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Correlates of Psychological Distress and Smartphone Addiction, Among University Students at Africa International University, Karen, Nairobi County, Kenya

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Abstract

Smartphones have become an essential part of our everyday lives and young people access the internet for various reasons. Many University students are faced with psychological distress and to cope with these stresses they become addicted to their smartphones. The objective of the study was to correlate psychological distress and smartphone addiction among students at Africa International University. The study proposed the use of the I-PACE model of addiction and looked at the development together with the sustenance of addictive use of internet applications. The research employed a descriptive correlational design, which is a quantitative approach to collect data. Purposive sampling a nonprobability sampling technique was employed to sample the respondents. The target population was university students, and a sample size of 333 students aged 17-40 years was engaged. Data was collected by use of questionnaires as well as SAS-SV and DASS 21 instruments. Correlation and linear regression tests were performed to test the relationships between psychological distress and smartphones. Psychological distress had a positive and significant effect on smartphone addiction among university students (β=0.674, p=0.000). This suggests that psychological distress increases smartphone addiction among university students. The study recommends that course instructors should be trained to assess and refer students who exhibit symptoms of smartphone use to the counseling department for help. Higher learning institutions should periodically conduct training or workshops to create awareness of the impact of psychological distress in relation to smartphone addiction among university students. It is important to promote strategies to reduce psychological distress to avoid the harmful consequences of smartphone addiction.

Keywords: *Psychological Distress, Smartphone Addiction, University Students*

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1. Introduction

University students experience depression, stress, and anxiety, more often as compared to the general population (Mboya et al., 2020). This could be attributed to the stage of development they are in, making them more susceptible to psychological distress, pressure from academics at the university, stress of being away from home, low social support, and new peer friendships (Negash et al., 2021). According to Erik Erickson's phases of development, the sixth stage is Intimacy versus isolation. The stage takes place in young adulthood between 18 years to 40 years. Major conflict is centered on making or forming intimate and loving relationships. Intimacy involves the ability to open and share with others and commit to relationships. Isolation is a struggle to form these relationships leading to alienation, loneliness, and exclusion. Isolation being a challenge, the youth may find themselves unable to form good relationships and therefore become lonely. This may lead to psychological distress where they may turn to their smartphone as a consolation (McLeod, 2022).

Severely depressed individuals are likely to overuse their smartphones. Suggestions have been made that people who go through social anxiety may be compulsive users of the smartphone. Given that symptoms of these conditions can result in substance misuse, poor academic performance, or even suicide, it is important to recognize the link between depression, and anxiety (Alavi et al., 2020).

The smartphone has become an important gadget, especially for young people as it is used for communication, academic work as well as a timekeeper. It has enabled students to get assignments, do research, and even have discussion groups over the phone. Psychological distress on the other hand is becoming rampant among the general population with university students not being left out. The smartphone therefore may become important to help them go through these stresses, though in a negative way.

1.1 Problem Statement

It has been observed that the use of smartphones has tremendously increased over time. University students have also been documented to experience psychological distress in excess of the general population (Porru et al., 2021a). This can be attributed to the pressure they face as they come to terms with the stresses associated with academics and life in general. The use of the smartphone has had an impact on how university students cope with their academic work. Even though it has been used effectively for academic work such as research, assignments, recording lectures, note-taking, and keeping track of upcoming events at the university, it has affected others who use it to cope with psychological distress. University students find they are susceptible to many pressures and thus may be prone to psychological distress. They often find themselves using their smartphones more than usual as a coping mechanism. A study done in the Chinese population found that respondents with high depression scores were more susceptible to smartphone addiction (Yuan et al., 2021). Previous studies have suggested that stress increases smartphone use, whereas a different study makes the case that stress may not increase smartphone use (Yik-Chuan et al., 2020).

With increased accessibility to the Internet, University students in Kenya are also at risk of suffering from psychological distress making them susceptible to smartphone addiction. Few studies have been done on the association between mental distress and smartphone addiction amid university students in Kenya. This research intends to investigate whether students experience psychological distress and whether there is a relationship between mental distress and smartphone addiction. This study therefore seeks to fill this gap.

This study is relevant since it addresses the pressing issue of the unfavorable consequences of smartphone addiction in university students. The study can provide insights that can be valuable in helping alleviate psychological distress and smartphone nomophobia among university students.

1.2 Research Objective

To establish the correlates of psychological distress and smartphone addiction among university students at Africa International University, Nairobi.

2. Literature Review

2.1 Theoretical Review

The study utilized the Interaction of Person-Affect-Cognition-Execution (I-PACE) model, which is a thorough conceptual framework to form important temperamental characteristics, and cognitive and emotional techniques to describe the occurrence and support of dependency behaviors. The model was developed to deal with internet use disorder. The I-PACE model now includes an extensive range of dependent behaviors, and it distinguishes early and later phases of the addiction process. The theory was derived in combination with current theories that are critical to explaining behavioral addictions and substance use disorders. The I-PACE model suggests that internal triggers, such as positive and negative stress, and mood, or external triggers such as the ability to hear a sound or advertisement can aid the experience to start reactivity and craving in response to prompts (Brandtner et al., 2021a). The model postulates that people with behavior deficiency including lack of self-control or are lonely are prone to develop addictive behaviors. Lacking self-control has been linked to loneliness which may in turn lead to poor social relationships (Gao et al., 2023).

The "P"-component constitutes a person's key features associated with the addiction process as influencing variables. The overall predisposing variables may significantly contribute to addictive behaviors that may include gaming, gambling, shopping, pornography disorders, and compulsive sexual behavior. Statistics suggest an important genetic contribution to gambling disorder and undefined internet-use disorder. Additionally, childhood traumatic experiences appear as a risk factor in gaming disorder and gambling disorder, which are in line with new conceptual thoughts of attachment in addictive behaviors (Brand et al., 2016).

Depression and social anxiety exist in gaming, betting, unspecified internet use, and shopping disorders, among other behavioral addictions. Being impulsive and having maladjusted coping skills have been linked with gaming, betting, and unspecified network use disorders (Brand et al., 2019). The I-PACE model, has broad names such as abnormal psychology, impulsivity and emotional features, may be described additionally as regards particular addictive behaviors. Behavior-specific variables are viewed as attributes for different addictive behaviors. Impulsive people are more likely to get gambling disorders. Those with narcissistic traits and aggressiveness may be more susceptible to developing gaming disorder. Those with high sexual libido may be more likely to get pornography-use disorder or hypersexual behavior, while materialistic individuals may develop shopping disorders (Brand et al., 2019).

The "A" component (Affective) relates to moods, attitudes, and feelings. Day-to-day pressures, as well as internet use to cope with stressful and unpleasant problems, have been singled out as key aspects that may impact the occurrence of internet use disorders. Coping mechanisms like impulsivity may be used to deal with daily pressure. An individual highly vulnerable to stress and uses impulsivity as a coping mechanism tends to react when a desire to set the mood

when challenged by some difficult occurrences. This relationship may result in one being more prone to use a certain application, and being dependent on the direct or indirect expectations attained when using the internet will alleviate stress. The urge is an important factor contributing to the lack of conduct control. The struggle of dismissing the urge to consume a substance was earlier known as craving. The outcome of challenging conditioned addiction-related stimuli, which can ignite desire, is called cue reactivity. Cue receptiveness was formed through an associative learning mechanism, in other words, the familiarization process, which is the temperamental, physiological, and motivating foundation for desire (Brandtner et al., 2021b).

The two concepts proceeded from drug misuse investigation to conduct addictions like betting problems. During with unusual mood, desire, or withdrawal disorder, the request to control feelings emerges (Antons et al., 2020). This feeling of controlling exercise is significant in several abnormal illnesses, as well as addiction. Internal or external cues can be avoided when addictive behavior becomes a deviation. This desire to balance emotions is a crucial factor in internet addiction because it can have an impact when one uses internet websites in the first phases of addiction. This component is crucial later in the process of addiction because it is presumed that each issue that happens will influence the emotional state to avoid while coping skills are reduced. Reduced coping is impaired by shifting to the desired internet location. (Kumalaratih & Hendy Muagiri Margono, 2023).

The “C” component in this model represents the cognitive elements that are described as cognitive biases (Kumalaratih & Hendy Muagiri Margono, 2023). A cognitive prejudice is a wrong assumption of the outcome of using a certain site. The outlook can be direct or indirect. Indirect outlooks are connected to particular mental processes to select particular applications which reinforce effects that make an individual decide to apply the application more often. Certain expectations such as encountering pleasure and expectation avoidance such as escaping from reality can impact the look of Internet addiction (Wegmann et al., 2018). Reasons are believed to continuously affect one’s behavior in regard to certain applications. Conversely, outcomes are thoughts and expectations using distinct sites in distinct environments. This indirect association also occurs in online gaming disorders, online gambling, and pornography disorders (Brand et al., 2023). Cognitive prejudices, both direct and indirect, may influence further the appearance of cue reactivity and desire when one encounters circumstances related to particular addictions or particular important situations such as stress, positive emotions, or negative emotions (Kumalaratih & Hendy Muagiri Margono, 2023).

The “E” Component (Executive Function) represents the coping style. Despite studies revealing a small executive defect in people with pathological Internet use investigation on repressive control in those has resulted in conflicting outcomes (Brand et al., 2016). An individual charged with the accountability of evaluating and deciding in dangerous circumstances shows a substantial depreciation in making a choice. People with alcohol use disorder and internet disorder score somewhat lower than those with executive functioning. The contrast in mind composition in those with and without gambling disorders is in white matter and gray matter in the limbic system and prefrontal cortex (Kumalaratih & Hendy Muagiri Margono, 2023).

The theory applied to the current study it aims to examine how individuals can turn to the smartphone to deal with daily difficulties to satisfy emotional needs. It explains personal factors that are self-esteem and personality, affective factors that include depression and loneliness, and cognitive factors that explain the perception of stress and execution which is the coping

style when it comes to smartphone addiction. This means that when students at the University are undergoing stress, they may end up getting addicted to their smartphones believing it may fulfill their psychological needs. When depression, anxiety, or stress arises, the use of a smartphone may be applied by the students to meet or partially meet emotional needs.

The theory focuses on different aspects of an individual, making it an appropriate theory to use in looking at how addictions are formed and maintained. The I-PACE model provides the hope of attaining ideas on the phases of addictive processes that are there throughout development as well as recovery. (Brand et al., 2019). A weakness of the model is that it is not specific to smartphone addiction but rather to specific internet use disorders. It is also not specific on the place and part for certain cognitive or emotional activity. The theory was chosen because it sums up the process underlying both the formation and sustenance of addiction behaviors, specifically looking at smartphone addiction. It also can be a basis for the foundation of future studies as well as clinical practice and can provide a basis for intervention and prevention of smartphone addiction among university students.

2.2 Empirical Review

A study carried out by Squires et al., (2021) among 204 students from Memorial University in Newfoundland Canada where the respondents finished the DASS scale, smartphone addiction scale-short version, and difficulties in emotional regulation scale. The results reported two-variable correlations positively associating psychological distress, emotional dysregulation, and smartphone addiction. Bootstrap mediation examination showed emotional dysregulation as a temporal intermediary in association with mental distress and smartphone addiction. Additionally, a study carried out by Covolo et al., (2021) among 2260 students aged 18-25 years in an Italian university reported that moderate insight of mental distress, phone time during day and night, sex, and education independently predicted smartphone addiction.

Further, a study conducted at a Turkish University among 412 students aged 18-35 showed that depression and anxiety independently predicted smartphone addiction also psychological rigidity was the mediating variable in the outcome of depression and anxiety on smartphone use (Kuru & Çelenk, 2021).

In yet another study by Wang et al. (2021) conducted in a medical college in China among 769 students, it was reported that stress correlated with smartphone addiction and negative emotions. Respondents with negative feelings were vulnerable to being addicted to their smartphones. The findings positively related negative emotions to perceived stress. On cross-examining 112 undergraduates in Kuala Lumpar Malaysia on psychological distress and smartphone addiction, Law and Yap (2022) revealed that 66.1% of respondents were addicted to their smartphones. Additionally, psychological distress notably predicted smartphone addiction. The findings inferred that psychological distress should be considered in reducing smartphone addiction.

Numerous studies indicate a connection between anxiety and rising smartphone usage which is dependency and addiction. A student study conducted in China found that anxiety was linked to smartphone addiction. Some theories suggest an association between anxiety and smartphone addiction. The trait-state anxiety theory (Spielberger, 1972) gives the impression that conditions induced by anxiety regarded by a person as terrifying can suggest behavioral reactions that may lead to phone dependence. These reactions can be used as coping methods to bring down the depth of tension experienced when there is a perceived risk (Yang et al., 2019).

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Recent correlational research has found a correlation between psychological discomfort and smartphone addiction, implying that psychological distress can play a role in forecasting smartphone addiction. A similar discovery was made in Shangqiu and Wuhan, China among secondary school students (Lian et al., 2021) medical students at Universiti Sains Malaysia (Lei et al., 2020) as well as students in other countries like Spain, Chile, Argentina Colombia, Mexico, Ecuador, Uruguay and Peru.

Furthermore, Kurniawan et al. (2021) in an investigation among medical students carried out in Indonesia, reported that depression and anxiety correlated positively to smartphone dependence. Anxiety played a role in smartphone addiction in a simple regression examination. The study concluded that there was a significant effective association of an average association linking depression and anxiety with smartphone dependence.

According to Naser et al. (2023), an online among 5720 students across universities in Lebanon, Jordan, Bahrain, Egypt, and Saudi Arabia revealed that those who suffered from anxiety and females being treated for anxiety had the highest risk of being addicted to their smartphone addiction by 75% and 15% respectively. Smartphone addiction was found to strongly predict the psychological discomfort of college students and working people, according to Namwawa & Chanda Chiluba, (2020). A cross-sectional survey in the Nigerian population, sampling 371 respondents using the DASS Scale, smartphone addiction scale and Florida Obsessive Compulsive Disorder Inventory, reported that depression, anxiety, stress, and OCD jointly predicted smartphone dependence. Only anxiety and OCD predicted smartphone dependence individually (Aroyewun & Osinowo, 2019). The part of smartphone addiction in the forecast of mental distress and the part of depression and anxiety in the prediction of smartphone addiction have all been examined in previous studies. However, little is known about how psychological distress relates to smartphone addiction, necessitating more study.

3. Methodology

The research employed a descriptive correlational design, which is a quantitative approach to collect data. Purposive sampling a nonprobability sampling technique was employed to sample the respondents. The target population is university students, and using Yamane's (1967) formula, a sample size of 333 students aged 17-40 years was engaged. Data was collected by use of questionnaires as well as SAS-SV and DASS 21 instruments. Further analysis was done using Statistical Package for Social Sciences (20), Correlation and multiple linear regression tests were performed to test the relationships between psychological distress and smartphones.

4. Results and Discussion

4.1 Correlates of psychological distress and smartphone addiction among university students

The study objective was to establish the correlates of psychological distress and smartphone addiction among university students at Africa International University, Nairobi. Table 9 shows a correlation analysis of the association between psychological distress and smartphone addiction.

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Table 1: Correlation Results

		SPA	Depression	Anxiety	Stress
SPA	Pearson Correlation	1			
	Sig. (2-tailed)				
Depression	Pearson Correlation	.131*	1		
	Sig. (2-tailed)	0.026			
Anxiety	Pearson Correlation	0.103	.779*	1	
	Sig. (2-tailed)	0.081	.000		
Stress	Pearson Correlation	.143*	.775*	.715*	1
	Sig. (2-tailed)	0.015	.000	.000	
	N	288		288	

* Correlation is significant at the 0.05 level (2-tailed).

Table 1 presents a correlation between psychological distress and smartphone addiction. The results showed that depression had a positive and significant association with smartphone addiction among university students (r=0.131, p=0.026). This means that an increase in depression levels among students is accompanied by an increase in smartphone addiction.

The results also showed that stress had a positive and significant association with smartphone addiction among university students (r=0.143, p=0.015). This implies that increase in stress levels among students is accompanied by an increase in smartphone addiction.

The results further showed that anxiety had a positive albeit insignificant association with smartphone addiction among university students (r=0.103, p>0.05). This suggests that anxiety levels did not significantly change with the level of smartphone addiction.

The study findings agreed with Albursan et al. (2022) who found that people affected by psychological and emotional issues like depression, loneliness, distraction, andseparation may very easily become addicted to devices like smartphones.

Regression model was conducted to estimate the relationship between psychological distress and smartphone addiction. The study results are tabulated in Tables 2, 3, and 4.

Table 2: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.406a	0.165	0.162	0.87639

Table 2 presents the model summary results. As indicated, R square was 0.165, implying that psychological distress accounts for 16.5% of total change in smartphone addiction among university students.

Table 3: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	43.395	1	43.395	56.499	.000b
Residual	219.666	286	0.768		
Total	263.062	287			

Table 3 presents analysis of variance results. The F statistics of 56.499 and corresponding p-value of 0.000 <0.05, denoted that the study model was statistically significant. This implied

that psychological distress is a significant predictor of smartphone addiction among university students.

Table 4: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.067	0.133		15.57	0.000
Psychological distress	0.674	0.09	0.406	7.517	0.000

Table 4 presents regression of coefficients. The results showed that psychological distress had a positive and significant effect on smartphone addiction among university students (β=0.674, p=0.000). This suggests that psychological distress increases smartphone addiction among university students. The findings agree with Albursan et al. (2022) who found that people affected by psychological and emotional issues like depression, loneliness, distraction, and separation may very easily become addicted to devices like smartphones.

5. Conclusion

The objective was to establish the correlates of psychological distress and smartphone addiction among university students at Africa International University, Nairobi. From the findings, the study concluded that psychological distress significantly increases smartphone addiction among university students.

6. Recommendations

Course instructors should be trained to assess and refer students who exhibit symptoms of smartphone use to the counseling department for help. Higher learning institutions should periodically conduct training or workshops to create awareness of the impact of psychological distress in relation to smartphone addiction among university students. It is important to promote strategies to reduce psychological distress to avoid the harmful consequences of smartphone addiction.

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