

Smartphone Use Dependency and Psychosocial Well-Being among Students in Selected Universities in Kiambu County, Kenya

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ABSTRACT

Smartphone use dependency has been found to affect the well-being of university students. The current study aimed to examine the relationship between smartphone use dependency and psychosocial well-being among university students in selected universities in Kiambu County, Kenya. The study employed correlational research design. The study was grounded on technological acceptance model and human ecology theories. The study population comprised 1,350 students, from which a sample size of 303 participants was derived using the Krejcie and Morgan formula. A simple random sampling technique was employed to select a sample size of 303 participants. The data was collected using smartphone use scale and psychosocial well-being scale. The collected data was analyzed using descriptive statistics and Pearson correlation analysis with SPSS Version 26. The findings revealed that there was a negative relationship ($r = -.511$, $p = .000 \leq 0.05$) between smartphone use and psychosocial well-being among students in selected universities in Kiambu County, Kenya. The study recommends that university administration need to offer workshops and seminars to educate students on smartphone use effect on mental health challenges, coping mechanisms, and available relevant services. Also, the study recommends an environment to be created in which the students feel free to communicate their concerns and difficulties. This can be accomplished through peer support groups or mentoring programs that improve the overall students well-being. University students may need to be encouraged to spend some quality time with their friends and family rather than spending several hours on smartphone screens. Finally, efforts need to be made to encourage face-to-face encounters in the study groups rather than depending primarily on digital communication via the smartphone.

Keywords: Smartphone Use, psychosocial well-being, University students, Kiambu, Kenya

INTRODUCTION

The prevalence and use of Smartphones as a communication tool is undeniably a global phenomenon. The smartphone allows for a wide range of tasks known as apps (Miller et al., 2021). Everyone regardless of age or gender, has access to Smartphones. People of all ages throughout the world, particularly the elderly, are ingeniously converting Smartphones to work for them, resulting in social, economic, cultural, educational, and health benefits. Miller et al. (2021) in their study, conducted in nine countries throughout Africa, Asia, Europe, and South America, they illustrate that the smartphone today is 'no longer just a technology that we use, it has become the place where we live.

A study conducted in Malaysia by Lai Wei Lee et al. (2023) on problematic smartphone use and psychosocial well-being among university students. This study intended to investigate the frequency and variables related to smartphone addiction among teenagers in Malaysia. The researchers conducted a cross-sectional study with teenagers from 15 primary care clinics across the nation. Respondents' smartphone habits were examined using the Malaysian short version of the Smartphone Addiction Scale (SAS-M-SV). Multiple logistic regression were performed to identify determinants of smartphone addiction among teenagers. The study included 921 teenagers, with 49.6% men ($n = 457$) and 50.4% women ($n = 464$). The findings showed that university students in Malaysia were prone to becoming dependent on smartphone use and were eventually emotionally affected, exhibiting an alarming tendency toward anxiety and depression.

A study by Anwar et al. (2021) from Ziauddin University Pakistan stated that the usage of a smartphone and the amount of time spent on its screen are determined by what one intends to accomplish with it. It also relies on the user's level of discipline. This same study discovered that teenagers' screen time grew by more than 80%, exposing them to hazardous radiation. These investigations continued to suggest that radiation impacts fetal life. This indicates that young people who overuse Smartphones threaten not just themselves physically and mentally, but also the unborn babies in the wombs of young mothers. The argument that smartphone usage is inextricably linked to users' psychosocial well-being is supported by several research studies conducted in various locations to investigate smartphone use's relationship with users' psychosocial well-being. This is especially concerning for people who use these devices for extended periods of time. This is referred to as the 'many screen hours' experience, in which users access a variety of smartphone offerings (Lua, Chua, & Michael Chia, 2023).

A study conducted in Saudi Arabia at Umm Al-Qura University (UQU) found that smartphone misuse and addiction were a developing problem. The qualitative data collected from 33 participants (students and staff) revealed four primary themes: perceptions of smartphone use; reasons for smartphone misuse; negative consequences of smartphone overuse; and solutions for reducing smartphone overuse. Overall, the data revealed that students and faculty had favorable and negative attitudes towards smartphone use. Personal variables, such as prolonged free time and poor self-confidence, as well as avoiding specific social situations, might all contribute to smartphone misuse (Alotaibi et al., 2022). In terms of university students in Africa, Oyende et al. (2020) conducted a study on the addictive use of Smartphones and behavioural disorders such as depression and anxiety among Nigerian undergraduates. The findings showed association between problematic smartphone usage and psychosocial well-being among university students and more so on symptoms of despair and anxiety.

Another survey conducted in Zambia with university students by Chiluba (2020) found that the majority of student respondents were extremely dependent on their smartphones. They stated that they suffered from a condition known as the inability to remain in a room without their smartphones. It's as if the phone has become an essential part of their lives. They reported that the most immediate sentiments they had when they realized they didn't have their smartphone were worry, anxiety, panic, and insecurity. That setting alone would cause them to get restless and lose focus on everything else until they reconnect with the smartphone. Over-dependence on Smartphones is a psychosocial well-being issue, and these kids demonstrated that they had already lost their sense of self-worth and the ability to stand on their own without the devices.

A study conducted in Southern Ethiopian universities by Mengistu et al. (2023) found that students with a history of substance abuse increased the amount of substance abuse caused by increased smartphone use. In many regions, smartphones were the sole method to continue teaching and learning during the pandemic. Thus, in this scenario, university students had a legitimate reason to rely on Smartphones for remote education. Nonetheless, this came with a collateral practice that the study found to have a significant influence on their mental well-being. In Kenya, Wairimu (2020), who investigated the impact of social media and psychological well-being on youths in Nakuru East sub-county. The study focused on young people in general, rather than just university students. The findings suggested that there was a mix of negative and good psychosocial well-being situations. The study demonstrated that smartphone use and the subsequent psychological well-being were dependent on the type of social media platform used. Also, the study demonstrated how Twitter and Facebook were typically good for the psychological well-being of young people. However, the usage of WhatsApp, YouTube, and video games is damaging to the psychological well-being of youngsters.

Kemuma (2019) in a study conducted at Mt. Kenya University in Kiambu County found a positive correlation between problematic smartphone use and depression, anxiety, and stress. This study intended to determine whether the findings from five years ago were still applicable. Companion research by Kamengwa (2022) which particularly examined the psychological well-being of secondary school students in Nairobi County, revealed that smartphone use among these young people had a negative overall influence on their psychological well-being. His study specifically investigated and quantified this influence across six distinct factors: 1) Positive interpersonal connections, 2) Self-acceptance, 3) Environmental mastery, 4) Autonomy, 5) Life Purpose, and 6) Personal Development. It demonstrated that this influence occurred at several levels, with personal growth and self-acceptance serving as the primary drivers. This study focused

on university students in Kiambu County and their psychosocial well-being; nevertheless, psychological and psychosocial well-being are quite comparable, thus the researcher looked at the same occurrence among university students in Kiambu County.

The study was anchored on the Technology Acceptance Model (TAM), developed by Fred Davis in 1989, is the theoretical foundation for understanding and predicting individuals' acceptance and usage of technology within organizational settings. According to Burgess and Worthington (2021), Davis (1989; Davis, Bagozzi, & Warshaw, 1989) developed the Technology Acceptance Model based on the Theories of Reasoned Action and Planned Behaviour, aiming to offer a simple and justified explanation for computer acceptance that can apply to various technologies and user groups. Ideally, TAM revolves around two key factors: perceived usefulness and ease of use. Perceived usefulness refers to the degree to which an individual believes using a particular technology will enhance their performance or productivity. According to Surendran (2012), Davis explains that perceived usefulness refers to the user's belief that using a particular application system will improve their performance, while perceived ease of use relates to the user's expectation that the system will be effortless, with TAM highlighting these factors as crucial in determining system usage.

In the current study on smartphone use and psychosocial well-being among university students in Kiambu County, Kenya, TAM was applied by examining how students perceive Smartphones regarding their usefulness and ease of use. Kalayou et al. (2020) emphasize that TAM is widely recognized as a model that explains how individuals embrace and employ new technologies, highlighting the factors that influence their intention to use these technologies from the perspective of end users. Students of the selected universities in Kiambu County may view smartphones as valuable tools for communication, accessing information, and academic purposes, influencing their frequency and intensity of smartphone use. Additionally, these students may find smartphones easy to use due to their familiarity with technology and intuitive user interfaces, further encouraging smartphone adoption and usage. The model primarily focuses on individual beliefs and attitudes, overlooking other contextual factors that may influence technology acceptance. Marikyan and Papagiannidis (2023) reiterate that TAM's widespread use may have created an impression of progress in Information Systems (IS) research, with studies often echoing previous findings. By doing this, it limits field development and leaves gaps in the existing literature. Hence, TAM's focus on understanding why people adopt technology may overshadow the impact of technology adoption on performance.

Additionally, TAM assumes static concepts of perceived usefulness and ease of use, failing to account for changes over time or external influences that may be responsible for the acceptance of a given technology. It also lacks consideration of external variables, such as social norms, organizational policies, or cultural influences, which may impact technology adoption. This theory is particularly preferred for its outstanding strengths of applying to the understanding of each person's behaviour about dependability which concerns acceptance and usage of a variety of technology appliances (Venkatesh & Davis, 2000). This theory helps to integrate the perceived ease of using the technology and the social influence that generates as the users gain experience or longevity of time spent using the technology which unperceptive modifies the user's behaviour. While TAM provides a valuable framework for understanding technology acceptance behaviours, the researcher was equally cautious of its limitations as the results may not always be automatically determined. That is why a consideration of other complementary theories is of great importance to understand smartphone adoption among university students in Kiambu County, Kenya and the different behaviour patterns that may eventually be observed in the different university students concerning smartphone use and their psychosocial well-being despite similarities in the practice of their excess smartphone use.

Also, the current study was grounded on The Human Ecology Theory (HET), proposed by Urie Bronfenbrenner in 1979, is a foundational model for understanding the interplay between individuals and their environment. This theory posits that human development is influenced by various environmental systems, with individuals being nested within increasingly larger and more complex systems (Guy-Evans, 2024). These systems include the microsystems (such as family and peer groups), mesosystems (interactions between microsystems), exo-systems (external environments indirectly impacting individuals), macrosystems (cultural and societal norms), and chronosystems (changes over time). According to Tyler (2020), human ecology theory emphasizes the bidirectional relationship between individuals and their environment, highlighting how environmental factors shape individual development and vice versa.

For instance, a study investigating the role of psychological capital in family intimacy found that the former serves as a mediator in the connection between family intimacy and adolescent peer relationships, with self-identity playing a positive moderating role in both the direct effects of family intimacy and teenage peer relationships (Zhou et al., 2023). Additionally, studies by Bronfenbrenner himself have demonstrated how broader social and cultural norms embedded within macrosystems impact individuals' development trajectories. According to Tong (2023), unsatisfied with the absence of child development studies directly examining the influence of broader environments, Bronfenbrenner introduced the HET Model to offer a structure and shared terminology for understanding the environment and discerning how interactions and relationships within the ecosystem components may influence children's development. One of the strengths of HET is its comprehensive framework, which considers multiple levels of environmental influence on human behaviour and development. This holistic perspective allows researchers to explore the complex interactions between individuals and their surroundings (Guy-Evans, 2024). However, a limitation of the theory is its complexity, making it challenging to operationalize and apply in research settings. Additionally, HET may overlook the role of individual agency and internal psychological processes in shaping behaviour, focusing primarily on external environmental factors.

HET offers valuable insights into how various environmental factors impact students' smartphone use behaviours and psychosocial outcomes in the context of the study on smartphone use and psychosocial well-being among university students. Zurita (2020) argues that in the ecosystem, where parents' social lives and work dominate, parents may opt for various activities for their children, such as television or other pursuits like sports, arts, or travel. Thus, the choice of media activities sometimes stems from a lack of alternative opportunities in the mesosystem. For example, microsystem influences such as peer pressure and family dynamics may shape students' attitudes toward Smartphone use. In contrast, macrosystem influences such as societal norms and cultural values may influence the acceptability of excessive smartphone use within the broader community. Zurita (2020) emphasizes that the trade-offs youth make in choosing media over other activities suggest that we cannot assume youth's time was spent more productively. Thus, researchers should directly assess what alternative activities are available to youth at different times and places. Typically, these experiences are facilitated by parents and the wider community. Researchers can gain a deeper understanding of the contextual/related influences on students' Smartphone use behaviours and psychosocial well-being by considering these environmental factors.

This theory's strength depends in the first place on its principles that resemble what is already very familiar to people; that is, between the ordinary biological systems in life, and what may be observable or predictable in human societies, or a person's behaviour. For instance, the thoughts, first expressed by Vayda and Rappaport, were presented by Kottak(1999). Even though their findings already date some years, their study continues to stimulate and develop the concepts of ecology within the discussions of contemporary anthropology. These systems eventually account for the way of life of the societies and individual persons. They become the effects of the dictates of the ecological system with a variety of experiences or environmental influences in which they find themselves, or to which they adapt for survival. Among some of the weaknesses of this model is that it cannot be depended on to predict correctly the behaviours of the individual student's behaviour concerning smartphone use and psychosocial well-being solely based on the environmental factors to which the student happens to be exposed. The current study aimed to examine the relationship between smartphone use dependency and psychosocial well-being among university students in selected universities in Kiambu County, Kenya.

METHODOLOGY

The study adopted correlational research design. The design was suitable for the current study because it aimed to examine strategies to curb smartphone use dependency among university students from a mixed method approach. The study was carried out with three private universities in Kiambu County, located in the central region of Kenya. The study population mainly consisted of 1350 students from selected universities in Kiambu County. Through Krejcie and Morgan (1970) formula and simple random sampling, the study employed a sample size of 303 participants.

The data for smartphone use dependency was measured using Smartphone Use Scale (SPSS). The scale has 7 statements on a 2-point Likert scale of 1 = Agree, 2= Disagree, and scores are summed up. The lowest

possible score any participant could get is 7 and the highest score any participant may get is 14. The variable of psychosocial well-being was measured using Psychosocial Well-Being (PWB) scale. It has 7 items of a 5-point Likert scale used to measure psychosocial well-being, and each of the items is scored; give 1 = strongly disagree, 2 = disagree 3 = not sure, 4 = agree, 5 = strongly agree. The highest score any respondent could get was 35, and the lowest was 7. The data collected was analyzed using descriptive statistics and particularly percentages and Pearson correlation with SPSS.

FINDINGS AND DISCUSSIONS

The study was set to examine the relationship between smartphone use dependency and psychosocial well-being among university students in selected universities in Kiambu County, Kenya. The demographic of the participants are presented followed by the findings of the study.

Demographic Characteristics of Student Participants

The study run descriptive statistics to understand the demographic of the participants and the results are presented in table 1.

Table 1: Demographic Characteristics of Student Participants

Gender	Frequency	Percentage
Male	165	58.3%
Female	118	41.7%
Total	283	100.0%
Age		
17-20	33	11.7%
21-25	198	70.0%
25-30	52	18.4%
Total	283	100.0%
Year of Study		
Less than a year	38	13.4%
1-2 years	88	31.1%
3-4 years	157	55.5%
Total	283	100.0%
Total	283	100.0%

The results in Table 1 show that most of the student participants were males 165 (58.3%), while the female participants were 118 (41.7%). In addition, most of the participants 198 (70%) were between the ages of 21-25 years, while the lowest age was 17-20 years, at 33 (11.7%). The year of study revealed that the participants within 3-4 years in the university were 157 (55.5%), while the participants less than a year in the university was 38 (13.4%). Also, three counselors from the three universities were interviewed for qualitative data with an aim of supporting quantitative findings. The counselors were all females their age ranging between 40 to 50 years.

Relationship between Smartphone Use Dependency and Psychosocial Well-Being among Students in Selected Universities in Kiambu County, Kenya

Pearson correlation analysis was carried out to examine the relationship between smartphone use dependency and psychosocial well-being among students in selected Universities in Kiambu County, Kenya and the results are presented in table 2.

Table 2: Smartphone Use Dependency and Psychosocial Well-Being among university Students

		Smartphone Use Dependency	Psychosocial Well-Being
Smartphone Use Dependency	Pearson Correlation	1	-.511**
	Sig. (2-tailed)		.000
	N	283	283
Psychosocial Well-Being	Pearson Correlation	-.511**	1
	Sig. (2-tailed)	.000	
	N	283	283
**. Correlation is significant at the 0.01 level (2-tailed).			

The findings in Table 2, from Pearson correlation analysis showed that there was a negative relationship ($r = -.511$, $p = .000 \leq 0.05$) between smartphone use dependency and psychosocial well-being among students in selected universities in Kiambu County, Kenya. The findings suggest an inverse relationship, which implies that an increase in one variable leads to a decrease in another variable. Thus, an increase in smartphone use dependency leads to a decrease in psychosocial well-being among university students.

The findings of the current study were consistent with existing literature on smartphone use dependency and psychological well-being. For instance, the findings were in alignment with findings of Malaysia by Lai Wei Lee et al. (2023) who conducted a study on problematic smartphone use and psychosocial well-being among university students. This study intended to investigate the frequency and variables related to smartphone addiction among teenagers in Malaysia. The findings showed that university students in Malaysia were prone to becoming dependent on smartphone use and were eventually emotionally affected, exhibiting an alarming tendency toward anxiety and depression. Also, the current findings were supported by the findings of Anwar et al. (2021) from Ziauddin University in Pakistan and discovered that teenagers' screen time grew by more than 80%, exposing them to hazardous radiation. These investigations continued to suggest that radiation impacts fetal life. This indicates that young people who overuse Smartphones threaten not just themselves physically and mentally, but also the unborn babies in the wombs of young mothers.

Furthermore, the findings were supported by findings of Oyende et al. (2020) conducted a study on the addictive use of Smartphones and behavioural disorders such as depression and anxiety among Nigerian undergraduates. The findings showed association between problematic smartphone usage and psychosocial well-being among university students and more so on symptoms of despair and anxiety. Moreover, the findings were supported by the findings of Chiluba (2020) who found that the majority of student respondents were extremely dependent on their smartphones. The students reported to suffer from a condition known as the inability to remain in a room without their smartphones. It's as if the phone has become an essential part of their lives. They reported that the most immediate sentiments they had when they realized they didn't have their smartphone were worry, anxiety, panic, and insecurity. That setting alone would cause them to get restless and lose focus on everything else until they reconnect with the smartphone.

Over-dependence on Smartphones is a psychosocial well-being issue, and these kids demonstrated that they had already lost their sense of self-worth and the ability to stand on their own without the devices.

CONCLUSION

The study concluded there was a negative relationship between smartphone use dependency and psychosocial well-being among students in selected universities in Kiambu County, Kenya indicating an increase in smartphone use dependency leads to a decrease in psychosocial well-being among university students. The study recommends that university administration need to offer workshops and seminars to educate students on smartphone use effect on mental health challenges, coping mechanisms, and available relevant services. Also, the study recommends an environment to be created in which the students feel free to communicate their concerns and difficulties. This can be accomplished through peer support groups or mentoring programs that improve the overall students well-being. University students may need to be encouraged to spend some quality time with their friends and family rather than spending several hours on smartphone screens. Finally, efforts need to be made to encourage face-to-face encounters in the study groups rather than depending primarily on digital communication via the smartphone. The recommends the future studies to consider using mixed method approach in order to explore the lived experiences of university students on smartphone use dependency and their psychosocial well-being. Future research should include universities from different regions to compare smartphone dependency trends across various settings. Long-term studies need to be conducted to examine changes in smartphone use and psychosocial well-being over time.

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