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# Prevalence of Smartphone Use among Students in Selected Universities in Kiambu County, Kenya

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### ABSTRACT

Smartphone use among university students has been a problem of global concern. The study aimed to examine the prevalence of smartphone use among university students in selected universities in Kiambu County, Kenya. The study employed embedded mixed method 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 participants for quantitative strand while purposive sampling was utilized to select 3 university counsellors for the qualitative strand. The quantitative data was collected using Smartphone use Scale while qualitative data was collected using Interview Guide. The quantitative data collected was analysed using descriptive statistics and particularly percentages with SPSS Version 26. The qualitative data was analysed using narrative analysis to support the quantitative findings. The results revealed that 82.7% (n = 234) of participants exhibited high smartphone use prevalence, while 17.3% (n = 49) demonstrated low prevalence. The qualitative findings supported the quantitative findings in that there is high prevalence of smartphone use 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.

**Key Words:** Prevalence, Smartphone Use, University students, Kiambu, Kenya

### INTRODUCTION

The widespread integration of smartphones into daily routines worldwide has surged/rushed in recent years. Driven by remarkable technological progress in the mobile industry since introducing the first publicly accessible smartphone in 2007, these advancements have rendered smartphones more affordable and user-friendly, fuelling their widespread adoption and contributing to a substantial rise in smartphone usage globally (Alotaibi et al., 2022). Existing literature attempts to bridge the gap between the extensive adoption of the technology and when it becomes problematic, affecting mental and physical health. A study to assess the degree to which university students experience problematic smartphone usage (PSU) and identify any discernible patterns or predictive factors found that the occurrence of problematic smartphone usage (PSU) among university students as presented in the systematic review that summarizes the findings indicating that 37% to 66% of university students suffer from PSU (Candussi, Kabir & Sivasubramanian, 2023).

In the USA, a study was conducted by Spiratos and Ratanasiripong (2023), which investigated problematic smartphone use among high school students. The sample size of the study was 319 high school students. The females were 57.1%, while males were 42.9%. It was reported that 78. % of the students were in high prevalence of smartphone use while in class, and 79% of the students had a high prevalence of smartphone use while outside the class. It was further found that 19% of students were always distracted and 64% were somewhat distracted by the smartphone when completing work outside the classroom. Additionally, 61% of students specified having the phone next to the bed or on the bed when sleeping. Also, 22% of students reported spending and 44% reported probably spending too much time on their smartphone. Also, 23% of male high school students have Problematic Smartphone Use and 21% of female students have Problematic Smartphone Use.

In Malaysia, a study was carried out by Radzla et al. (2023) which investigated excessive smartphone usage among students in public universities. A cross-sectional study which involved a sample of 200 students. The majority of respondents were in the age range of 22 to 23. Reports revealed 90% of a high prevalence of smartphone use among students. It was further reported that 77% of students use them for more than five hours per day, while most of the students (64.5%) agree that they use their smartphones for social networking. It was also revealed that 40% of students use their smartphones for 5–6 hours every day, compared to 17.5% who only use them for 3–4 hours. According to the findings, 21.0% of smartphone users spend between five and six hours and 19.0% spend between seven and eight hours per week using their device.

In Nigeria, a study was conducted by Nakkudu and Dipeolu (2023) which examined smartphone addiction and perceived health effect among students. A cross-sectional survey design as well as multi-stage sampling technique were adopted to select 250 students from the University in Ibadan. Respondents' age was  $26.9 \pm 2.4$  years, 52.8% were males, and 81.2% were single. The study found that smartphone use prevalence was at 61.2%. In addition, the majority (73.6%) had a negative attitude towards smartphone use. Most (83.6%) perceived smartphone addiction affects sleep quality, and 76.8% perceived smartphone addiction negatively affects academic performance. The study suggests the need for interventions to reduce smartphone addiction and improve attitudes and usage patterns among university students. As argued by Hootsuite (2020), mobile phone penetration among adults in Kenya was 98%, with 43% of adults using the internet (96% of them on smartphones rather than computers) and 17% using social media (98% of them on smartphones). University students account for a large section of these adult Kenyans who have and use the smartphone as a necessary gadget for life. Kenya has seen a broad uptake of mobile technology, with higher phone penetration than the global average (67%) and near-universal use of mobile banking through M-PESA (as of 2016, 96% of Kenyan households).

A study conducted in Kenya by Kibuacha (2021), reported that most of Kenya's technological innovation has been centred on the mobile phone. The Kenya Digital Report found that 97% of all internet users in Kenya access the internet on mobile phones, with Kenyans spending over four and a half hours every day using the internet on their phones. The mobile internet penetration rate in Kenya at 27% of the people, representing one of the highest five-year growth rates in Africa. The growth in mobile internet use in Kenya correlates with a rise in smartphone usage, driven by the emergence of cheaper smartphones and a relatively young population, among whom are university students, actively looking for information and connection online. This prevalence of smartphones has gradually made Kenya a favourite launchpad for several mobile-based services, including mobile money, targeting the entire East African region.

A study by Ong'are (2021) examined the relationship between problematic smartphone use and social anxiety among university students in Kenya. A total sample size of 106 (73 female and 33 males) participated in the study. The participants had a mean age of 28 years old ( $SD = 0.587$ ). The findings of the study indicated that 58.5% of the students had moderate level of smartphone use. The findings showed that there was no significant gender difference  $t(104) = 0.696$ ,  $p = 0.346$ , between males ( $M = 23.85$ ,  $SD = 6.63$ ) and females ( $M = 22.96$ ,  $SD = 5.84$ ) in relation to problematic smartphone use. The current study aimed to examine the prevalence of smartphone use among university students in selected universities in Kiambu County, Kenya.

## METHODOLOGY

The study adopted embedded mixed method research design. The design was suitable for the current study because it aimed to examine the prevalence of smartphone use among university students and qualitative findings were used to support the quantitative findings. The study was carried out with three 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.

In addition, using purposive sampling, 3 university counsellors were selected to participate in the study for qualitative strand. The quantitative data was collected using Smartphone use Scale while qualitative data was collected using Interview Guide. The questionnaire was based on a four-point Likert scale ranging from strongly disagree (1) to strongly agree (4). The lowest possible score any participant could get is 7 and the highest score any participant may get is 14. The prevalence of smartphone scores were 1-6 (low prevalence of smartphone use), 7-14 (high prevalence of smartphone use). The collected quantitative data was analyzed using descriptive statistics and particularly percentages with SPSS. On the other hand, qualitative data was analyzed using narrative analysis.

## FINDINGS AND DISCUSSIONS

The study was set to examine the prevalence of smartphone use 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%
<b>Year of Study</b>		
Less than a year	38	13.4%
1-2 years	88	31.1%
3-4 years	157	55.5%
Total	283	100.0%
<b>Total</b>	<b>283</b>	<b>100.0%</b>

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.

#### Prevalence of Smartphone Use among Students in Selected Universities in Kiambu County, Kenya

The objective of this study was to examine the prevalence of smartphone use among students in selected universities in Kiambu County, Kenya. A descriptive statistical score was carried out and results are presented in table 2.

Table 2: Prevalence of Smartphone Use among Students

Prevalence	Frequency	Percentage
High	234	82.7%
Low	49	17.3%
Total	283	100%

The findings in table 2 revealed that a majority (82.7%,  $n = 234$ ) of the participants in selected universities in Kiambu County Kenya, scored a high prevalence of smartphone use, while 49 (17.3%) of the participants had low prevalence of smartphone use. These findings suggest that the students have high interaction with their smartphones. The quantitative findings were supported by qualitative data from the counselors who were interviewed. For instance, one of the interviewed counselors said,

It's very high, most students are always on their smartphones even when it is not necessary. For example, when in the Church. Others can use their smartphones in the exam room even when they are aware that it is not allowed which can lead to cancellation of their exams. Others have lost touch with face-to-face interactions with their family members and in the social set-up (P2, female, 20<sup>th</sup> September 2024).

Furthermore, the findings were echoed by another counselor who said,

Yes, it is quite high. Students cannot stay without their smartphones. It is part of their lives; some have been sharing with me that, they cannot concentrate during lectures without their smartphones. Others share that they prefer to be on their smartphones and watch programs of their choice than to be with their colleagues (P3, Female, 21<sup>st</sup> September 2024).

The findings of the current study revealed that a majority (82.7%,  $n = 234$ ) of the participants in selected universities in Kiambu County Kenya, scored a high prevalence of smartphone use, while 49 (17.3%) of the participants had low prevalence of smartphone use. The findings of the current study were consistent with the findings of Spiratos and Ratanasiripong (2023) who conducted a study in the USA focusing on problematic smartphone use among high school students. The findings revealed that 78. % of the students had in high prevalence of smartphone use while in class, and 79% of the students had in high prevalence of smartphone use while outside the class. Also, the current findings were further supported by findings of Radzla et al. (2023) who conducted a study in Malaysia to investigate excessive smartphone usage among students in public universities. Reports revealed 90% of a high prevalence of smartphone use among students. Moreover, the results reported that 77% of students use their phones for more than five hours per day, while most of the students (64.5%) agree that they use their smartphones for social networking. The findings of the current study align with the study by Nakkudu and Dipeolu (2023) in Nigeria, whose study examined smartphone addiction and perceived health effects among students. The study found that smartphone use prevalence was at 61.2%.

On the other hand, the current findings contradicted the findings of Ong'are and Nyangwencha (2022) who conducted a study in Kenya to examine the relationship between problematic smartphone use and social anxiety among university students. The findings of the study indicated that 58.5% of the students had a moderate level of smartphone use. While the current study reported a high prevalence of smartphone use among university students in selected universities in Kiambu County Kenya, the finding by Ong'are and Nyangwencha (2022) revealed that most of the students had moderate

smartphone use. The findings of this study indicating a high prevalence (82.7%,  $n = 234$ ) of smartphone use may be an issue of concern it can lead to possibility of maladaptive behaviors in line with the psychosocial well-being indicators arising from smartphone use among university students.

Contrarily to negative outcome of smartphone use, studies have shown positive outcome of smartphone use among the university students. It is hardly refutable that smartphone use has aided communication and educational information sharing. Smartphone use has linked students to having access to many social media platforms namely WhatsApp, Twitter, Facebook, Instagram and You Tube. Smartphone devices are making individuals capable of performing more tasks every day and in an easy manner such as sharing educational information, booking a travel ticket, and accessing academic databases. As indicated by some students who participated in the study, smartphone are indeed offering more comfort to people in terms of communication, just as had already been noted by Kamengwa (2022). This is more supported by Laksmi (2016), who argued that a smartphone is a good tool considering the benefit it gives to users in terms of access to easy ways of communication.

Further, based on the possible reasons for the high prevalence of smartphone use among students, as was found out by this study, it is in agreement with other previous studies that show that smartphone prevalence, especially among students is an undisputed fact. Pew Research Center (2021) asserted that smartphones have become more affordable, making them accessible to a wider range of students. Many educational institutions also support or provide devices, further promoting usage. In addition, Smahel and Brown (2020) argue that smartphones enable constant communication through social media and messaging apps, which are integral to students' social lives. This connectivity fosters a sense of belonging and community among peers. Students use smartphones as tools for learning. With a plethora of educational apps, access to online resources, and the ability to connect with educators, smartphones have become essential for academic success (Katz et al., 2023).

A high prevalence of smartphone use among university students, as the findings of this study show, was not only for educational purposes, but also for entertainment and leisure: As evidenced from the study findings, smartphones serve as primary sources of entertainment, providing access to games, videos, and music, which are crucial for relaxation. This is the same fact that was argued by Smith and Duggan (2020) who claimed that multifunctional nature of smartphones allows students to manage various aspects of their lives, from scheduling classes to budgeting, making them indispensable tools in students' daily routines

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## CONCLUSION

The conclusion of the study is that there is high prevalence of smartphone use among university students in Kiambu County Kenya. This means majority of university students have high interaction with their smartphones. The quantitative findings were supported by qualitative data from the counselors who were interviewed. The counselors reported high use of smartphone among university students even when it is not necessary leading to cheating in exams and cancellation of exam results. The high prevalence of smartphone use also leads to loss of touch with face-to-face interactions with significant others. The over use of smartphone may lead to lack of concentration in lectures leading to poor academic performance.

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## RECOMMENDATIONS

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.

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