



The Power of Smartphone Use in Enhancing Psychological Well-Being of University Students

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Abstract

Smartphones are considered a necessity in students' campus life globally. Several research findings show that students use them for their daily communication, social networking, entertainment, and research, among many others as the main uses. However, there is scanty documentation on its use as an avenue for psychological well-being. The objective of this research was to assess the awareness level of the usability of smartphones for the psychological well-being of university students. This study adopted the cross-sectional survey research design and mixed methods approach. A random sample size of 365 university students of years 2 and 3 from the 4 schools of Rongo University and 10 student counselors of Rongo University were involved in data collection. Quantitative data was collected by use of questionnaires while qualitative data was collected by use of interview guide. Quantitative data was analyzed descriptively into percentages, means, and standard deviations, while the inferential statistical analysis used was t-test and correlation. The analyzed findings were presented in the form of tables. The qualitative data was analyzed through a thematic approach and then triangulated with the quantitative data findings in the discussion. The study established that there is a statistically significant moderate positive influence ($r=.391$) of the awareness level of usability of smartphones on the psychological well-being of university students ($p = .000$) at an alpha value of .05. The research findings concluded that awareness level of usability of smartphones can moderately and positively influence the psychological well-being of university students. Thus the study recommended that universities should focus on awareness creation of the usability of smartphones in their students to enhance their psychological well-being.

Keywords: Awareness, Smartphones, Usability, Well-being.

INTRODUCTION

“A smartphone is a mobile phone with a high-resolution touchscreen display, Wi-Fi connectivity, web browsing capabilities, and the ability to accept sophisticated



applications,” (Alfawereh & Jusoh, 2017). The researchers further noted that smartphones have become part of every person’s life and that people have adopted them to facilitate their activities in everyday life. “From a global perspective, China has the highest number of users about 920 million, followed by India, Brazil, and the USA,” (Statista, 2020). “The progressive growth that has been witnessed by the various continents has contributed to the improvement in economic and societal welfare over the decades,” (World Bank, 2017).

Whereas psychological well-being involves subjective, social, health-related behaviors and practices that add meaning to an individual’s life, allowing them to attain their maximum potential (Friedman, 2017), it is measured through a life satisfaction level scale (Gao & McClellan, 2018). Therefore, there was a need to study the aspects of the contentment of individuals in their usage of gadgets.

Because the awareness level of smartphone usability is the comprehension dangers of smartphone use (Alfawereh & Jusoh, 2017), Friedman (2017) noted a high prevalence (17%) of “nomophobia” (abbreviated form of “no mobile phone phobia”) at University of Harvard, USA and Damota *et al* (2019) recently noted even an increasing prevalence (17.5%) among students in Ethiopian Universities and described “nomophobia” as the anxieties or feelings of discomfort of losing or being temporary without one’s mobile phones, Ongek and Onjoro (2020) related it to the excessive usability skills of mobile phones and made suggestions for further studies to be done focusing on awareness creation and usability skills in addressing psychological well-being using smartphones as they realized that students who have lower scores on the Flourishing Scale could resort to excessive smartphone use as a coping strategy to deal with negative emotions. There was a need to do more research to fill this gap.

Though several research findings reveal an increasing trend in the use of smartphones, there is very scanty documented evidence of its use for psychological well-being amongst university students. Such research findings could help address the increasing cases of suicide attempts among students mostly associated with depression, academic pressure, alcohol and substance abuse, financial hardships, loneliness, and intimate relationships (Rongo University Dean of Students, 2022). This situation concurs with the findings of Oyoo *et al* (2017) who noted that negative factors are the root cause of psychological status at the onset of students’ unrest and this can have specific manifestations like the ones noted. Given the students’ lifestyle at the university and their close connection to their mobile phones, there was a need to find nearby solution to their psychological problems hence the need for the research. Therefore the objective of this study was to assess the level of awareness of university students regarding the usability of smartphones for enhancing psychological well-being. The objective was guided



by the research question; what is the level of awareness among university students regarding the usability of smartphones for enhancing their psychological well-being?

A mixed-method research approach which included both quantitative and qualitative components was used in the study to best address the research objective stated. In this approach, the researcher first collected and analyzed the quantitative numeric data from university student respondents thereafter, qualitative text data was collected from student counselors and analyzed to help explain or elaborate on the quantitative results obtained in the first phase (Creswell, 2018). The two phases were then connected in the intermediate stage of the study. The qualitative data and their analysis refined and explained those statistical results by exploring participants' views in more depth (Creswell, 2018).

The target population was second and third-year university students who were in session for the September to December 2023 semester in all four schools at Rongo University, that is; School of Education, School of Arts, Social Sciences and Business, School of Information, Communication and Media Studies and lastly School of Science, Agriculture and Environmental Studies. The two-year groups were targeted by the study since the influence of smartphone use on the psychological well-being of students was evidenced in the second and third years of their study (Hilder, 2019). Rongo University has a total of 4066 active second- and third-year students who enrolled for the 2022/2023 academic year (Rongo University Admissions Report, 2023). The study also targeted 10 student counselors within Rongo University.

Determination of the sample size was achieved through the application of Taro Yamane's formula which has an assumption of error value of .05. The study therefore had a sample size made up of 365 university students from the 4 schools within Rongo University and 10 students' counselors.

PILOT STUDY

The researcher conducted a pilot study to assess how reliable the research instrument was. The pilot study was conducted among second and third-year Rongo University students who were not involved in actual data collection as recommended by Mugenda and Mugenda (2018). The pilot study included 17 third-year and 21 second-year Rongo University students. According to Mugenda and Mugenda (2017), 10 percent of the sample size was appropriate for piloting. During the piloting, the school's notification was done by issuing introductory letters to the deans of schools. Participants were requested to sit in a secluded area and issued consent forms. Thereafter the participants were issued with the questionnaires to be filled in as appropriate. Each participant took approximately 10 minutes to fill in the questionnaire.

Validity and Reliability of Research Instruments



To ensure the validity and reliability of research instruments, data collection tools were pretested among respondents from Rongo University. The researcher was careful not to use the same respondents for data collection. To avoid cases of students duplicating answers from fellow students who were accessed first, data was collected at the same period.

Validity of Research Instruments

Kothari (2008) describes instrument validity to be measuring the level of satisfaction of the instrument to the needs of the study. In achieving satisfying content validity, the experts from the educational psychology department critically evaluated the questionnaires and advised the researcher to readdress confusing and vague questions. Once the necessary revisions were made; a final version of the measurement instrument was created by the researcher which had a stronger content validity index of .714 and this met the threshold of .70 (Peterson, 2016).

Once content validity was established, researchers moved on to assessing construct validity through factor analysis (Frankel, 2016). "Factor analysis essentially allowed researchers to see how different items on a measure related to each other and how those items clustered together to form a larger construct," (Gros & Jonhson, 2018). Face validity was ensured by comparing the instrument with another known standardized instrument.

RELIABILITY TEST OF RESEARCH INSTRUMENTS

Snyder (2019) defines reliability as the level to which a research instrument provides reliable data and results after recurrent endeavors. In the test re-test approach, the same test was administered to the same group of individuals at two different times; one week after the other. Then, the correlation coefficient between the scores of the two assessments was calculated. The approach was preferred because the results obtained could be compared to determine the consistency or stability of the tool over time (Snyder, 2019). Kothari (2014) asserted that "in a case where the instruments offered, gave a desired reliability Cronbach's alpha (α) coefficient of .7, the instrument was regarded effective whereas in a case where the apparatus yielded less than a reliability coefficient of .7," the researcher would need to reserve the same as highlighted by Mugenda and Mugenda (2017). A reliability coefficient of .7513 was realized and this was above the threshold reliability coefficient of .7 in most Social Science applications (Peterson, 2016).

DATA COLLECTION TECHNIQUES

Briefing of the respondents was done by the researcher. The researcher provided a highlight of the rationale for the study and the importance of data collection. The quantitative data was gathered by a set of questionnaires for the respondents. A time limit was set for the questionnaires to be distributed and recalled after two



days from the time they were issued. Drop and pick method was used by the researcher to collect the data. Qualitative data on the other hand was collected from student counselors by use of interview guides. Each counselor was given 20-30 minutes to complete the interview.

RESULTS AND DISCUSSIONS

In the research objective, the study sought to assess the level of awareness among University students regarding the usability of smartphones for enhancing their psychological well-being. To achieve this, the respondents were probed on the awareness level of usability of smartphones on their psychological well-being. The responses to this research question are presented in Table 1.

Table 1: Awareness Level of Usability of Smartphones on Psychological Well-Being

Aspects of Level of Awareness of Usability of Smartphones on Psychological Well-Being	RATINGS					M	S D	Correlations (Pearson, 2 Tailed)($\alpha = .05$)
	NA 1	SA 2	MA 3	VA 4	EA 5			
The use of smartphones affects the psychological well-being of university students	29(10%)	32(11.1%)	63(21.8%)	98(33.9%)	67(23.2%)	3.49	1.24	$r = -.162$, $p = .006$
The use of smartphones leads to addiction and withdrawal	21(7.3%)	28(9.7%)	37(12.8%)	120(41.5%)	83(28.7%)	3.75	1.18	$r = .063$, $p = .287$
The use of smartphones leads to addiction and daily life disturbances	20(6.9%)	27(9.3%)	58(20.1%)	105(36.3%)	79(27.3%)	3.68	1.17	$r = .149$, $p = .011$
Problematic smartphone use affects learning negatively	28(9.7%)	47(16.3%)	65(22.5%)	84(29.1%)	65(22.5%)	3.38	1.20	$r = .180$, $p = .002$
Problematic smartphone use leads to depression and sleep disturbances	30(10.4%)	35(12.1%)	54(18.7%)	96(33.2%)	74(25.6%)	3.52	1.27	$r = .231$, $p = .000$
Problematic smartphone use leads to anxiety and social isolation	33(11.4%)	37(12.8%)	56(19.3%)	100(34.3%)	63(21.8%)	3.43	1.27	$r = .131$, $p = .026$
Being aware of the potential positive effects of smartphone use has a higher level of life satisfaction	28(9.7%)	19(6.6%)	70(24.1%)	89(30.8%)	83(28.7%)	3.62	1.23	Used for correlating with the other sub-variables



In Table 1, (33.9%) were very aware that the use of smartphones affects the psychological well-being of university students. Another 23.2 percent of the respondents were excellently aware that the use of smartphones affects the psychological well-being of university students. Generally, the mean rating of how the level of awareness of this construct influences the psychological well-being of University students was 3.49 (out of a maximum possible of 5) and a standard deviation of 1.242. The study finding supports the findings of Ni *et al* (2021), and Joshi *et al* (2023) that, “proper use of smartphones may contribute to psychological wellness.” Therefore the findings were in line with the findings that smartphone use influences the psychological well-being of university students. Qualitative data from the interviews indicated that respondents (Student Counsellor) also confirmed that, smartphone use influences the psychological well-being of university students. The findings appeared thematically and some of the themes that came up were self-confidence and emotional coherence; smartphone addiction, anxiety and withdrawal; and life satisfaction. The respondents agreed that self-confidence is the ability of University students to accept and trust themselves and have a sense of control in life and that emotional coherence occurs when changes in students’ emotional components occur at the same time. During an interview with the student counselors, SC3 said that:

“Students who own smartphones at the university appear happy and have the right attitude towards them. This implies that they are capable of self-handling their psychological and emotional issues and as such, they can cope with personal challenges.”

The views imply that happiness brought about by owning a smartphone among the students helps them perceive themselves concerning their experience with the environment and this ultimately puts them in a better position to manage their psychological and emotional problems in the best way they know possible. From Table 1, the majority of the respondents (41.5%) were very aware that the ‘Use of smartphones leads to addiction and withdrawal of university students.’ A small percentage of 28.7 of the respondents were excellently aware that the use of smartphones leads to addiction and withdrawal of university students. In general, the mean rating of how the level of awareness of this construct influences the psychological well-being of university students is 3.75 (out of a maximum possible of 5) and a standard deviation of 1.182. The results support that of Meena *et al* (2021) that, “excessive use of smartphones affects the psychological well-being of university students.” It was therefore concluded that the use of smartphones leads to addiction and withdrawal in university students as most of the students felt restless whenever they did not have their smartphones or withdrawn from their peers leading to psychological distress.



Smartphone Addiction, Anxiety, and Withdrawal were other themes that came up during the interview. Smartphone addiction includes when University students never or rarely turn their devices off, sleeping with the device nearby, and having sound-based notifications turned on while anxiety is a normal reaction to stress due to losing or lacking the smartphone. Withdrawal on the other hand is associated with feelings of rejection from peers when a student can no longer connect with them through smartphone apps. Results from interview excerpts by student counselors equally confirmed that there is a close link between smartphone use, addiction, anxiety, and withdrawal. This was expressed by SC7 that:

“Smartphone is not a bad thing but when overused, they can lead to so many problems not only for university students but also university community at large. The addiction associated with smartphone overuse and over-reliance can lead to the withdrawal of students from class activities including lesson attendance.”

The sentiments state that smartphones are good when utilized moderately. Therefore, the university should advocate for awareness of moderate smartphone use among students.

From Table 1, the majority of the respondents (36.3%) were very aware that the ‘Use of smartphones leads to addiction and daily life disturbances of university students’. The daily life disturbances on campus include; poor time management due to the overuse of smartphones, relationship problems caused by smartphone illicit information, and psychological disturbances among others. Further, 27.3 percent of the respondents were excellently aware that the use of smartphones leads to addiction and daily life disturbances in university students. More so, the mean rating of how level of awareness of this construct influencing the psychological well-being of university students is 3.68 (out of a maximum possible mean rating of 5) and a standard deviation of 1.171. In the findings of Li *et al* (2018), “smartphone addiction leads to potential negative effects of smartphone use, such as sleep disturbances and isolation.” In short, quantitative findings confirm that the use of smartphones may lead to addiction and daily life disturbances in university students. Qualitative data results shed more light on the quantitative findings when SC10 discussed that:

“It is not clear to me whether smartphone usage can lead to addiction and daily life disturbances of university students but what I do know is that life without a smartphone is so funny in this modern era. Students should possess smartphones because smartphones help students to do a lot and achieve more.”

The discussions confirm that smartphone use may or may not lead to addiction or life disturbances as most of the students who relied on their smartphones did not show much life disturbances but in extreme cases, the students would actively create their social media feeds which warned their platforms whenever harmful contents were detected.



From Table 1, the majority of the respondents (29.1%) were very aware that ‘Problematic smartphone use affects learning negatively of university students’. In addition, 22.5 percent of the respondents were excellently aware that problematic use of smartphones affects learning negatively among university students. Overall, the mean rating of how awareness of this construct influences the psychological well-being of university students is 3.38 (out of a maximum possible mean rating of 5) and a standard deviation of 1.20. The findings support that of Hilder (2019) who noted that; “there is a positive correlation between problematic smartphone use, anxiety, depression, and stress affects learning.” From the quantitative findings, it can be noted that too much reliance on smartphones for assignments, exams, or general internet use may block memory from its active functions hence affecting learning and performance. Qualitative data analyzed developed a theme of smartphone usage leading to a decline in study time. SC2 had a narrative verbatim that:

“Spending excessive time on social media platforms, playing games, or engaging in non-educational activities on phones can lead to a decline in study time and a lack of engagement with academic materials. Spending too much time on social media platforms is not only misleading but confusing, too. It also distracts them from their studies as students wish to spend more time with their phones than their books.”

The sentiments indicate how problematic smartphone use affects learning negatively among university students. Students who use their cell phones during class lectures tend to write down less information, recall less information, and perform worse in tests than those students who abstain from using their phones during class. Students should therefore organize how they spend time on their smartphones.

From Table 1, the majority of the respondents (33.2%) were very aware that ‘Problematic smartphone use leads to depression and sleep disturbances of university students’. Another 25.6 percent of the respondents were excellently aware that problematic use of smartphones leads to depression and sleep disturbances in university students; this suggests the need for more advocacies on this. Overall, the mean rating of how awareness of this construct influences the psychological well-being of university students is 3.52 (out of a maximum possible mean rating of 5) and a standard deviation of 1.278, implying that there were some divergent views from the respondents on this. This finding concurs with that of Li *et al* (2018) who also noted that “problematic smartphone use leads to depression, sleep disturbances, and social isolation.” From quantitative findings, it can be noted that problematic smartphone use leads to depression and sleep disturbances in university students as the students tend to surf till late at night depriving them of enough sleep. Findings from the interview schedule also revealed a similar theme that, problematic smartphone use can lead to depression and sleep disturbances in university students. SC3 verbatim on this was that:

“Though students find it easy to spend too much time on their phones, it becomes



too dangerous as smartphones deprive them of their sleep. They tend to lose focus and their memories tend to suffer greatly. The students then become depressed and sleepy during the day.”

The discussions are clear that too much use of smartphones can cause restlessness and depression as well. As the students spend too much time on their smartphones, they indulge in sleepless nights causing loss of focus in their daily activities.

From Table 1, a simple majority of the respondents (34.6%) were very aware that ‘Problematic smartphone use leads to anxiety and social isolation of university students.’ In addition, 21.8 percent of the respondents were excellently aware that problematic use of smartphones leads to anxiety and social isolation of university students; this suggests the need for more advocacies on this. Generally, the mean rating of how awareness of this construct influences the psychological well-being of university students is 3.43 (out of a maximum possible mean rating of 5) and a standard deviation of 1.276. The findings concur with those of Annoni *et al* (2021) who deduced that, “social anxiety is significantly and positively related to problematic smartphone use.” Therefore, problematic smartphone use leads to anxiety and social isolation in university students since most of the students confine themselves to the use of their smartphones as compared to in-person interactions. Results from qualitative findings also confirm that problematic smartphone use leads to anxiety and social isolation of university students as was manifested by SC7:

“Anxiety is one of the most common mental health problems that are correlated with smartphone addiction. Anxiety and social isolation are negative impacts of smartphone addiction on mental health leading to different student problems.”

The sentiments indicate that smartphone addiction can lead to anxiety and social isolation especially when addiction is out of control. Students who exhibit anxiety-related problems were found to be inseparable from their smartphones.

From Table 1, the majority of the respondents (30.8%) were very aware that ‘Being aware of potential positive effects of smartphone use has a higher level of life satisfaction of university students.’ Generally, the mean rating of how awareness of this construct influences the psychological well-being of university students is 3.62 (out of a maximum possible mean rating of 5) and a standard deviation of 1.236. This finding concurs with Suldo *et al* (2019) who noted that “individuals who were aware of the potential positive effects of smartphone use such as increasing efficiency in daily life had higher levels of life satisfaction.” From the interviews, a theme of life satisfaction emerged and the respondents all agreed that ‘life satisfaction’ is an evaluation of a student's quality of life associated with ownership of a smartphone. It is assessed in terms of mood, relationship satisfaction, achieved goals, self-concepts, and self-perceived ability to cope with campus life. During the interview with the



student counselors; SC5 had this to say:

“Students who possess smartphones find life satisfying; they believe in themselves and their abilities. They tend to enjoy staying on campus, interacting freely with others, find learning appealing, and appear happier most of the time.”

The views suggest that owning a smartphone leads to life satisfaction. Students who view the use of smartphones as satisfying were psychologically confident about their campus endeavors and as such utilize the smartphones for academic performance.

Table 2: Overall Awareness Level of Smartphone Use on Psychological Well-being

Independent Variable	Inferential Statistical Test	Correlation with ‘being aware of potential positive use having a higher level of life satisfaction
Awareness level of Smartphone use	Pearson Correlation	.391
	Set Sig. (2-tailed)(α)	.05
	Observed P value	.000

Table 2 shows how the overall awareness level of smartphone use influences the psychological well-being of university students. The findings show that when alpha (α) is set at .05, there is moderate and positive influence ($r = .391$) of smartphone use on the psychological well-being of university students. There is enough statistical evidence (observed $P = .000$) to support a significant influence in the larger population based on university students in general.



**Table 3: T-test on the awareness Level of Respondent MR t-test ($\alpha = .05$)
Different Respondents and Psychological Well-being**

Preventive approach

Smartphone use affects the psychological well-being of university students	Year 2	3.59	t(287)= 1.505, p = .133
	Year 3	3.38	
Smartphone use leads to addiction and withdrawal	Year 2	3.82	t(287) = 1.062, p= .289
	Year 3	3.67	
Smartphone use leads to addiction and daily life disturbances	Year 2	3.70	t(287)=.325, p=.745
	Year 3	3.65	
Problematic Smartphone use affects learning negatively	Year 2	3.44	t(287) = .860, p =.390
	Year 3	3.32	
Problematic Smartphone use leads to depression and sleep disturbances	Year 2	3.54	t(t(287) = .287, p =.774
	Year 3	3.49	
Problematic smartphone use leads to anxiety and social isolation	Year 2	3.45	t(287) = .358, p=.721
	Year 3	3.40	
Being aware of the potential positive effects of smartphone use has a higher level of life satisfaction	Year 2	3.55	t(287)= -1.077,p =.282
	Year 3	3.71	

Table 3 shows that the observed difference between the mean ratings of year 2 and year 3 respondents' views is not statistically significant, in all the aspects of awareness level and psychological well-being (since $p > .05$). The resulting or observed p values are all greater than the set alpha (.05) for all the sub variable groups hence there is insufficient statistical evidence to dispute that their views on the level of awareness of the aspects of psychological well-being were different.

CONCLUSION AND RECOMMENDATION

The study findings concluded that smartphone's awareness level of usability positively and moderately influences the psychological well-being of university students ($r = .391$; $p = .000$) at .05 significant levels. The study therefore recommended that adequate advocacy measures should be put in place by the individual university organs (Directorate of Dean of Students) for this to be realized.

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