachment style may tend to overuse the phone, be unable to live without it, or use it as a means of refuge in times of stress (Kim, Cho, & Kim, 2017; Yuchang et al., 2017).

From this perspective, smartphone addiction may reflect an individual's search for internal security. In insecure attachment styles, people may turn to their phones to seek emotional support, approval, or a sense of belonging (Shi et al., 2023). While social media notifications, messaging apps, or online interactions may provide a short-term sense of relief and control, this can increase the risk of psychological dependence and emotional instability in the long term (Su & He, 2024). Studies reveal that excessive smartphone use is associated with low self-control (Kim et al., 2018), high anxiety (Nie, Wang, & Lei, 2020), loneliness (Safdar Bajwa et al., 2023), and procrastination (Zhou et al., 2024). These findings suggest that phone use may not only be a technological habit but also a psychological coping mechanism.

At this point, it can be said that another concept that may be closely related to the way individuals use smartphones is "experiential avoidance" (Gorday & Bardeen, 2022). Experiential avoidance describes an individual's tendency to avoid, suppress, or avoid these internal experiences when faced with negative emotions, thoughts, or physical experiences (Hayes-Skelton & Eustis, 2020). In other words,

when a person is exposed to a disturbing emotion, they avoid contact with the experience rather than accepting it. Although this avoidance may provide short-term relief, in the long term it can reduce stress tolerance (Williams, 2012), weaken psychological flexibility (Farr, Ononaiye, & Irons, 2021), and lead to various problems at the behavioral level (Hu et al., 2021).

Within the framework of acceptance and commitment therapy (ACT) theory, experiential avoidance is considered as a common explanatory mechanism for many psychological problems (Hayes et al., 2013). According to this approach, individuals try to control or suppress distressing internal experiences, and although this avoidance brings short-term relief, it ultimately reduces psychological flexibility and contributes to maladaptive patterns (Bardeen, 2015; Fernández-Rodríguez et al., 2022). Indeed, research in the field of addictions has shown that experiential avoidance is positively correlated with behaviors such as substance, alcohol, food, or internet addiction (Chou et al., 2017; Levin et al., 2012). These findings support the idea that individuals use addictive behaviors as a "relaxation strategy" to avoid disturbing internal experiences. Similarly, when it comes to technological addictions, experiential avoidance can be said to be an important predictor of both internet and video game addiction (Yi et al., 2025).

In this context, smartphone use can be considered one of the most common and accessible forms of experiential avoidance today. In stressful or anxiety-provoking situations, individuals turn to social media, check notifications to escape negative thoughts, or seek online interaction to suppress feelings of loneliness (Chen et al., 2025). In this context, the phone functions both as a "distraction" that provides relief from emotional distress and as an "escape object" that postpones confronting internal experiences. This cycle may reduce an individual's stress in the short term, but in the long term, it reinforces problematic phone use behavior, leading to loss of control, low awareness, and decreased psychological resilience (Abuhamdah & Naser, 2023). This pattern may also be closely related to individuals' attachment styles, as the ways people meet emotional needs and cope with stress can shape their avoidance tendencies in smartphone use (Ding et al., 2022).

It is known that there is a strong relationship between attachment styles and experiential avoidance. Individuals with insecure attachment tendencies may often turn to avoidance strategies to cope with emotional stress (Hatami Nejad et al., 2025). In this context, the smartphone can serve both as a tool that provides constant feelings of approval and connectedness for individuals with anxious attachment (Wang & Xuan, 2024) and as a refuge for avoidant individuals, enabling them to escape face-to-face interaction (Jin et al., 2023). Therefore, it can be said that experiential avoidance behaviors in smartphone use are not only a way of coping with stress or negative emotions, but also a process that varies depending on the functioning of the individual's attachment system (Sun & Miller, 2023). In this context, individuals with high attachment anxiety may seek relief through smartphones when faced with negative emotional experiences, thus becoming more prone to problematic use (Gritti et al., 2023).

In line with this theoretical framework, the current study aimed to examine the interactions between individuals' attachment styles and experiential avoidance tendencies with smartphone addiction. The network analysis method was chosen

to assess the relationships among these psychological constructs not only through linear relationships but also within a multivariate and interactive system. While traditional statistical methods often address linear relationships between variables, network analysis is an innovative approach that allows for the examination of the interactions between individual symptoms, strategies, or attitudes. This method treats psychopathological systems not as a whole, but as dynamic structures composed of interconnected components, enabling the identification of the most central or bridging elements within these structures (Epskamp & Fried, 2018). In the network structure created with this method, the strongest and most specific connections between variables are obtained (Robinaugh et al., 2016).

In this respect, the present study aimed to examine the relationships between individuals' attachment styles, experiential avoidance tendencies, and smartphone addiction on both a multivariate and interactive level. Thus, it is aimed to evaluate the psychological structures in question not only through linear connections but also through interconnected dynamic patterns. By providing a more holistic perspective on how attachment patterns and avoidance strategies relate to smartphone addiction, the findings are expected to contribute to the relevant literature and shed light on preventive and intervention-based practices in the field of mental health. In line with these objectives, the following hypotheses were proposed:

H1. Smartphone addiction has a negative relationship with secure attachment and, positive relationships with insecure attachment and experiential avoidance subdimensions.

H2. Experiential avoidance subdimensions have mediating roles in the relationships between attachment styles and smartphone addiction.

H3. There are gender-based differences in smartphone addiction, attachment styles and experiential avoidance subdimensions.

## Method

### Participants

A total of 462 individuals aged between 18 and 64 years ( $M=36.01$ ,  $SD=12.99$ ) participated in the study, of whom 53.7% ( $n=248$ ) were female and 46.3% ( $n=214$ ) were male. In terms of age groups, 30.1% ( $n=139$ ) of the participants were between 18-24 years old, 27.9% ( $n=129$ ) between 25-40 years old, and 42% ( $n=194$ ) between 41-60 years old.

Regarding marital status, 42% ( $n=194$ ) of the participants were single, 53% ( $n=245$ ) married, 3.9% ( $n=18$ ) divorced, and 1.1% ( $n=5$ ) widowed. In terms of education level, 17.3% ( $n=80$ ) had completed primary school, 18.8% ( $n=87$ ) high school, and 63.9% ( $n=295$ ) had a university degree or higher. Based on perceived economic status, the majority of participants reported a moderate income level (79.2%;  $n=366$ ), while 6.1% ( $n=28$ ) identified as low income and 14.7% ( $n=68$ ) as high income.

With respect to psychological help history, 29.2% (n=135) of participants reported having previously received psychological or psychiatric assistance, whereas 70.8% (n=327) had not. At the time of the study, 9.7% (n=45) were currently receiving psychological or psychiatric help, while 90.3% (n=417) were not. Additionally, 41.8% (n=193) of the participants stated that they felt a need for psychological support, while 58.2% (n=269) did not feel such a need.

Regarding smartphone use, 14.9% (n=69) of the participants reported checking their phones fewer than 10 times per day, 29.7% (n=137) 10-20 times, 23.6% (n=109) 20-30 times, 13.6% (n=63) 30-40 times, and 18.2% (n=84) more than 40 times a day. In terms of daily smartphone use duration, 9.5% (n=44) used their phones for less than one hour, 33.3% (n=154) for 1-2 hours, 35.3% (n=163) for 3-4 hours, and 21.9% (n=101) for more than five hours per day. The proportion of participants who described themselves as “smartphone addicted” was 35.9% (n=166), while 11% (n=51) responded “maybe,” 10.8% (n=50) reported “no opinion,” and 42.2% (n=195) stated that they were “not addicted.” (Table-1).

**Table-1. Demographic characteristics of participants**

		n	%
Gender	Female	248	53.7
	Male	214	46.3
Age Groups	18-24	139	30.1
	25-40	129	27.9
	41-60	194	42.0
Marital Status	Single	194	42.0
	Married	245	53.0
	Divorced	18	3.9
	Widowed	5	1.1
Education Level	Primary school	80	17.3
	High school	87	18.8
	University or higher	295	63.9
Economic Status	Low	28	6.1
	Middle	366	79.2
	High	68	14.7
Received psychological help before	Yes	135	29.2
	No	327	70.8
Currently receiving help	Yes	45	9.7
	No	417	90.3
Feels need for help	Yes	193	41.8
	No	269	58.2
Daily phone checks	Fewer than 10 times	69	14.9
	10-20 times	137	29.7

	n	%	
	20-30 times	109	23.6
	30-40 times	63	13.6
	More than 40 times	84	18.2
	Less than 1 hour	44	9.5
Daily phone usage time	1-2 hours	154	33.3
	3-4 hours	163	35.3
	More than 5 hours	101	21.9
	Not addicted	195	42.2
Self-evaluation of phone addiction	No opinion	50	10.8
	Maybe	51	11.0
	Addicted	166	35.9

## Measurement Tools

*Demographic Information Form:* In the study, a demographic information form prepared by the researcher was used, which included information about gender, age, education, marital status, economic status, and whether participants had received or felt the need for psychological or psychiatric help.

*Smartphone Addiction Scale-Short Form:* The Smartphone Addiction Scale-Short Form, developed to measure the risk of smartphone addiction (Kwon et al., 2013), consists of 10 items in a single-factor structure. The Turkish adaptation and reliability-validity study were conducted by Noyan et al. (2015). It is a six-point Likert-type self-report scale (1=strongly disagree, 6=strongly agree). The internal consistency of the scale was found to be Cronbach's alpha=.91. The total score ranges from 10 to 60, with higher scores indicating a higher risk of addiction. Only the total score is used in the evaluation.

*Attachment-Based Mental Representations Scale:* The Attachment-Based Mental Representations Scale, developed by Varlık Özsoy and Hisli Şahin (2023), is a scale designed for use in the field of clinical psychology to measure attachment-based mental representations in the Turkish population. The scale consists of 40 items, two main dimensions, and six subdimensions, scored on a five-point Likert-type scale. The subdimensions of positive father perception, positive mother perception, and positive self-perception represent the main dimension of secure attachment, whereas the subdimensions of negative self, negative father, and negative mother perceptions constitute the insecure attachment dimension. The Cronbach's alpha internal consistency coefficient of the scale was found to be .77. The coefficient was .85 for "Secure Attachment" and .83 for "Insecure Attachment." For the six subdimensions, internal consistency coefficients were as follows: positive mother perception=.81, negative mother perception=.83, negative father perception=.79, positive father perception=.86, positive self-perception=.72, and negative self-perception=.81.

*Multidimensional Experiential Avoidance Questionnaire-30:* The Multidimensional Experiential Avoidance Questionnaire-30 was developed by Sahdra et al. (2016) to identify the domains in which individuals behaviorally avoid certain experiences. The Turkish adaptation was conducted by Ekşi et al. (2018). The scale consists of 30 items and six subscales, each containing five items. The subscales are behavioral avoidance, distress aversion, procrastination, distraction/suppression, repression/denial, and distress endurance. It is a seven-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Subscale scores are calculated separately by summing the items within each subscale. Only item 15 is reverse-coded. Higher subscale scores indicate a higher level of experiential avoidance. Cronbach's alpha coefficients ranged between .76 and .87, indicating that the measurement tool is both valid and reliable.

### **Procedure and Data Analysis**

Ethical approval for the study was obtained from the Ethics Committee of Istanbul Sabahattin Zaim University on 16.02.2024 with the decision number 2024/01. An informed consent statement was presented at the beginning of the questionnaire, and participants were informed that their participation was voluntary and that they could withdraw from the study at any stage without penalty. The administration of the scales took approximately 20 minutes, and all data were collected anonymously and voluntarily through an online survey platform.

Prior to the main analyses, the assumptions of normality and homogeneity were examined. The results indicated that the data were normally distributed and appropriate for parametric analyses. To compare the variables according to gender, independent samples *t*-tests were performed.

To explore the complex correlational structure among attachment styles, smartphone addiction, and experiential avoidance components, a Gaussian Graphical Model (GGM) was estimated using the EBICglasso method with Least Absolute Shrinkage and Selection Operator (LASSO) regularization in the R "bootnet" and "qgraph" packages. This network approach allowed visualization of conditional dependencies among variables and identification of the most central and predictable nodes within the system.

Subsequently, a mediation analysis was conducted using Model 4 of the PROCESS Macro (Hayes, 2018) to test whether experiential avoidance subdimensions mediated the relationship between attachment styles and smartphone addiction. The six subdimensions (behavioral avoidance, distress aversion, procrastination, distraction/suppression, suppression/denial, and distress endurance) were entered as parallel mediators. Bootstrapping with 5,000 resamples was employed. All analyses were performed using SPSS version 25 and R version 4.3.3.

## **Results**

### **Gender-Based Comparison Analysis**

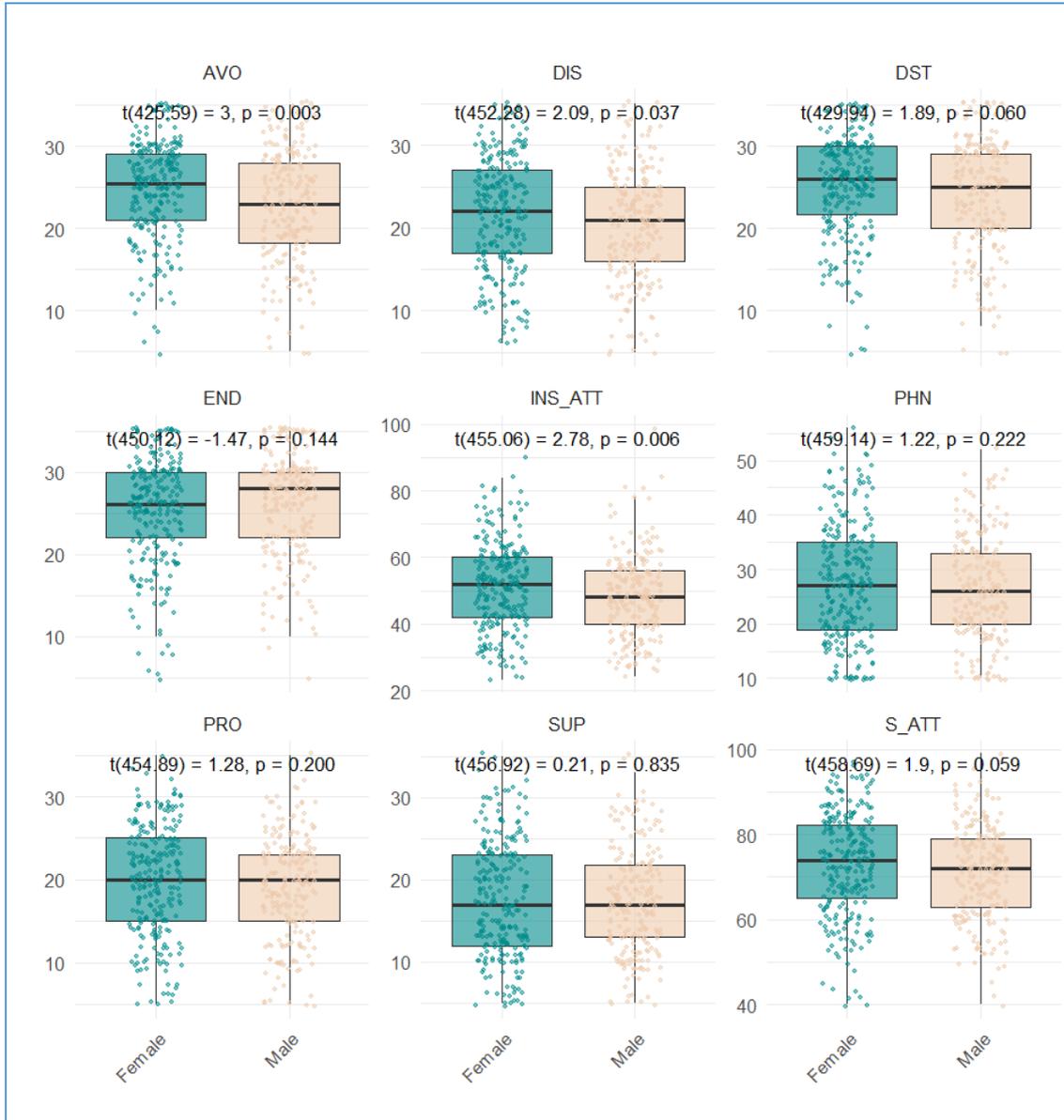
An independent samples *t*-test was conducted to examine gender differences across study variables. For smartphone addiction, the mean score of females ( $M=27.60$ ,  $SD=10.64$ ) was slightly higher than that of males ( $M=26.45$ ,  $SD=9.58$ ); however, this difference was not statistically significant ( $t(460)=1.22$ ,  $p=0.22$ ).

Regarding attachment dimensions, females scored higher on secure attachment ( $M=72.91$ ,  $SD=12.14$ ) compared to males ( $M=70.86$ ,  $SD=11.05$ ), and this difference approached but did not reach statistical significance ( $t(460)=1.88$ ,  $p=0.06$ ). A significant difference was found in insecure attachment, where females ( $M=51.54$ ,  $SD=12.91$ ) scored higher than males ( $M=48.27$ ,  $SD=12.35$ ), ( $t(460)=2.77$ ,  $p=0.006$ ).

For the experiential avoidance subdimensions, females scored significantly higher than males in behavioral avoidance ( $M=24.64$ ,  $SD=5.96$  vs.  $M=22.83$ ,  $SD=6.85$ ;  $t(460)=3.04$ ,  $p=0.003$ ) and distress aversion ( $M=21.69$ ,  $SD=6.82$  vs.  $M=20.37$ ,  $SD=6.70$ ;  $t(460)=2.09$ ,  $p=0.038$ ).

No significant gender differences were found in procrastination ( $M=19.90$ ,  $SD=6.53$  vs.  $M=19.13$ ,  $SD=6.26$ ;  $t(460)=1.28$ ,  $p=0.20$ ), distraction/suppression ( $M=25.09$ ,  $SD=6.03$  vs.  $M=23.95$ ,  $SD=6.79$ ;  $t(460)=1.90$ ,  $p=0.058$ ), repression/denial ( $M=17.54$ ,  $SD=6.92$  vs.  $M=17.41$ ,  $SD=6.48$ ;  $t(460)=0.21$ ,  $p=0.84$ ), or distress endurance ( $M=25.27$ ,  $SD=6.39$  vs.  $M=26.14$ ,  $SD=6.39$ ;  $t(460)=-1.47$ ,  $p=0.14$ ).

In summary, women demonstrated significantly higher scores in insecure attachment, behavioral avoidance, and distress aversion compared to men, whereas no significant gender differences were found in smartphone addiction, secure attachment, or other experiential avoidance dimensions.



**Figure-1. Results of Independent Samples t-test**

Note. PHN=Smartphone Addiction; S\_ATT=Secure Attachment; INS\_ATT=Insecure Attachment; AVO=Behavioral Avoidance; DIS=Distress Aversion; PRO=Procrastination; DST=Distraction and Suppression; SUP=Suppression and Denial; END=Distress Endurance

### Results of Gaussian Partial Correlation Based Network Analysis

A Gaussian Graphical Model was conducted using the Least Absolute Shrinkage and Selection Operator (LASSO) regularization to examine the conditional dependencies among smartphone addiction, attachment dimensions, and the subdimensions of experiential avoidance, including behavioral avoidance, distress aversion, procrastination, distraction and suppression, suppression and denial, and distress endurance. The purpose of this analysis was to explore how these psychological constructs interact within a complex system and to determine which variables hold the most central and influential positions in the network. By applying a LASSO-based approach, weaker and potentially spurious associations

were reduced toward zero, yielding a parsimonious and interpretable network structure.

The network was estimated using the EBICglasso method implemented in the bootnet and qgraph packages in R. This approach computes pairwise partial correlations between variables and applies the LASSO penalty to prevent overfitting. The Extended Bayesian Information Criterion (EBIC) with a tuning parameter of 0.5 was employed to optimize the balance between model fit and sparsity. All variables were standardized before estimation, and the resulting network reflects regularized partial correlation coefficients, where edges represent unique associations between variables after accounting for all others.

To evaluate the importance of each variable within the network, strength, closeness, betweenness, and expected influence values were calculated. The results indicated that procrastination (Strength=1.013; Closeness=0.014; Betweenness=3; Expected Influence=0.572) and distress aversion (Strength=0.928; Closeness=0.014; Betweenness=7; Expected Influence=0.928) were the most central and influential nodes in the network. Both variables demonstrated the highest predictability values ( $R^2=0.346$  and  $R^2=0.340$ , respectively), showing that they can be substantially explained by their surrounding variables. In contrast, secure attachment (Strength=0.519; Closeness=0.011; Betweenness=1; Expected Influence=0.126;  $R^2=0.153$ ) and distress endurance tolerance (Strength=0.682; Closeness=0.014; Betweenness=2; Expected Influence=0.113;  $R^2=0.216$ ) were positioned at the periphery of the network, indicating relatively weaker integration and predictability (Figure-2) (Table-2).

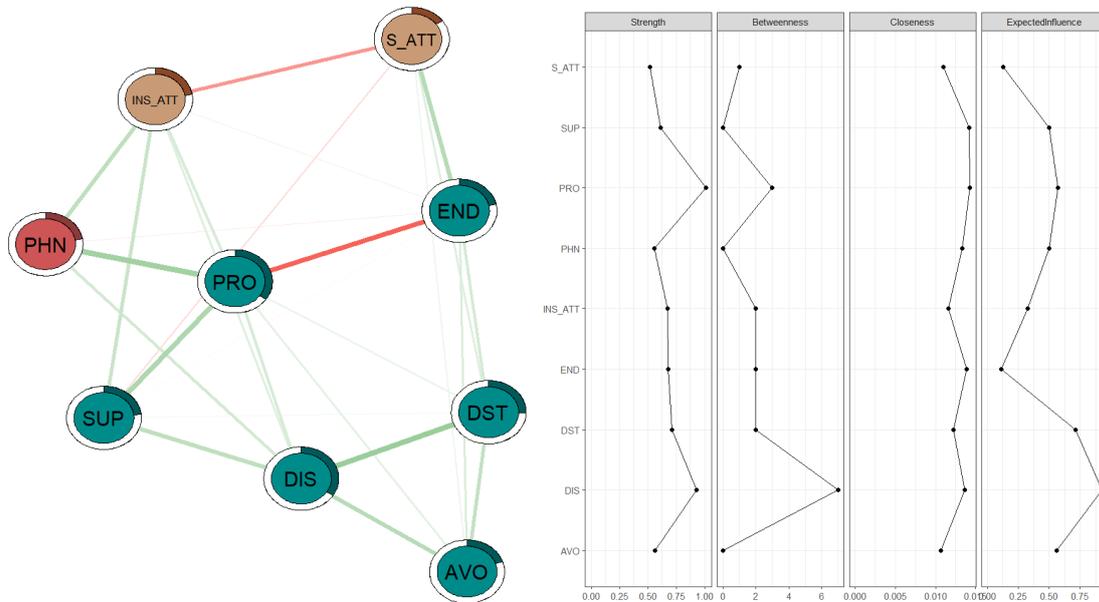
To evaluate the robustness of the network structure, a case-dropping bootstrap procedure was conducted. The correlation stability coefficient (CS-coefficient) was calculated for both edge weights and node strength centrality. The results indicated that the network demonstrated adequate stability, with CS-coefficient values of 0.517 for both edge weights and strength centrality. Since values above 0.50 reflect acceptable stability and values above 0.25 represent the minimum required threshold (Epskamp et al., 2018), the current network can be considered sufficiently stable for interpretation (Figure-3).

Overall, the results revealed a coherent structure in which distress aversion and procrastination serve as the most interconnected and predictive elements of the network. These results indicate that maladaptive avoidance mechanisms play a central role in explaining how attachment patterns relate to problematic smartphone use.

**Table-2. Centrality metrics for the gaussian partial correlation based network analysis**

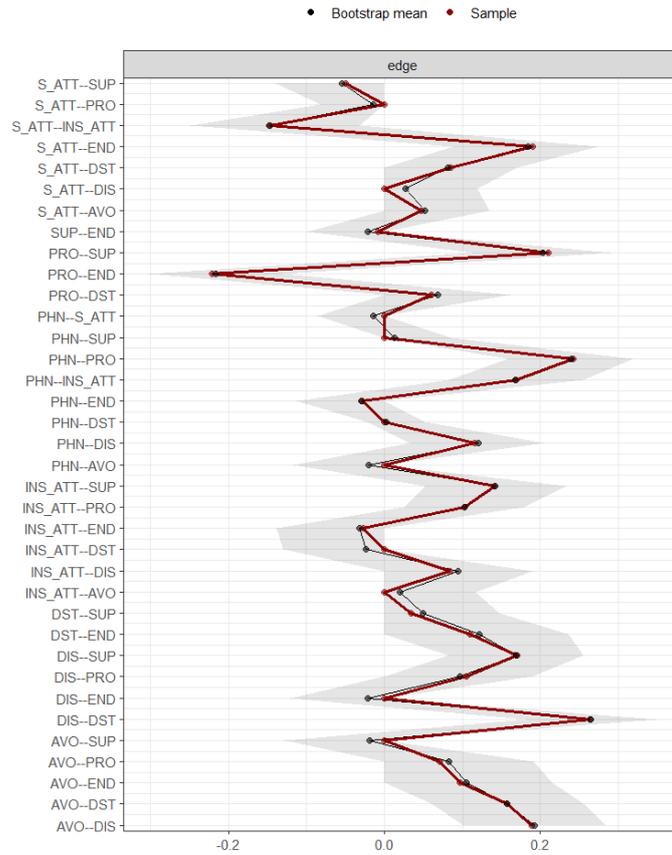
Node	Strength	Closeness	Betweenness	EI	Predictability
Smartphone Addiction	0.556	0.013	0	0.499	0.222
Secure Attachment	0.519	0.011	1	0.126	0.153
Insecure Attachment	0.673	0.012	2	0.325	0.224
Behavioral Avoidance	0.561	0.011	0	0.561	0.200
Distress Aversion	0.928	0.014	7	0.928	0.340
Procrastination	1.013	0.014	3	0.572	0.346
Distraction and Suppression	0.711	0.012	2	0.711	0.254
Suppression and Denial	0.614	0.014	0	0.499	0.233
Distress Endurance Tolerance	0.682	0.014	2	0.113	0.216

Note. EI=Expected Influence



**Figure-2. The Results of Gaussian Partial Correlation Based Network Analysis**

Note. PHN=Smartphone Addiction; S\_ATT=Secure Attachment; INS\_ATT=Insecure Attachment; AVO=Behavioral Avoidance; DIS=Distress Aversion; PRO=Procrastination; DST=Distraction and Suppression; SUP=Suppression and Denial; END=Distress Endurance



**Figure-3.Bootstrap Confidence Intervals for Edge Weights in the Gaussian Graphical Model**

Note. Red lines represent the sample edge weights, and black points indicate bootstrap means. PHN=Smartphone Addiction; S\_ATT=Secure Attachment; INS\_ATT=Insecure Attachment; AVO=Behavioral Avoidance; DIS=Distress Aversion; PRO=Procrastination; DST=Distraction and Suppression; SUP=Suppression and Denial; END=Distress Endurance

**Results of Mediation Analysis**

**The Mediating Roles of Experiential Avoidance Components in the Relationship between Secure Attachment and Smartphone Addiction**

A mediation analysis using PROCESS Model-4 (Hayes, 2018) was conducted to examine whether the relationship between secure attachment and smartphone addiction was mediated by experiential avoidance components, including behavioral avoidance, distress aversion, procrastination, distraction/suppression, suppression/denial, and distress endurance tolerance. The overall model was statistically significant ( $F_{(7, 454)}=15.69, p<0.001, R^2=.195$ ).

The total effect of secure attachment on smartphone addiction was significant ( $b=-0.095, SE=0.040, t(460)=-2.36, p=0.019, 95\% CI [-0.174, -0.016], \beta=-0.11$ ), indicating that higher levels of secure attachment were associated with lower levels of smartphone addiction. However, the direct effect of secure attachment on smartphone addiction became non-significant after including mediators ( $b=-0.048, SE=0.039, t(454)=-1.23, p=0.220, 95\% CI [-0.125, 0.029], \beta=-0.06$ ), suggesting full mediation.

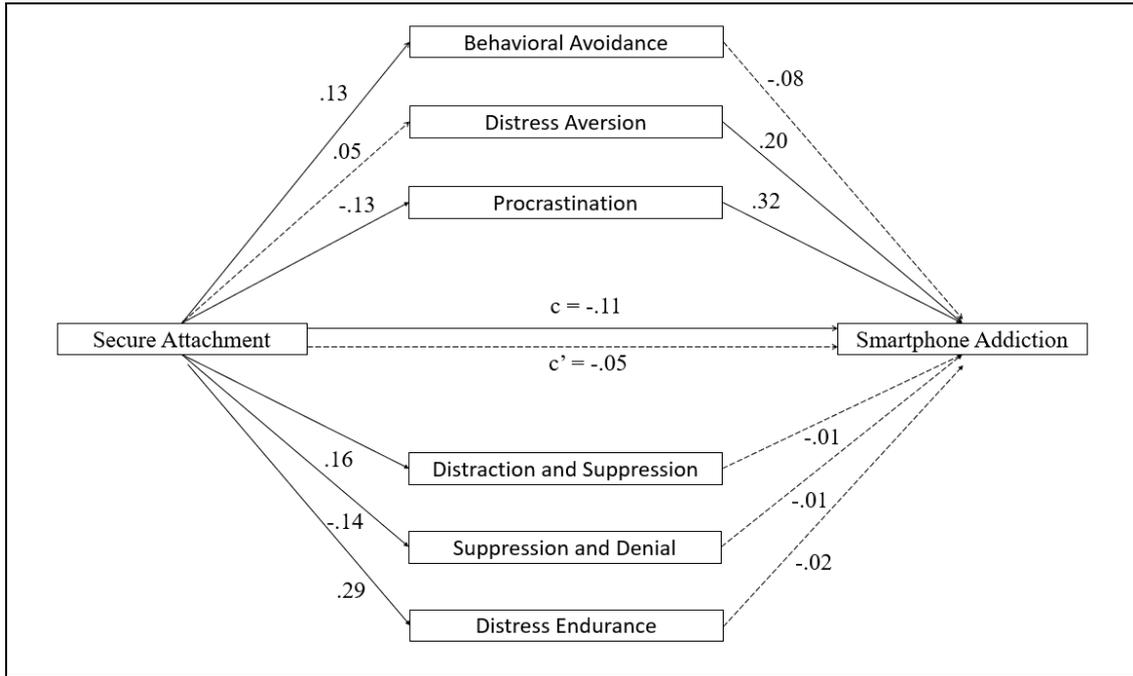
Among the specific indirect effects, a significant mediation pathway was observed through procrastination, whereby secure attachment negatively predicted procrastination, which in turn positively predicted smartphone addiction ( $b=-0.037$ ,  $SE=0.014$ ,  $\beta=-0.04$ , 95% CI  $[-0.066, -0.011]$ ). The total indirect effect of secure attachment on smartphone addiction through all mediators combined was also statistically significant ( $b=-0.047$ ,  $SE=0.022$ ,  $\beta=-0.05$ , 95% CI  $[-0.092, -0.005]$ ). No significant indirect effects were found through behavioral avoidance, distress aversion, distraction/suppression, suppression/denial, or distress endurance tolerance (Table-3)(Figure-4).

Overall, these results indicate that secure attachment decreases smartphone addiction indirectly through lower procrastination tendencies, while other experiential avoidance dimensions did not contribute significantly to the mediation process.

**Table-3. Direct, indirect, and total effects of secure attachment on smartphone addiction via experiential avoidance components**

Path	b	SE	$\beta$	t	p	95% CI [LL, UL]
Direct effect of S_ATT → PHN	-0.048	0.039	-0.06	-1.23	.220	[-0.125, 0.029]
Total effect of S_ATT → PHN	-0.095	0.040	-0.11	-2.36	.019	[-0.174, -0.016]
<b>Indirect effects</b>						
S_ATT → AVO → PHN	-0.009	0.006	-0.01	—	—	[-0.023, 0.002]
S_ATT → DIS → PHN	0.009	0.009	0.01	—	—	[-0.008, 0.027]
S_ATT → PRO → PHN	-0.037	0.014	-0.04	—	—	[-0.066, -0.011]
S_ATT → DST → PHN	-0.002	0.007	-0.00	—	—	[-0.017, 0.011]
S_ATT → SUP → PHN	-0.002	0.007	-0.00	—	—	[-0.016, 0.011]
S_ATT → END → PHN	-0.006	0.014	-0.01	—	—	[-0.034, 0.021]
<b>Total Indirect Effect</b>	<b>-0.047</b>	<b>0.022</b>	<b>-0.05</b>	<b>—</b>	<b>—</b>	<b>[-0.092, -0.005]</b>

Note. PHN=Smartphone Addiction; S\_ATT=Secure Attachment; AVO=Behavioral Avoidance; DIS=Distress Aversion; PRO=Procrastination; DST=Distraction and Suppression; SUP=Suppression and Denial; END=Distress Endurance



**Figure-4. The mediating roles of experiential avoidance components in the relationship between secure attachment and smartphone addiction**

Note. The standardized coefficients are given in the figure.

**The Mediating Roles of Experiential Avoidance Components in the Relationship between Secure Attachment and Smartphone Addiction**

A mediation analysis using PROCESS Model-4 (Hayes, 2018) was conducted to examine whether the relationship between insecure attachment and smartphone addiction was mediated by experiential avoidance components, including behavioral avoidance, distress aversion, procrastination, distraction/suppression, suppression/denial, and distress endurance tolerance. The overall model was statistically significant ( $F_{(7, 454)}=18.49, p<0.001, R^2=.222$ ).

The total effect of insecure attachment on smartphone addiction was significant ( $b=0.252, SE=0.035, t(460)=7.15, p<0.001, 95\% CI [0.183, 0.322], \beta=0.32$ ), indicating that higher levels of insecure attachment were associated with higher levels of smartphone addiction. When the mediators were included in the model, the direct effect of insecure attachment on smartphone addiction remained significant ( $b=0.151, SE=0.036, t(454)=4.17, p<0.001, 95\% CI [0.080, 0.222], \beta=0.19$ ), suggesting partial mediation.

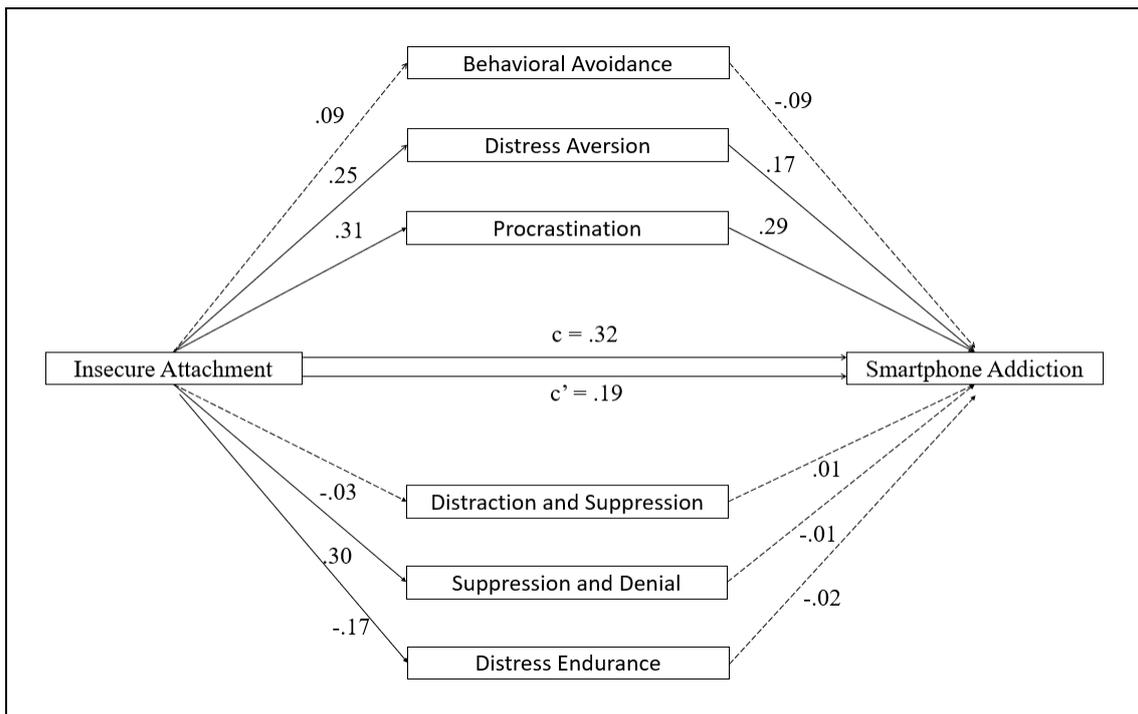
Among the specific indirect effects, significant mediation pathways were observed through distress aversion ( $b=0.034, SE=0.012, \beta=0.04, 95\% CI [0.013, 0.059]$ ) and procrastination ( $b=0.073, SE=0.017, \beta=0.09, 95\% CI [0.044, 0.109]$ ), whereby insecure attachment positively predicted both distress aversion and procrastination, which in turn predicted higher smartphone addiction. The total indirect effect of insecure attachment on smartphone addiction through all mediators combined was also statistically significant ( $b=0.101, SE=0.021, \beta=0.13, 95\% CI [0.061, 0.142]$ ). No significant indirect effects were found through behavioral avoidance, distraction/suppression, suppression/denial, or distress endurance tolerance (Table-4) (Figure-5).

Overall, these findings indicate that insecure attachment increases smartphone addiction both directly and indirectly through greater distress aversion and higher procrastination tendencies, while other experiential avoidance components did not significantly contribute to the mediation process.

**Table 4. Direct, indirect, and total effects of insecure attachment on smartphone addiction via experiential avoidance components**

Path	b	SE	$\beta$	t	p	95% CI [LL, UL]
Direct effect of INS_ATT → PHN	0.151	0.036	0.19	4.17	< .001	[0.080, 0.222]
Total effect of INS_ATT → PHN	0.252	0.035	0.32	7.15	< .001	[0.183, 0.322]
<b>Indirect effects</b>						
INS_ATT → AVO → PHN	-0.006	0.006	-0.01	—	—	[-0.020, 0.001]
INS_ATT → DIS → PHN	0.034	0.012	0.04	—	—	[0.013, 0.059]
INS_ATT → PRO → PHN	0.073	0.017	0.09	—	—	[0.044, 0.109]
INS_ATT → DST → PHN	0.000	0.002	0.00	—	—	[-0.005, 0.004]
INS_ATT → SUP → PHN	-0.003	0.012	-0.00	—	—	[-0.028, 0.019]
INS_ATT → END → PHN	0.003	0.008	0.00	—	—	[-0.012, 0.019]
<b>Total Indirect Effect</b>	<b>0.101</b>	<b>0.021</b>	<b>0.13</b>	—	—	<b>[0.061, 0.142]</b>

Note. PHN=Smartphone Addiction; INS\_ATT=Insecure Attachment; AVO=Behavioral Avoidance; DIS=Distress Aversion; PRO=Procrastination; DST=Distraction and Suppression; SUP=Suppression and Denial; END=Distress Endurance



**Figure-5. The mediating roles of experiential avoidance components in the relationship between insecure attachment and smartphone addiction**

Note. The standardized coefficients are given in the figure.

## Discussion

This study aimed to examine the mediating role of experiential avoidance in the relationship between attachment styles and smartphone addiction and to evaluate the relationships between variables in a multidimensional manner using network analysis. The findings demonstrated that individuals' early attachment patterns and avoidance-based coping tendencies are crucial in understanding the mechanisms associated with smartphone addiction.

The comparative analysis conducted by gender found that female participants had significantly higher insecure attachment scores than male participants. In this study, insecure attachment was examined based on negative representations of individuals' early relational experiences (Varlık Özsoy & Hisli Şahin, 2023). Accordingly, it can be said that women tend to internalize their negative experiences more deeply. According to object relations theory, early caregiver relationships become internalized representations that later shape individuals' self-perception and interpersonal styles (Blatt et al., 1997). These internal structures, which acquire positive or negative content depending on the emotional quality of the relationships, can affect an individual's perception of both themselves and others in the long term (Bretherton, 1992). In this context, it can be argued that negative childhood experiences have more lasting effects on women than men in terms of insecure attachment. Additionally, women's higher levels of emotional awareness compared to men (Deng et al., 2023) may have contributed to women's greater perception and more open reporting of attachment-related problems. Consequently, the higher levels of insecure attachment observed in women may reflect a multidimensional construct shaped by developmental processes and emotional awareness. This finding underscores the importance of considering gender-related differences when designing attachment-based interventions.

It was also found that women scored significantly higher on behavioral avoidance and distress aversion than men. These findings appear consistent with studies investigating emotion regulation strategies associated with insecure attachment (Uccula et al., 2022; Eilert & Buchheim, 2023; Hatami Nejad et al., 2025; Messina et al., 2023). It is known that individuals with insecure attachment, in particular, use strategies such as avoidance, suppression, or emotional distancing to cope with disturbing emotions (Hatami Nejad et al., 2025; Messina et al., 2023). A systematic review examining attachment styles and emotion regulation indicated that secure attachment is associated with more adaptive regulation skills, whereas insecure attachment is related to maladaptive strategies, particularly emotional suppression and avoidance (Eilert & Buchheim, 2023). In addition, Uccula et al. (2022) found that individuals with an avoidant attachment style perceived images involving support and closeness as threatening and consciously avoided such stimuli. The finding that women resort to such strategies more frequently suggests that there are gender differences in the ways they cope with emotional difficulties.

However, notably, no significant difference was found between men and women in terms of smartphone addiction scores in this study. This suggests that smartphone addiction cannot be directly explained by gender alone, but may instead be related to deeper psychological processes such as individuals' attachment patterns,

emotion regulation strategies, or experiential avoidance. Some studies in the literature have reported higher levels of smartphone addiction in women than in men (Fischer-Grote et al., 2019; Park & Lee, 2022). However, a network analysis study by Wei et al. (2024) showed that, despite similar addiction levels, there are significant differences between men and women's smartphone usage patterns and the psychological determinants of this usage. For example, shopping apps were found to exhibit strong hyperlink centrality in the network structure in female participants. In contrast, the links between apps like games and e-books and addiction symptoms have been shown to be stronger in men. Accordingly, it can be thought that women and men may use smartphones for different purposes but with similar intensity, and therefore, addictive behaviors are shaped by individual psychological patterns and needs rather than gender.

In this study, a Gaussian Graphical Model (GGM)-based network analysis was applied to examine the conditional relationships among smartphone addiction, attachment styles, and the sub-dimensions of experiential avoidance, and the dynamics of this multivariate structure were visually demonstrated. The analysis revealed that procrastination and distress aversion variables, in particular, had the highest centrality (strength, betweenness), and predictability values within the network structure. This finding suggests that these two sub-dimensions of experiential avoidance behaviors, in particular, play a central role in the psychological patterns established by smartphone addiction. These results are consistent with studies in the literature demonstrating that experiential avoidance is a central variable in addiction types such as substance, alcohol, food, and the internet (Chou et al., 2017; Hayes et al., 2013; Levin et al., 2012; Yi et al., 2025). It's known that individuals' reliance on technological tools to escape disturbing internal experiences, while providing short-term relief, creates a pattern that diminishes functionality in the long run (Bardeen, 2015; Fernández-Rodríguez et al., 2022). In this context, it can be said that distress aversion and procrastination are among the key mechanisms in explaining the use of the smartphone as a relaxation tool.

Secure attachment, located among the more peripheral nodes of the network, had one of the lowest values for both centrality and predictability. It is known that individuals with secure attachment can cope with emotional intensity more functionally and have less need to seek external approval (Ding et al., 2022). In contrast, it can be said that insecure attachment patterns are particularly associated with avoidant strategies, and these strategies trigger and maintain addictive behaviors (Kim et al., 2017; Yuchang et al., 2017).

Another striking point in the network structure is that the "distraction and suppression" and "suppression and denial" subscales exhibit moderate centrality and predictability. This result may suggest that individuals' tendency to suppress and ignore stressful internal experiences rather than confront them may also increase smartphone use (Chen et al., 2025; Abuhamdah & Naser, 2023). In conclusion, the structure revealed by the network analysis suggests that smartphone addiction should be understood not only in relation to attachment styles but also in connection with the avoidance strategies shaped by these attachment patterns. In particular, distress avoidance and procrastination

behaviors stand out as intervention targets, indicating that increasing individuals' capacity to cope with internal distress can reduce the risk of problematic technology use.

Mediation analyses revealed that secure attachment directly predicted smartphone addiction, but did not significantly predict it when experiential avoidance dimensions were included in the model. This finding suggests that secure attachment serves a protective function on smartphone addiction through indirect effects, not direct ones. The analysis identified only the procrastination variable, one of the sub-dimensions of experiential avoidance, as a mediator. According to this finding, secure attachment appears to reduce procrastination, and procrastination is positively associated with higher levels of smartphone addiction. Thus, it can be argued that securely attached individuals are better able to regulate emotional intensity, refrain from impulsive actions, and show lower tendencies to procrastinate (Ding et al., 2022). In this context, procrastination may function as a key mediating variable in the relationship between secure attachment and smartphone addiction.

In the mediation analysis conducted for insecure attachment, significant indirect effects were obtained through both distress aversion and procrastination subscales. Insecure attachment increases these two avoidant strategies, and these strategies were found to be positively associated with smartphone addiction. It is known that individuals with anxious and avoidant attachment have difficulty tolerating internal distress, and therefore they more frequently resort to strategies such as suppression, distraction, and avoidance (Hayes et al., 2013; Bardeen, 2015). In this context, technological tools may have become one of the ways for these individuals to distance themselves from their negative internal experiences by functioning as an "escape object" (Chen et al., 2025; Abuhamdah & Naser, 2023).

However, it is noteworthy that other experiential avoidance sub-dimensions (behavioral avoidance, suppression/denial, distraction/suppression, distress endurance) did not yield significant results in terms of mediation. This suggests that not all types of avoidance may be equally associated with smartphone addiction. It is stated in the literature that experiential avoidance is a heterogeneous process and its sub-dimensions have different functional meanings (Fernández-Rodríguez et al., 2022).

In conclusion, it was determined that experiential avoidance, particularly procrastination and distress aversion, play a mediating role in the relationships between smartphone addiction and attachment styles. These findings suggest that psychoeducation or intervention programs aimed at coping with smartphone addiction should focus not only on attachment patterns but also on individuals' avoidant coping strategies. Increasing awareness of behaviors such as procrastination and distress avoidance, particularly in individuals with insecure attachment styles, may be a critical step in developing healthier digital usage habits. Overall, the findings indicate that smartphone addiction is not merely a technological habit but also a psychological coping strategy (Su & He, 2024; Zhu et al., 2025). Secure attachment appears to be a protective factor, while insecure attachment appears to be a risk-increasing factor, and this relationship is explained primarily by avoidance-based processes. Based on these results, it can

be argued that the distress aversion and procrastination dimensions, which are components of experiential avoidance, play a central role in understanding smartphone addiction.

## Conclusion

This study examined the role of experiential avoidance in the associations between attachment styles and smartphone addiction using both mediation and network approaches. The results suggest that insecure attachment may elevate vulnerability to smartphone addiction, whereas secure attachment may offer a protective influence. These associations appear to operate largely through avoidance-based coping tendencies rather than through direct pathways. In particular, procrastination emerged as a central mechanism linking attachment to problematic smartphone use, while distress avoidance also contributed to the risk pattern associated with insecure attachment. These findings indicate that smartphone use may function not only as a habitual behavior but also as a strategy for managing internal discomfort and stress.

The overall pattern of results highlights the importance of incorporating avoidance tendencies into prevention and intervention efforts for smartphone addiction. Supporting individuals in recognizing and regulating procrastination and distress-avoidance behaviors may help strengthen secure attachment-related coping and reduce the potential risks associated with insecure attachment. Considering that attachment-related cognitive-emotional processes shape technology use in adulthood, integrating these dynamics into psychoeducational and therapeutic programs may enhance their effectiveness. More broadly, the study demonstrates that smartphone addiction should be understood within a wider psychological and relational context. Future research using longitudinal or clinical samples may deepen understanding of the developmental mechanisms underlying this form of addiction, and the present findings offer meaningful guidance for both theoretical and applied work in the field.

## References

- Abuhamdah, S.M.A., & Naser, A.Y. (2023). Smart phone addiction and its mental health risks among university students in Jordan: A cross-sectional study. *BMC Psychiatry*, 23(1), 812.
- Bardeen J.R. (2015). Short-term pain for long-term gain: The role of experiential avoidance in the relation between anxiety sensitivity and emotional distress. *Journal of Anxiety Disorders*, 30, 113-119.
- Blatt, S.J., Auerbach, J.S., & Levy, K.N. (1997). Mental representations in personality development, psychopathology, and the therapeutic process. *Review of General Psychology*, 1(4), 351-374.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, 28(5), 759-775.
- Chen, X., Peng, S., Guan, H., Sun, H., Wu, H., Yao, X., Chen, Z., & Yang, X. (2025). Effect of emotional intelligence on problematic mobile social media use: Mediating

- role of peer relationships and experiential avoidance. *Frontiers in Psychology*, *16*, 1558733.
- Chou, W.P., Lee, K.H., Ko, C.H., Liu, T.L., Hsiao, R.C., Lin, H.F., & Yen, C.F. (2017). Relationship between psychological inflexibility and experiential avoidance and internet addiction: Mediating effects of mental health problems. *Psychiatry research*, *257*, 40-44.
- Deng, X., Chen, S., Li, X., Tan, C., Li, W., Zhong, C., Mei, R., & Ye, M. (2023). Gender differences in empathy, emotional intelligence and problem-solving ability among nursing students: A cross-sectional study. *Nurse Education Today*, *120*, 105649.
- Ding, Y., Huang, H., Zhang, Y., Peng, Q., Yu, J., Lu, G., Wu, H., & Chen, C. (2022). Correlations between smartphone addiction and alexithymia, attachment style, and subjective well-being: A meta-analysis. *Frontiers in Psychology*, *13*, 971735.
- Ekşi, H., Kaya, Ç., & Kuşcu, B. (2018). *Multidimensional Experiential Avoidance Questionnaire-30: Adaptation and psychometric properties of the Turkish version*. Paper presented at the 8th International Conference on Research in Education (ICRE), May 9-11, Manisa, Turkey, pp.483-487. International Association of Educational Researchers.
- Eilert, D.W., & Buchheim, A. (2023). Attachment-related differences in emotion regulation in adults: A Systematic review on attachment representations. *Brain Sciences*, *13*(6), 884.
- Enez Darcin, A., Kose, S., Noyan, C.O., Nurmedov, S., Yılmaz, O., & Dilbaz, N. (2016). Smartphone addiction and its relationship with social anxiety and loneliness. *Behaviour & Information Technology*, *35*(7), 520-525.
- Epskamp, S., & Fried, E.I. (2018). A tutorial on regularized partial correlation networks. *Psychological Methods*, *23*(4), 617-634.
- Epskamp, S., Borsboom, D., & Fried, E.I. (2018). Estimating psychological networks and their accuracy: A tutorial paper. *Behavior Research Methods*, *50*(1), 195-212.
- Farr, J., Ononaiye, M., & Irons, C. (2021). Early shaming experiences and psychological distress: The role of experiential avoidance and self-compassion. *Psychology and Psychotherapy*, *94*(4), 952-972.
- Fernández-Rodríguez, C., Coto-Lesmes, R., Martínez-Loredo, V., & Cuesta-Izquierdo, M. (2022). Psychological inflexibility, anxiety and depression: The moderating role of cognitive fusion, experiential avoidance and activation. *Psicothema*, *34*(2), 240-248.
- Fischer-Grote, L., Kothgassner, O.D., & Felnhofer, A. (2019). Risk factors for problematic smartphone use in children and adolescents: a review of existing literature. Risikofaktoren für problematischen Smartphone-Gebrauch bei Kindern und Jugendlichen: eine Übersichtsarbeit. *Neuropsychiatrie : Klinik, Diagnostik, Therapie und Rehabilitation: Organ der Gesellschaft Österreichischer Nervenärzte und Psychiater*, *33*(4), 179-190.

- Gorday, J.Y., & Bardeen, J.R. (2022). Problematic smartphone use influences the relationship between experiential avoidance and anxiety. *Cyberpsychology, Behavior and Social Networking*, 25(1), 72-76.
- Gritti, E.S., Bornstein, R.F., & Barbot, B. (2023). The smartphone as a "significant other": Interpersonal dependency and attachment in maladaptive smartphone and social networks use. *BMC Psychology*, 11(1), 296.
- Hatami Nejad, M., Sadri Damirchi, E., Sadeghi, M., & Noroozi Homayoon, M. (2025). Developing a model of experiential avoidance based on childhood trauma and victimization, mediated by insecure attachment styles. *European Journal of Trauma & Dissociation*, 9(1), 100513.
- Hayes, S.C., Levin, M.E., Plumb-Villardaga, J., Villatte, J.L., & Pistorello, J. (2013). Acceptance and commitment therapy and contextual behavioral science: Examining the progress of a distinctive model of behavioral and cognitive therapy. *Behavior therapy*, 44(2), 180-198.
- Hayes-Skelton, S.A., & Eustis, E.H. (2020). Experiential avoidance. In J.S. Abramowitz & S.M. Blakey (Eds.), *Clinical handbook of fear and anxiety: Maintenance processes and treatment mechanisms* (pp.115-131). American Psychological Association.
- Herdi, O. (2022). A new defence mechanism in the modern world: Flowing. *Psychodynamic Practice*, 29(2), 154-158.
- Hu, Z., Yu, H., Zou, J., Zhang, Y., Lu, Z., & Hu, M. (2021). Relationship among self-injury, experiential avoidance, cognitive fusion, anxiety, and depression in Chinese adolescent patients with nonsuicidal self-injury. *Brain and Behavior*, 11(12), e2419.
- Jin, X., Jiang, Q., Xiong, W., & Zhao, W. (2023). Effects of use motivations and alexithymia on smartphone addiction: Mediating role of insecure attachment. *Frontiers in Psychology*, 14, 1227931.
- Kim, J.H., & Park, H. (2019). Effects of smartphone-based mobile learning in nursing education: A systematic review and meta-analysis. *Asian Nursing Research*, 13(1), 20-29.
- Kim, E., Cho, I., & Kim, E.J. (2017). Structural equation model of smartphone addiction based on adult attachment theory: Mediating effects of loneliness and depression. *Asian Nursing Research*, 11(2), 92-97.
- Kim, H.J., Min, J.Y., Min, K.B., Lee, T.J., & Yoo, S. (2018). Relationship among family environment, self-control, friendship quality, and adolescents' smartphone addiction in South Korea: Findings from nationwide data. *PloS one*, 13(2), e0190896.
- Levin, M.E., Lillis, J., Seeley, J., Hayes, S.C., Pistorello, J., & Biglan, A. (2012). Exploring the relationship between experiential avoidance, alcohol use disorders, and alcohol-related problems among first-year college students. *Journal of American College Health*, 60(6), 443-448.

- Loleska, S., & Pop-Jordanova, N. (2021). Is smartphone addiction in the younger population a public health problem?. *Prilozi (Makedonska akademija na naukite i umetnostite. Oddelenie za medicinski nauki)*, *42*(3), 29-36.
- Mahapatra, S. (2019). Smartphone addiction and associated consequences: Role of loneliness and self-regulation. *Behaviour & Information Technology*, *38*(8), 833-844.
- Messina, I., Calvo, V., & Grecucci, A. (2023). Attachment orientations and emotion regulation: New insights from the study of interpersonal emotion regulation strategies. *Research in Psychotherapy*, *26*(3), 703.
- Nie, J., Wang, P., & Lei, L. (2020). Why can't we be separated from our smartphones? The vital roles of smartphone activity in smartphone separation anxiety. *Computers in Human Behavior*, *109*, 106351.
- Nikolic, A., Bukurov, B., Kocic, I., Vukovic, M., Ladjevic, N., Vrhovac, M., Pavlović, Z., Grujicic, J., Kisic, D., & Sipetic, S. (2023). Smartphone addiction, sleep quality, depression, anxiety, and stress among medical students. *Frontiers in Public Health*, *11*, 1252371.
- Noyan, C.O., Enez-Darçın, A., Nurmedov, S., Yılmaz, O., & Dilbaz, N. (2015). The validity and reliability study of the Turkish version of the Smartphone Addiction Scale-Short Form among university students. *Anadolu Journal of Psychiatry*, *16*(Supplement 1), 73-81.
- Park, Y., & Lee, S. (2022). Gender differences in smartphone addiction and depression among korean adolescents: Focusing on the internal mechanisms of attention deficit and self-control. *Computers in Human Behavior*, *136*, 1-8.
- Robinaugh, D.J., Millner, A.J., & McNally, R.J. (2016). Identifying highly influential nodes in the complicated grief network. *Journal of Abnormal Psychology*, *125*(6), 747-757.
- Ross, M.Q., & Kushlev, K. (2025). Antecedents and consequences of smartphone self-extension. *Psychology of Popular Media*, *14*(1), 12-21.
- Qiu, H., Lu, H., Pei, J., Zhang, Y., Ma, Y., Xing, C., Wang, X., & Zhu, X. (2023). Effects of chronic stress on smartphone addiction: A moderated mediation model. *Frontiers in Public Health*, *11*, 1048210.
- Safaria, T., Saputra, N.E., & Arini, D.P. (2023). Data on the model of loneliness and smartphone use intensity as a mediator of self-control, emotion regulation, and spiritual meaningfulness in nomophobia. *Data in Brief*, *50*, 109479.
- Safdar Bajwa, R., Abdullah, H., Zaremohzzabieh, Z., Wan Jaafar, W.M., & Abu Samah, A. (2023). Smartphone addiction and phubbing behavior among university students: A moderated mediation model by fear of missing out, social comparison, and loneliness. *Frontiers in Psychology*, *13*, 1072551.
- Shi, Y., Koval, P., Kostakos, V., Goncalves, J., & Wadley, G. (2023). "Instant Happiness": Smartphones as tools for everyday emotion regulation. *International Journal of Human-Computer Studies*, *170*, 1-14.

- Su, P., & He, M. (2024). The mediating role of loneliness in the relationship between smartphone addiction and subjective well-being. *Scientific Reports*, 14(1), 4460.
- Sun, J., & Miller, C.H. (2023). Insecure attachment styles and phubbing: The mediating role of problematic smartphone use. *Human Behavior and Emerging Technologies*, 2023, 4331787.
- Uccula, A., Mercante, B., Barone, L., & Enrico, P. (2022). Adult avoidant attachment, attention bias, and emotional regulation patterns: An eye-tracking study. *Behavioral Sciences*, 13(1), 11.
- Varlık Özsoy, E., & Hisli Şahin, N. (2023). Bağlanma Temelli Zihinsel Temsiller Ölçeği (BTZTÖ): Türk kültürüne özgü bağlanma ölçümü için yeni bir araç. *Türk Psikiyatri Dergisi*, 34(4), 223-234.
- Wang, Z., & Xuan, B. (2024). The effect of adult attachment on mobile phone dependence among university students: the mediating role of loneliness. *Frontiers in Psychology*, 15, 1494262.
- Wei, X.Y., Liang, H.Y., Gao, T., Gao, L.F., Zhang, G.H., Chu, X.Y., ... & Lei, L. (2024). Preference for smartphone-based internet applications and smartphone addiction among Young Adult Addicts: Gender difference in psychological network. *Social Science Computer Review*, 42(5), 1266-1281.
- Williams, A.D. (2012). Distress tolerance and experiential avoidance in compulsive acquisition behaviours. *Australian Journal of Psychology*, 64(4), 217-224.
- Yi, Z., Wang, W., Wang, N., & Liu, Y. (2025). The relationship between empirical avoidance, anxiety, difficulty describing feelings and internet addiction among college students: A moderated mediation model. *The Journal of Genetic Psychology*, 186(4), 288-304.
- Yuchang, J., Cuicui, S., Junxiu, A., & Junyi, L. (2017). Attachment styles and smartphone addiction in Chinese college students: The mediating roles of dysfunctional attitudes and self-esteem. *International Journal of Mental Health and Addiction*, 15(5), 1122-1134.
- Zhou, X., Yang, F., Chen, Y., & Gao, Y. (2024). The correlation between mobile phone addiction and procrastination in students: A meta-analysis. *Journal of Affective Disorders*, 346, 317-328.
- Zhu, C., Li, S., & Zhang, L. (2025). The impact of smartphone addiction on mental health and its relationship with life satisfaction in the post-COVID-19 era. *Frontiers in Psychiatry*, 16, 1542040.