

# "Smartphone Addiction, Personality, Impulsivity, and Self-Esteem in Young Adults"

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## Abstract:

The study examines the link between smartphone addiction and psychological traits such as negative affectivity, detachment, antagonism, disinhibition, psychoticism, impulsivity, and self-esteem. A sample of 211 young adults aged 18-25 participated in the study, completing standardized assessments. Pearson's product-moment correlation analysis confirmed all seven hypotheses, revealing significant positive correlations between smartphone addiction and maladaptive personality traits, impulsivity, and lower self-esteem. Higher levels of negative affectivity were associated with increased smartphone dependence, suggesting emotional regulation. Detachment traits, such as social withdrawal and intimacy avoidance, were linked to problematic smartphone use. Antagonism was associated with higher addiction levels. Disinhibition was a strong predictor of smartphone addiction, indicating impulsive individuals are more prone to compulsive smartphone behaviors. Psychoticism-related traits were also associated with smartphone addiction, suggesting individuals with unusual beliefs or dissociative tendencies may turn to smartphones as a coping mechanism. Future research could explore causal relationships through longitudinal designs and objective behavioral measures.

Keywords: smartphone, personality, impulsivity, and self-esteem.

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Smartphone addiction in young adults is a growing concern due to the increasing use of these devices for communication, information, entertainment, relaxation, and identity expression. The American Psychiatric Association's DSM has established criteria for assessing substance dependence, which includes withdrawal, tolerance, and preoccupation with the substance, loss of control over the substance, continued consumption despite adverse consequences, and loss of interest in other activities. Excessive smartphone use, coupled with negative attitudes and feelings of anxiety, may increase the risk of anxiety and depression. Studies have found that fear of missing out (FoMO), emotional instability, stress levels, and the Smartphone Addiction Scale (SAS) are significant factors in smartphone addiction.

Cognitive effects of smartphone addiction in young adults include reduced attention span and impaired cognitive performance. Individuals with smartphone addiction display difficulties in maintaining attention during tasks and slower reaction times, indicating cognitive control deficits and attentional impairments. A meta-analysis of studies by Sohn et al. (2019) found that higher levels of stress, depression, and anxiety were consistently linked to increased smartphone addiction, with individuals with higher emotional distress more likely to engage in compulsive smartphone use as a maladaptive coping mechanism. Gökçearslan et al. (2016) found that individuals with higher social connectedness were less likely to develop smartphone addiction, while those using smartphones for emotional compensation and escape showed higher addiction scores. This suggests that social support and meaningful connections serve as protective factors against smartphone addiction. The maladaptive aspects of personality have increased in recent years, with a trait-based model of personality pathology proposed for inclusion in the DSM-5. The model comprises five general traits: Negative Affect, Detachment, Antagonism, Disinhibition, and Psychoticism.

Lachmann et al. (2019) found that neuroticism was positively correlated with smartphone addiction, indicating that emotionally unstable individuals were more likely to develop addictive behaviors. Conversely, conscientiousness was negatively associated with smartphone addiction, suggesting disciplined and organized individuals were less prone to excessive smartphone use. Marengo et al. (2020) found that individuals with low agreeableness were more likely to develop smartphone addiction, while those high in neuroticism exhibited greater emotional instability, predicting excessive smartphone use. Servidio (2019) found that conscientiousness acted as a protective factor against addiction, while extraversion was associated with increased smartphone addiction. Andreassen et al. (2012) found that neurotic individuals, characterized by emotional instability and stress reactivity, were more likely to develop compulsive smartphone usage patterns.

Horwood and Anglim (2018) found that low conscientiousness and high neuroticism were linked to increased smartphone dependence, as low conscientiousness reduces self-regulation abilities and neuroticism enhances emotionally driven smartphone behaviors. Luo et al. (2021) found that individuals with low openness to experience were more prone to smartphone addiction, as they were less likely to seek alternative activities. Gutiérrez et al. (2016) found that individuals with low conscientiousness were more likely to develop problematic smartphone behaviors due to poor self-regulation.

Billieux et al. (2015) examined the role of motor and attentional impulsivity in predicting problematic smartphone use. They found that individuals with higher motor and attentional impulsivity were more likely to develop problematic smartphone behaviors, such as frequent checking, poor time management, and difficulty resisting smartphone notifications. Kim et al. (2016) found that higher impulsivity scores were significantly associated with more severe smartphone addiction symptoms, such as loss of control over usage and withdrawal symptoms.

Chung et al. (2021) found that low self-control significantly increased the likelihood of smartphone addiction, as individuals with poor self-regulation were more prone to impulsive behaviors, such as frequent phone checking and procrastination through smartphone use. Grant et al. (2010) found that individuals with higher impulsivity scores were more susceptible to various forms of addiction, including technology addiction. Chen et al. (2020) found that impulsivity-related traits, such as sensation-seeking and poor delay of gratification, were significant predictors of smartphone addiction severity. Wang et al. (2021) found a positive correlation between high impulsivity and increased smartphone dependence, as impulsive individuals were more prone to excessive use and difficulty in controlling screen time. Davey et al. (2018) found that individuals with higher impulsivity scores reported greater smartphone addiction tendencies, including frequent usage, poor self-regulation, and increased dependence.

Hawi and Samaha (2016) found that lower self-esteem was significantly associated with higher smartphone addiction scores, as students with low self-worth were more prone to use smartphones as a coping mechanism for emotional regulation and social validation. Andreassen et al. (2017) found that individuals with low self-worth were more likely to engage in excessive social media usage and constant phone checking, which increased the likelihood of addiction. Chiu (2014) found that individuals with lower self-esteem scores were more likely to exhibit problematic smartphone behaviors, such as frequent checking and prolonged usage. The authors suggested that smartphones were used as a tool for emotional regulation, helping individuals cope with low self-worth. Hussain et al. (2017) found that individuals with low self-esteem were more prone to problematic smartphone use, using their devices for mood regulation and emotional compensation. Jiang et al. (2018) found that individuals with lower self-esteem were more likely to use smartphones for mood regulation, leading to problematic usage patterns. The authors concluded that smartphone addiction served as an emotional coping strategy, reinforcing compulsive behaviors.

The relationship between self-esteem, social anxiety, neuroticism, conscientiousness, extraversion, openness, agreeableness, impulsivity, and smartphone addiction has been

extensively studied. Samaha and Hawi (2017) found that low self-esteem significantly predicted higher addiction scores, particularly in individuals with social anxiety. They argued that individuals with poor self-image were more likely to use smartphones for social escape and validation, which reinforced addictive behaviors. Lachmann et al. (2019) found that individuals with higher neuroticism were significantly more likely to use smartphones as a coping mechanism for emotional regulation and stress relief, which in turn increased their addiction tendencies. Marengo et al. (2020) reinforced this finding by reporting that high neuroticism significantly predicted problematic smartphone use, especially in individuals prone to emotional distress and poor stress management made neurotic individuals more prone to compulsive behaviors, such as frequent and prolonged smartphone use.

Servidio (2019) examined the protective role of conscientiousness in smartphone addiction, finding that individuals with high conscientiousness were less likely to develop smartphone addiction due to their strong self-regulation skills and greater ability to resist distractions. Kayiş et al. (2016) confirmed the inverse relationship between conscientiousness and smartphone addiction, indicating that individuals with poor impulse control and lack of planning were more prone to excessive and compulsive smartphone behaviors.

## Method:

#### 1. Smartphone Addiction Scale:

The Smartphone Addiction Scale (SAS) was developed by Kwon, Kim, Cho, and Yang in 2013 to assess the severity of smartphone addiction. It is a widely recognized and validated instrument used in psychological and behavioral studies. The SAS consists of 33 items, grouped into six factors that represent different dimensions of smartphone addiction.

### 2. Personality Inventory for DSM-5:

(PID-5- BF; Krueger, Derringer, Markon, Watsony Skodol, 2012) was used to measure maladaptive personality traits: Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism. The PID-5-BF consists of 25 items (five for each dimension) with a 4-point Likert-type scale ranging from 0 (very false or often false) to 3 (very true or often true). The PID-5-BF was created as a very short version of the PID-5 questionnaire that could be used to capture the maladaptive global domains rapidly and efficiently, without measuring the most specific facets.

#### 3. UPPS impulsive behavior scale:

The UPPS Impulsive Behavior Scale is a psychometric tool designed to assess distinct personality traits related to impulsivity. It was originally developed by Whiteside and Lynam (2001) to capture four distinct facets of impulsivity based on a factor analysis of various existing impulsivity measures. The scale has been widely used in psychological research and clinical assessments to understand impulsive behaviors and their relationship with mental health disorders, substance use, and maladaptive behaviors.

## 4. Rosenberg Self-esteem Scale:

The Rosenberg Self-Esteem Scale (RSES) is one of the most widely used psychological instruments for measuring global self-esteem. Developed by Morris Rosenberg in 1965, the RSES was originally designed to assess adolescents' self-esteem, but it has since been validated for use with adults and various populations across different cultural and linguistic contexts. The Rosenberg Self-Esteem Scale consists of 10 items that measure global self-esteem.

## **Procedure:**

The data collection process for this study followed a standardized and ethical protocol. Participants were first provided with detailed information about the purpose of the study, including its objectives and significance, to ensure transparency and comprehension. Once completed, the responses were collected and scored according to the manuals and scoring guidelines provided with each scale. This standardized administration ensured consistency and reliability of the data collection process.

## **Results and Discussion:**

Pearson product-moment correlations were conducted to examine the relationships between smartphone addiction and various personality traits, impulsivity dimensions, and selfesteem.

	Smartphone Addiction	Negative Affectivity	Detachment	Antagonism	Disinhibition	Psychoticism	Positive Urgency	Negative Urgency	Lack of Premeditation	Lack of Perseverance	Sensation Seeking	Self-esteem	
Smartphone	1												
Addiction													
Negative	.162	1											
Affectivity	*												
Detachment	.140	.146	1										
	*	*											
Antagonism	.174	.139	0.08	1									
	*	*	6										
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Table No.1: Pearson Product Moment Correlations for all variables

Disinhibitio n	.290 **	.214 **	.215 **	.257 **	1							
Psychoticis m	.328 **	.184 **	.167 *	.165 *	0.10 6	1						
Positive	.274	0.09	.244	-	.225	.168	1					
Urgency	**	6	**	0.03	**	*						
Negative	.204	0.05	.176	0.02	.232	.183	.547	1				
Urgency	**	3	*	7	**	**	**					
Lack of	.285	0.12	.177	.255	.473	.238	.249	.385	1			
Premeditatio	**	7	*	**	**	**	**	**				
n												
Lack of	.158	.152	.210	.190	.271	.284	.254	.324	.375	1		
Perseveranc	*	*	**	**	**	**	**	**	**			
e												
Sensation	.259	.259	0.13	.156	.284	.186	.252	.262	.330	.423	1	
Seeking	**	**		*	**	**	**	**	**	**		
Self-esteem	.210	0.11	.146	0.09	.211	0.11	.271	.199	.249	.141	0.1	1
	**	5	*	2	**	7	**	**	**	*	32	
*. Correlation is significant at the 0.05 level (2-tailed).												
**. Correlation is significant at the 0.01 level (2-tailed).												

The results are summarized in Table-1. To test hypothesis no 1 stated as "Smartphone addiction will be significantly correlate with Negative Affectivity", A significant positive correlation was found between smartphone addiction and negative affectivity (r = .162, p < .05), indicating that higher levels of negative emotional tendencies are associated with increased smartphone addiction. This finding is consistent with previous research highlighting the association between emotional instability and excessive smartphone usage. For instance, Elhai et al. (2017) found that individuals with higher negative affect, including symptoms of anxiety, depression, and emotional dysregulation, were more likely to engage in smartphone overuse as a maladaptive coping mechanism. Similarly, Lemola et al. (2015) reported that negative mood states were linked to increased smartphone usage, often as a way to escape unpleasant emotions or distract from stressors. The observed relationship can be explained through the compensatory internet use theory, which suggests that individuals with heightened negative affectivity may resort to technology, including smartphones, to regulate mood and avoid distressing emotions (Kardefelt-Winther, 2014). When individuals experience emotional instability, they may increasingly turn to their smartphones for temporary relief or distraction, reinforcing addictive behaviors over time. Furthermore, negative affectivity is associated with

emotional dysregulation and reduced psychological resilience, making individuals more vulnerable to developing problematic technology use patterns (Sohn et al., 2019). Smartphone addiction, in this context, may serve as a maladaptive coping strategy to alleviate negative emotional states, albeit temporarily, contributing to a cycle of dependency.

To test hypothesis no 2 stated as, "Smartphone addiction will be significantly correlate with Detachment", Smartphone addiction was positively correlated with detachment (r = .140, p < .05), suggesting that individuals with higher levels of detachment, which includes withdrawal and intimacy avoidance, are more likely to experience smartphone addiction. This finding is consistent with prior research demonstrating the association between social isolation and technology dependence. For example, Panova and Carbonell (2018) reported that individuals with higher detachment tendencies often use smartphones as a substitute for face-to-face interactions, seeking comfort in virtual connections while avoiding emotional closeness in real-life relationships. Similarly, Kuss et al. (2014) found that individuals prone to detachment and social avoidance were more likely to develop smartphone addiction, as they relied on technology for emotional distancing and social buffering. Furthermore, detachment is linked to reduced emotional intimacy and interpersonal difficulties, making individuals more likely to use smartphones for solitary activities, such as gaming, social media browsing, or passive content consumption (Demirci et al., 2015). This behavioral pattern can gradually contribute to problematic usage patterns, reinforcing the addiction cycle.

To test hypothesis no 3 stated as, "Smartphone addiction will be significantly correlate with Antagonism", A significant positive correlation was observed between smartphone addiction and antagonism (r = .174, p < .05), suggesting that individuals exhibiting manipulative, deceitful, or grandiose traits tend to show higher levels of smartphone addiction. This finding aligns with previous research highlighting the link between antagonistic personality traits and addictive behaviors. For instance, Kayiş et al. (2016) found that individuals with higher levels of antagonism were more likely to develop technology-related addictions, as they often engage in impulsive, self-centered, and risk-taking behaviors. Similarly, Servidio (2019) reported that individuals with antagonistic traits, such as low empathy and exploitative tendencies, were more likely to exhibit excessive smartphone usage, driven by a desire for dominance or social manipulation in virtual interactions. Moreover, antagonistic individuals are characterized by low agreeableness and reduced social conformity, making them more prone to engaging in risky or maladaptive behaviors, including problematic smartphone use (Kim et al., 2017). Their interpersonal insensitivity and disregard for social

norms may reduce their motivation to moderate screen time, contributing to addictive usage patterns.

To test hypothesis no 4 stated as, "Smartphone addiction will be significantly correlate with Disinhibition", The correlation between smartphone addiction and disinhibition was found to be positive and significant (r = .290, p < .01), indicating that individuals who display more impulsive behaviors, such as irresponsibility and distractibility, are more likely to develop smartphone addiction. This result is consistent with prior research demonstrating the strong link between disinhibition and technology-related addictive behaviors. For example, Billieux et al. (2015) found that motor and attentional impulsivity, which are core components of disinhibition, significantly predicted problematic smartphone use. Similarly, Kim et al. (2016) reported that low self-control and impulsivity, key features of disinhibition, were strongly associated with smartphone addiction severity. These studies suggest that poor impulse regulation and an inability to delay gratification contribute to excessive and uncontrolled smartphone use. Individuals with high disinhibition may struggle with impulse regulation, leading them to frequently engage with their smartphones without considering the consequences. This can manifest as excessive checking, prolonged usage, and difficulty disengaging from the device, even in inappropriate contexts such as during work or social interactions (Van Deursen et al., 2015). The instant gratification provided by smartphone activities, such as social media notifications or online gaming, reinforces this impulsive behavior, making it harder for disinhibited individuals to moderate their usage.

To test hypothesis no 5 stated as, "Smartphone addiction will be significantly correlate with Psychoticism", A significant positive correlation was observed between smartphone addiction and psychoticism (r = .328, p < .01). This suggests that individuals with more eccentric behaviors, unusual beliefs, and perceptual dysregulation are more prone to smartphone addiction. This result aligns with previous research linking psychotic traits to excessive technology use. For instance, Sariyska et al. (2015) found that individuals with higher levels of psychoticism, including traits such as detachment from reality and cognitive dysregulation, were more likely to engage in problematic smartphone use. Similarly, Lemola et al. (2015) reported that psychoticism-related traits, including perceptual disturbances and impulsivity, significantly predicted smartphone addiction. These findings suggest that emotional instability and cognitive distortions may contribute to dysregulated and compulsive smartphone usage. Individuals with higher psychoticism may experience difficulty regulating their thoughts and emotions, which can make them more reliant on smartphones as a coping mechanism. For example, individuals with perceptual dysregulation or paranoid ideation may

excessively use smartphones to reassure themselves through constant social validation or surveillance (e.g., frequently checking messages or social media profiles). This reassurance-seeking behavior can reinforce compulsive smartphone use, thereby increasing addiction severity (Andreassen et al., 2017).

To test hypothesis no 6 stated as, "Smartphone addiction will be significantly correlate with Impulsivity", Multiple impulsivity dimensions, including positive urgency (r = .274, p < .01), negative urgency (r = .204, p < .01), lack of premeditation (r = .285, p < .01), lack of perseverance (r = .158, p < .05), and sensation seeking (r = .259, p < .01), showed significant positive correlations with smartphone addiction. These results indicate that individuals who exhibit higher levels of impulsivity, characterized by poor impulse control, emotional instability, and a tendency toward risk-taking behaviors, are more likely to engage in excessive smartphone use. These findings indicate that individuals exhibiting higher impulsivity traits, such as poor impulse control, emotional instability, and risk-taking behaviors, are more prone to excessive smartphone use. The association between impulsivity and smartphone addiction is consistent with prior research.

Billieux et al. (2015) highlighted that motor and attentional impulsivity significantly predicted problematic smartphone behaviors, as individuals with weaker self-regulation are more likely to engage in compulsive technology use. Similarly, Kim et al. (2016) found that low self-control and high impulsivity were significant predictors of smartphone addiction severity, emphasizing the role of impaired self-regulation in driving compulsive usage patterns. These studies support the notion that impulsivity exacerbates the risk of smartphone addiction by reducing individuals' ability to moderate their device usage.

The significant correlation between positive and negative urgency and smartphone addiction suggests that emotion-driven impulsivity plays a key role in promoting excessive smartphone use. Positive urgency reflects the tendency to act rashly under positive emotional states, while negative urgency refers to impulsive behaviors during distressing emotional experiences. Individuals with higher levels of both urgencies may turn to smartphones as a maladaptive coping mechanism to either enhance positive emotions or escape negative ones (Cyders & Smith, 2008). For example, individuals might impulsively check social media or engage in prolonged gaming sessions to regulate emotional states, thereby reinforcing addictive patterns.

The correlation between lack of premeditation and smartphone addiction (r = .285, p < .01) highlights that individuals who act without considering consequences are more likely to engage in problematic smartphone use. This finding aligns with Rosen et al. (2013), who

reported that low impulse control was associated with frequent and excessive smartphone checking, driven by reactive and spontaneous behaviors. The tendency to make impulsive decisions without forethought may lead individuals to overuse their smartphones, despite potential negative consequences, such as reduced productivity or social withdrawal.

The lack of perseverance dimension (r = .158, p < .05) being positively correlated with smartphone addiction indicates that difficulty in maintaining focus and following through with tasks is linked to problematic smartphone behaviors. Individuals with low perseverance may be more prone to frequent task-switching and distraction by smartphones, which can impair goal-directed behaviors and foster addictive tendencies. Van Deursen et al. (2015) similarly found that lower perseverance was linked to higher smartphone dependence, as individuals used their devices as a form of avoidance from challenging or monotonous tasks.

Finally, the significant association between sensation seeking and smartphone addiction (r = .259, p < .01) suggests that individuals with greater thrill-seeking tendencies are more likely to engage in frequent and excessive smartphone use. Sensation seekers may be drawn to the novelty and stimulation provided by smartphones, such as gaming, social media interactions, and multimedia consumption. Gao et al. (2017) also found that higher sensation-seeking tendencies were associated with greater susceptibility to smartphone addiction, as individuals pursued exciting and rewarding online experiences.

To test hypothesis no 7 stated as, "Smartphone addiction will be significantly correlate with Self-esteem", A moderate but significant positive correlation was found between smartphone addiction and self-esteem (r = .210, p < .01), suggesting that lower self-esteem is associated with higher levels of smartphone addiction. This finding is consistent with prior research that links low self-esteem to problematic technology use. Hawi and Samaha (2016) found that individuals with lower self-esteem scores were significantly more likely to exhibit smartphone addiction behaviors, using their devices as a means of emotional escape or for seeking external validation. Similarly, Andreassen et al. (2017) reported that young adults with low self-esteem were more susceptible to compulsive smartphone use, particularly when seeking social reinforcement or validation through online interactions. These studies align with the current findings, suggesting that individuals with diminished self-worth may engage in compulsive smartphone behaviors as a form of psychological compensation. Chiu (2014) found that individuals with low self-esteem scores were significantly more likely to use smartphones for emotional regulation, as the constant availability of digital connectivity provides temporary relief from negative self-perceptions. However, this behavior can lead to a vicious cycle, where excessive smartphone use further diminishes real-world social engagement, reinforcing feelings of inadequacy and perpetuating addiction. Moreover, the moderate correlation observed in the current study suggests that smartphone addiction may exacerbate pre-existing self-esteem issues. Servidio (2019) found that individuals with low self-esteem were more likely to engage in problematic smartphone behaviors as a form of social avoidance, further isolating themselves from real-world interactions. This can create a negative feedback loop, where increased smartphone dependency diminishes opportunities for authentic social connections, thereby reinforcing low self-esteem.

Overall, the results validate all hypotheses, demonstrating significant positive correlations between smartphone addiction and maladaptive personality traits, impulsivity, and lower self-esteem. These findings have important implications for mental health interventions, suggesting that targeted strategies addressing impulsivity regulation, personality vulnerabilities, and self-esteem enhancement could be effective in mitigating smartphone addiction.

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