THE FINANCIAL AND ACADEMIC IMPLICATIONS OF USING SMARTPHONES AMONG STUDENTS: A QUANTITATIVE STUDY

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ABSTRACT

Smartphones present students (users) with great opportunities to be connected with peers and lecturers in sharing academic knowledge during and after lectures. It also allows them to engage in social networking discussions and dialogue on different topics and ideas. This paper presents the financial implications of smartphone usage on student's finance, especially the case of South Africa. Students are mostly financially dependent on their parents, sponsors and others for financial benefits in their academic pursuit. This entails that students' financial base is mostly limited and the cost of a good smartphone is very high in developing countries like South Africa. This study involves a total sample size of 376 from the population of 11,265 registered students in 2017. The study found that university students spent a lot in buying airtime and data bundle to recharge their smartphones.

Keywords: Smartphone Usage, Data Bundle, University Students, Students, South Africa, Smartphones.

INTRODUCTION

Over two decades, technology has been changing lives and has become an essential part of everyday life for many people. Technology has transformed the cell phone usage, especially on smartphones. The rapid usage of smartphones for entertainment, personal, business, educational and other purpose makes it an integral part of life (Alson & Misagal, 2016). The usage of a smartphone is no longer new as the technology gained direct and indirect impact on university students. A number of studies have been carried out on smartphone usage to explore its impacts, data traffic but little is known on the financial implication of smartphone usage by the university students.

The use of smartphone has a great impact on the society at large including the academic well-being of students. In order to use the smartphones adequately, data bundles and air time are required to get connected to the Internet. According to Deloitte (2012), the consumption of data by smartphones reshapes ways and operation of individuals and businesses. It has become daily necessity and lifeline for many people and businesses in carrying out their continuous daily activities.

Kibona and Rugina (2015) believe that smartphones have the potential in contributing to improved communication and connection between students and lecturers. This indicates that smartphone supports teaching and learning process in more advanced manner. Many studies have been conducted on the impact, influence and potential of smartphones on daily lives and on students' academic performances. A study by Uys, Mia, Jensen, Van Der Schyff, Josias, Khusu, Gierdien, Leukes, Faltein, Gihwala, Theunissen and Samsodien (2012), found that many studies

have been done on "data traffic" of a smartphone, its battery-life, the method of usage, and the applications. These studies have failed to explore the financial and academic implications of smartphones on the students. Most importantly, various students use smartphones for numerous reasons ranging from personal to educational purposes. However, the effective use of these smartphones by students lies on data bundle. Currently, the cost of data bundle in South Africa (SA) is high compared to other developing countries in the continent and elsewhere. The nature of the data price has a direct and indirect impact on students' finances. According to Calandro, Gillwald and Stork (2012), prepaid data and airtime in South Africa are far higher than in Namibia. The objective of this study is to explore the financial and academic implications of using smartphones among students at the North-West University, Mafikeng Campus.

LITERATURE REVIEW

Financial Implication of Smartphone Usage among Students

Students basically are financially dependent in nature, it is believed that a great percentage of their finances come from parents, scholarships and bursaries. Most times, these funds are directly channelled to the academic purse of the institution leaving the student with a little amount of the miscellaneous expense. Having a smartphone depends on the financial capacity of students which was identified by Lee (2014) as one of the factors influencing the adoption of smartphones. Smartphone maintenance is an extra cost to every student, but the inherent technological advantage has made it to be a necessity. The acquisition of a smartphone and connecting it to the Internet has become a commonly observed phenomenon among students. These smartphones have intensified the functions of mobile services and computer services into one, with much functionality e.g. (high-performance processor, fast accelerated graphics units, high-quality touch panel, large capacity memory and high pixels camera) embedded in the device. Students check email, browse Facebook, read the news and watch streaming video online on their smartphones anytime and anywhere.

Smartphone usage has touched almost all the areas of human life, without any doubt, smartphones have improved the lives of students in so many ways. According to Lee (2014), students among other users are a prominent set of individuals that have promoted the usage of smartphones. Mansour (2016) identified that the popularity of mobile Internet technologies (MIT), which smartphones are categorised under, is noticeably increasing among university students. To have an optimal performance of programs in the smartphone, it has to be enabled via Airtime, Data Bundle or Wi-Fi which have cost implications, depending on the telecommunication network the student is using. Thus, the following section evaluates the cost implications of smartphone usage among students in North West University.

Cost of Owning and Maintaining a Smartphone

To have an in-depth study on the cost implication of smartphone usage among students in North West University, it is important to examine the product prices of different smartphones and the components that come with it as well as the performance enabling component. Assorted smartphone products (e.g. iPhone, Black Berry, Samsung, Huawei, Nokia, Vodafone, Sony, LG, Lenovo, HTC and others) and its components exist in South African phone gadget shops as well as online. Each of this smartphone products come with its own unique cost. In most cases, the two ways product price comes to play, which involves high-priced product and low-priced brand depending on the unique nature of the product (Suki, 2013). Smartphone owners also use

channels such as mobile coupons, apps, QR codes, text messages, links to information videos, and mobile display ads to compare prices among retailers and research products on their smartphones. Furthermore, they are willing to spend a large amount on their devices depending on the features that they are looking for. Product prices are considered as one of the great factors that influence consumers' buying decisions and the sales margin (Suki, 2013).

Nevertheless, the least price one can get for a good smartphone is R1000.00 and this is excluding the cost of the enablement components which comes in different forms such as airtime, data bundle etc. Thus, programs enablers such as Airtime and Data bundles which are quantified in ZAR deplete very fast as one browse the internet. The Wi-Fi modem cost up to R600.00 depending on the telecommunication network and plan. Most times, smartphone shoppers are left with two different options;

- Outright buying which enables entitlement to own the smartphone from the point of purchase. Though in this option, one can put a reasonable pitch in your wallet, at least you own the phone. Outright buying gives the shopper the opportunity to switch to any product that has the cheapest phone plan and feel free make a swap anytime.
- Buying on a plan (i.e., contract) gives the shopper the opportunity to own the smartphone without outright payment. The shopper makes payment on instalment over a period of time; sometimes it could be up to two years depending on the terms of the contract. The downside of this is that the smartphone shopper will be responsible for the instalment throughout the period of the contract. Invariably, this option seems expensive in the long run as the client may have paid double of the original price before the expiration of the contract.

Basically, the technological nature of a smartphone creates continuous expenditure to the user over time in the cause of the usage.

Cost Effect of Owning a Smartphone on Student's

The period of young adulthood involves a significant life transition typically associated with an increased financial responsibility (Archuleta, Dale & Spann, 2013). Previous research on debt and mental health of university students suggested that there should be a critical study focus on the financial and psychological well-being of university students (Archuleta et al., 2013). Most of these students are living outside their home for the first time and are prone to financial management challenges (Dixon & Wilson, 2014). Furthermore, debt has been associated with a decreased sense of financial well-being and higher reported levels of overall stress (Norvilitis, Merwin, Osberg, Roehling, Young & Kamas, 2006).

In the face of owning and maintaining a smartphone, the students can be financial depressed when the fund budgeted for most academic activities has been diverted to miscellaneous expenses like data bundles and airtime. As such, that particular academic project will be left undone, causing a slowdown in the academic activity of the student within the academic period. There is the probability of incurring unexpected debt due to the misuse of fund available to carry out academic works. As earlier pointed, the use of smartphones creates continuous expenses for the user. In the course of keeping the apps running on the smartphone, students go beyond their financial limit by borrowing funds (air time) either from friends or from the network provider. This debt automatically creates a burden on the student (Lim, Heckman, Montalto & Letkiewicz, 2014). More so, there is an opportunity of having low savings as they cannot do without smartphones and gadgets and maintenance. Despite the potential burdens and

implications associated with owning and maintaining a smartphone, students ceaselessly continued to bear themselves this cost.

Smartphone and Data Bundle in South Africa

Technology is changing lives and societies. The technological development in South Africa is occurring mostly in mobile technology; however, the advancement is hampered by challenges such as data bundle, air time and infrastructures (Beger & Sinha, 2012). According to Kreutzer (2008), South African young generations (especially students) have adopted mobile technology use more especially low-cost cell phones and applications (apps) with the power of the Internet. The Internet can be regarded as the engine for sourcing electronic information which serves as a lifeline for many people, businesses and even government. The level of Internet and technology penetration on yearly basis is growing fast in South Africa (Thakur & Singh, 2013), but the Internet and data bundle prices remain not transparent and high compared to other countries on the continent (Calandro et al., 2012).

Nonetheless, the Internet growth rate is far higher than most countries on the continent (Africa) with major players like Vodacom, MTN, Virgin Mobile, CellC and Telkom Mobile (8ta) in the provision of the Internet and other mobile services. A study carried out by Thakur and Singh (2013) revealed that South Africa has "2,698 bank branches, 8,785 automatic teller machines (ATMs) and no fewer than 109,454 point-of-sale (POS) devices" banking infrastructure. While Beger and Sinha (2012) reported that the Internet connection in South Africa started in 1988 but has remained below 10% growth till 2009 and 12.30% in 2010. Despite the height of the Internet penetration in South Africa, data bundle, voice and video pricing remain more expensive compared to other countries (Calandro et al., 2012). Again Calandro et al. (2012) state, the new entrant CellC and Telkom Mobile all push to reduce prices but big operators like Vodacom and MTN still maintain relatively high price rates.

Over two decades, the mobile-digital-divide and inequality are fast disappearing. In support to this, Kreutzer (2009) suggests that over 60% of young South Africans within the ages of 16 have cell phones compared to 18% in 2000. The study shows two kinds of recharging mobile phones: contracts and prepaid but a majority of the people favour prepaid (Beger & Sinha, 2012). The prepaid service is mostly used by low-income earners, disadvantaged communities and households (Beger & Sinha, 2012) including students. According to Statistic South Africa (2011), a household without income in South Africa decreased from 23.2% to 15.5% between 2001 and 2011, however, 15% of the households have no form of income while middle and upper-income categories households have increased within 2001 to 2011. While Beger and Sinha (2012), revealed ownership of mobile phone at 72.9% in 2007. Kreutzer (2009) attributes the growth on low-cost of cell phones and data subscriptions in the country. Furthermore, the findings of Beger and Sinha (2012) indicates that from 2005-2009, phone penetration in South Africa increased by 20%, presently, the cell phone penetration is sitting at 100.48% in the country. The mobile technology penetration in South Africa has been actively adopted by the young generation between 15 to 24 years accounting to 72% ownership in the country and third mobile subscriber on the African continent after Nigeria and Egypt (Beger & Sinha, 2012).

Impact of Smartphone on Education

As mentioned earlier, the evolution of smartphone encouraged educational institutions, ministries, teachers, departments and decision-makers to accept the device for academic teaching and learning purposes. Learning is a life-long process from birth to death. The practical nature of learning needed the push from conventional (four-wall or classroom learning) to convenient learning (distance or online learning). Through smartphones, students across the world exist in a small village with access to common information and learning materials. Jesse (2015) suggests that 99.8% of students have smartphones while they make it a necessity in life (Gowthami & Kumar, 2016). Alson and Misagal (2016) and Gowthami and Kumar (2016) state that smartphone for many students have become a necessity and need for their everyday life.

The evolution of smartphones has changed the cell phone landscape from a passive tool for social communication to learning aid (system) to boost teaching and learning process. It can be said that smartphone offers good opportunities for students (Alson & Misagal, 2016; Kreutzer, 2008). Kibona and Rugina (2015) affirm that smartphones can be regarded as an entertainment hub with the functionality for playing audio, watching videos, social networking, and blogging. Alternatively, Lundquist, Lefebvre and Garramone (2014) believed that entertainment hub, commerce nature and instance communication of smartphone have made it an essential technology of the "twenty-first century. The ability of this device to be turned into entertainment hub could be distractive to learners if mismanaged. Smartphones come in different makes like Blackberry, Itel, Tecno, Samsung, iPhone, HTC and much more. The manufacturers may differ, the service they provide are more or less the same. Primarily, many students use their smartphones for texting than calls (Jesse, 2015).

The ability of a smartphone to perform like computer means that learners and teachers can use it to communicate and interact with each other at anytime and anyplace (Kibona & Rugina, 2015). It allows learners/students to have access to learning materials and other forms of learning information. In this regard, Kibona and Rugina (2015) posit smartphone as "dual-sided blade" which implies that it assists the users with high financial implications. Learners' usage of smartphones to engage in studies has a direct impact on their academic performance (Kibona & Rugina, 2015; Jesse, 2015). Smartphone effects concentration (Jesse, 2015) which has positive or negative impacts. However, there is the mixed reaction among scholars on the impact of the smartphone on institutions as some believe that it assists students to perform well while others suggest that it hinders students to obtain higher grades (Kibona & Rugina, 2015).

It can be concluded that the presence of smartphones in educational sectors plays positive and negative impacts on the users. According to Lundquist, Lefebvre and Garramone (2014) and Jesse (2015), researchers have suggested on the huge impact of smartphones on the users because of handheld size to fit into the pocket and mobility to anywhere than sitting before the computer in checking social media sites. At this point, facts have proven that the introduction of smartphones in educational pursuits worth investing though Alson and Misagal (2016), posit that students have not utilised the full potentials of a smartphone. Nonetheless, the benefits attached to smartphones are huge but disadvantages also exist (Abu-Shanah & Haddad, 2015).

Positive Impact of Smartphones on Education

Smartphones provide the world with instant access to social and visual reality (Lundquist et al., 2014). It added a new dimension for students (users) locating lecture halls and venues and tagging their locations for students to locate them. The positive impacts of smartphones for

students are massive when it is utilised effectively. Smartphone link teachers and students into a common platform to discuss academic issues (Kibona & Rugina, 2015), also the communication sector has improved due to the usage of smartphones.

Kibona and Rugina (2015) believe that smartphones assist students to search for academic information's as quickly as possible and to get updates on school assignments. It also allows students to prepare PowerPoint slides, taking notes, sending notices, sending emails and searching for articles to ensure academic excellence. Universities also use the technology to keep in touch with students sending them notice and announcement (Alson & Misagal, 2016). This means that the smartphones are mobile classrooms that enable the students to study from anywhere. The study also found that students' academic lives are changing through smartphones regarding the methods of collecting and analysing information, methods of assessment, their interaction with teachers and other students (Kibona & Rugina, 2015; Jesse, 2015).

Kibona and Rugina (2015) further state that smartphones have changed teachers' ways, style and strategies of teaching and engagement with students, it also changed policies across educational sectors. According to Lundquist et al. (2014), using smartphones benefits students in connecting with their fellow student, families and strangers due to Facebook, Twitter and WhatsApp applications.

Negative Impact of Smartphone on Education

Smartphones have the propensity of having negative implications on the users if not managed properly, implying that it can make lives more challenging. Research conducted at the University of Western Cape revealed that most students using smartphone spent 5 h daily on their phone (Uys et al., 2012). While Kibona and Mgaya (2015) believed that addictive abuse of smartphones usage by students is problematic in using applications like WhatsApp, Facebook, Twitter and others. According to Kibona and Rugina (2015), students neglect to use smartphones to solve academic related matters have endangered their chances to perform excellently in their academic pursuit as many hours are spent on social networking. The misuse of technology and its applications in education among students is regarded as addiction (Kibona & Mgaya, 2015). Then, Jesse (2015) argued that smartphone usage among students have brought dissuasion as 80% of students play and send a text with smartphones while learning in the classroom. It also increases security risks as the majority of students engage in serious relationships with unfamiliar people they met on the internet as well as schedule appointments to meet, which distracts them from actively engaging in their school activities (Jesse, 2015).

The concentration of students using smartphones drops both in the classroom and off classroom than those without smartphones (Alson & Misagal, 2016; Jesse, 2015). Smartphone user's performance level is low compared to those that use mobile phones (Jesse, 2015; Alson & Misagal, 2016). According to Kibona and Rugina (2015), 62% of participants in a study believe that they write down notes while in lecture-room and it lead to a higher performance. Smartphones and its apps can distort students' concentration as they text and play music while waiting or walking on the road, this always lead to distractions and lack of focus. Abu-Shanab and Haddad (2015) affirms that smartphone usage among students causes health problem like a continuous headache, neck pains also a loss of sleep, limb pains and addiction.

RESEARCH METHODOLOGY

This study adopted a quantitative research methodology using the questionnaire as a data collecting instrument. A sample of (378) respondents was drawn from the population of registered students in the North-West University Mafikeng Campus in 2017 through a convenient sampling method which enabled the selection of respondents through convenience and accessibility. The statistical computations and analysis are presented in the subsequent sections below.

DATA ANALYSIS

Data analysis was done using the Statistical Package for Social Sciences (SPSS) and was presented using figures, tables, charts, percentages and frequencies. The statistical analyses applied in this study to investigate the relationships existing among variables include chi-square test of independence and test of correlations.

Demographic Questions

From the descriptive statistical analysis, it was found that 64 (30.9%) of the participants were Male while 143 (69.1%) are Female. On the home language, the study found that 17 (8.2%) of the participants speaks English, followed by Northern Sotho at 12 (5.8%) and the highest were Setswana-speaking people at 141 (68.1%). The study also identified that 101 (48.8%) of the participant's age were 17-21, 87 (42.0%) are between 22-26 years, followed by 14 (6.8%) and the least was 5 (2.4%) between 32 years onwards. The race of the participants shows that 196 (94.7%) are Blacks, 6 (2.9%) were Coloured, Indian/Asian at 4 (1.9%) while White at 1 (0.5%). The finding proves the location of the campus which is Mahikeng the homeland of Setswana's and black South African. Based on the academic level of the participants, it was found that 97 (46.9%) were first-year students, followed by 46 (22.2%) third years and 41 (19.8%) for postgraduates and others were minor. Then, it is recorded that majorities were first years who heavily depend on their parents or sponsors for financial assistance.

Family Income of the Respondent

This question was aimed at determining the household's income categories of the participants' family.
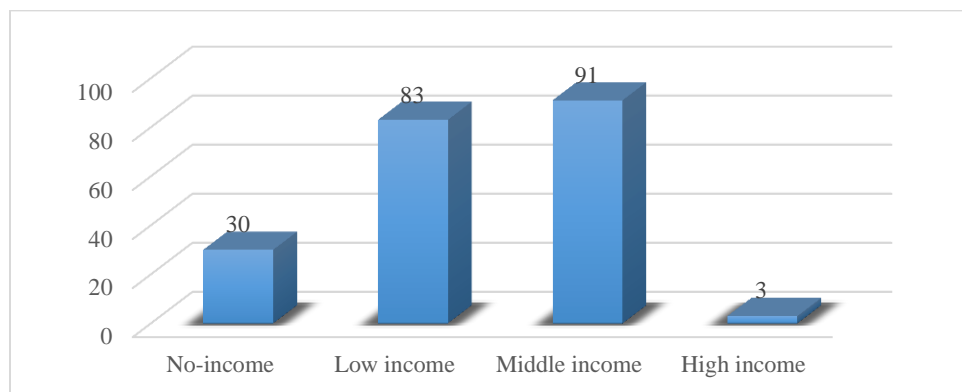
Figure 1
FAMILY INCOME PER MONTH

According to Figure 1 findings, 30 (14.5%) of the participants are coming from households where there is no source of income monthly, 83 (40.1%) are in the category of low-income, 91 (44.0%) are categorised under the middle-income bracket and 3 (1.4%) are from households with high-income level. The findings indicate that most participants at NWU, Mafikeng campus are coming from middle-income household's bracket. Table 1 was dedicated to determining the provider(s) of smartphone data bundle for the participants.

Table 1 STUDENTS SMARTPHONES DATA BUNDLE			
		Responses	
		N	Percent
1	Parents	60	29.0%
2	Yourself	118	57.0%
3	Other family members (not parents)	20	9.7%
4	Boyfriend/girlfriend	22	10.6%

The results show that 60 (29.0%) of the respondents receive their data bundle from parents, 118 (57.0%) bought their data bundle by themselves, 20 (9.7%) receive from other family members while 22 (10.6%) receive their data bundle from boyfriend/girlfriend. This is an indication that many of the respondents provide themselves with data bundle through the pocket money they receive. Figure 2 presents data on the monthly pocket money received by the participants.
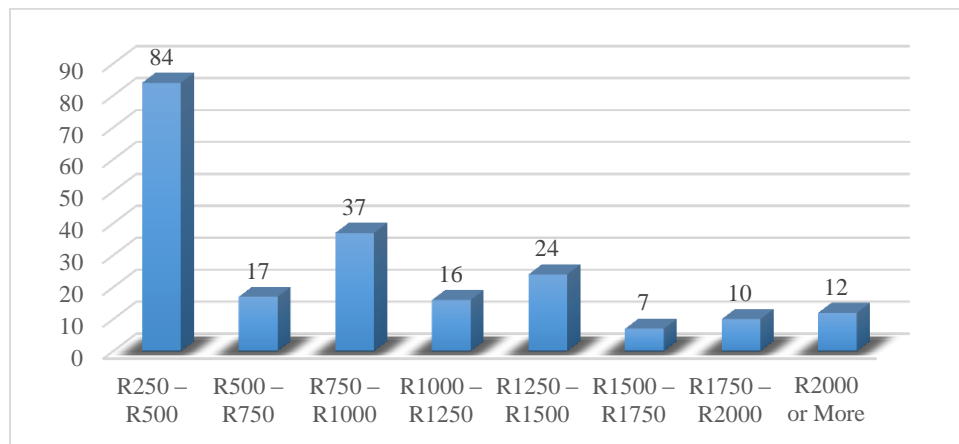
Figure 2
HOW MUCH STUDENTS RECEIVE A STIPEND (POCKET MONEY) PER MONTH

Figure 2 depicts that 84 (40.6%) of the participants receives between R250-R500 as pocket money monthly while 37 (17.9%) receives R750-R1000 monthly and the rest follows as shown on the chart (Figure 2). The range of pocket money received monthly can be aligned to the income household's level of the participants. Table 2 research question seeks to determine the brand of smartphone used by the participants.

| Table 2 THE BRAND OF SMARTPHONE USED			
What brand of smartphone do you use?			
		Responses	
		N	Percent
1	Blackberry	18	8.7%
2	Nokia	10	4.8%
3	Samsung	78	37.7%
4	iPhone	5	2.4%
5	Sony	7	3.4%
6	Mobicell	18	8.7%
7	Vodaphone	22	10.6%
8	Lenovo	1	0.5%
9	Huawei	20	9.7%
10	LG	1	0.5%
11	ZTE	8	3.9%
12	Others (List them)	19	9.2%

The findings from Table 2 indicates that Samsung remains the most used smartphone by the participants at 78 (37.7%) followed by 22 (10.6%) for Vodaphone while 20 (9.7%) prefers Huawei brand. The findings prove that Samsung stands out to be the preferred smartphone brand used by participants.

In accordance with Table 3, this question seeks to determine the activities participants engage on their smartphones against any brand used.

Table 3 STUDENTS USING SMARTPHONE			
What do you use your smartphone for?			
		Responses	
		N	Percent
1	Make calls	31	15%
2	Social networking	25	12.1%
3	SMS	6	2.9%
4	Keep numbers	4	1.9%
5	All the above	163	78.7%

The findings indicate that 163 (78.7%) suggests that participants use their smartphones to perform all kinds of activities listed in Table 3. But the major activity is on making calls and followed by social networking. In simple terms, the study found that participants use their

smartphones firstly to make calls, social networking, SMS and keeping contacts. The question Figure 3 aimed to understand the number of minutes and hours participants spent on their smartphones daily.
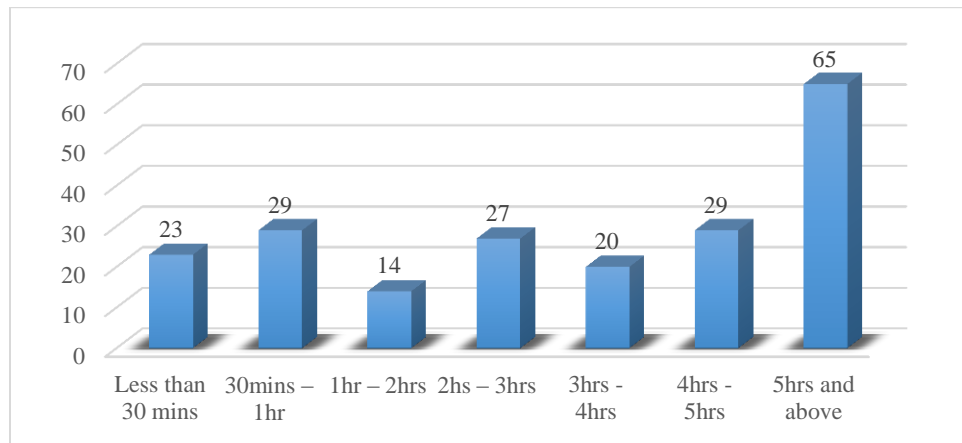
Figure 3
HOW MUCH TIME DO YOU SPEND ON YOUR SMARTPHONE DAILY?

Figure 3 implies that 65 (31.4%) of the participants spend above 5 h daily performing different activities on their smartphone. While some spent 30 min to an 1 h, 4 h to 5 h and other 2 h to 3 h daily 27 (13.0%) and 29 (14.0%), respectively. The findings show that participants spent hours daily navigating through their smartphones for various activities and reasons. This question presents to understand the actual time range participants usually or mostly use their smartphones for different activities and task.

Table 4 THE MOST TIME AVAILABLE ON SMARTPHONE What time do you usually or mostly use your smartphone?		
	Responses	
	N	**Percent**
1 12 am-3 am	15	7.2%
2 3 am-6 am	9	4.3%
3 6 am-9 am	18	8.7%
4 9 am-12 pm	36	17.4%
5 12 pm-3 pm	22	10.6%
6 3 pm-6 pm	27	13%
7 6 pm-9 pm	67	32.4%
8 9 pm-12 am	50	24.2%

It was indicated that 67 (32.4%) of the participants usually use their smartphone between 6 pm-9 pm, followed by 50 (24.2%) between 9 pm-12 am and others as indicated in Table 4

above. This demonstrated that participants use more of their smartphones mostly after hours (off-peak time).

The Table 5 below question seeks to determine their favourite or preferred smartphone application(s) in use.

| Table 5 THE FAVOURITE OR PREFERRED SMARTPHONE APPLICATION(S) IN USE			
What are your favorite smartphone application(s) you use?			
		Responses	
		N	Percent
1	Banking applications	17	8.2%
2	News application(s)	27	13%
3	Download application(s)	41	19.8%
4	Gaming application(s)	16	7.7%
5	Educational application(s)	80	38.6%
6	Social networking application(s)	130	62.8%

Table 5 indicates that 130 (62.8%) of the participants favours or use more of social networking application(s), 80 (38.6%) uses educational application(s) and followed by 41 (19.8%) using download application(s) and the rest follows. The finding implies that students use social networking applications more than any other kinds of smartphones applications.

As the social networking application remained the most used application by students on daily basis, Table 6 seeks to determine the most favoured application(s) used by participants on daily basis.

Table 6 THE FAVOURITE SOCIAL NETWORKING SITES OR APPLICATIONS STUDENTS VISIT DAILY ONTHEIR SMARTPHONE			
What are your favorite social networking sites or applications you visit daily on your smartphone?			
		Responses	
		N	Percent
1	Facebook	123	59.4%
2	Twitter	33	15.9%
3	Instagram	64	30.9%
4	Pinterest	3	1.4%
5	WhatsApp	157	75.8%
6	Imo	12	5.8%
7	BBM	5	2.4%
8	YouTube	80	38.6%
9	LinkedIn	14	6.8%

10	Badoo	2	1%
11	Hangout	2	1%
12	Vibe	2	1%
13	WeChat	5	2.4%

According to the findings in Table 6, 157 (75.8%) of the participants preferred using WhatsApp application, 123 (59.4%) favours Facebook, while 80 (38.6%) uses YouTube in their daily lives and other follows as indicated in Table 6 above. The findings demonstrate that WhatsApp is the most daily used social networking application by students (participants) even in the developing country like South Africa. The use of smartphone brings financial burden or implications on the students; Figure 4 tries to ascertain how much participants spent monthly on their data bundle
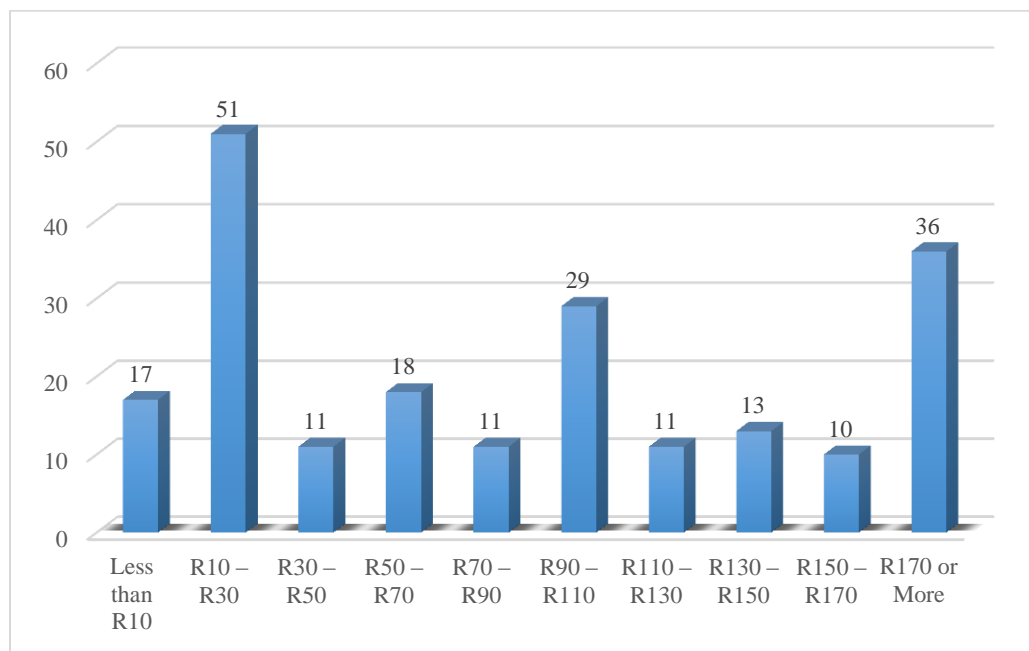
Figure 4
HOW MUCH STUDENTS SPEND ON DATA BUNDLE MONTHLY

The findings indicate that 51 (24.6%) of the respondents spent R10-R30 on data bundle monthly and 29 (14.0%) spent on R90-R110 while 36 (17.4%) spent R170 or more monthly. In the findings, it shows that many are not spending more data bundle due to the presence of Wi-Fi on campus.

Family (Household) Income per Month and Pocket Money Monthly

The chi-square table on Table 7 tests the degree of linkage between the family income of the participants monthly and their pocket money monthly. The hypothesis is tested at the alpha level of 0.05 significance.

Table 7 FAMILY (HOUSEHOLD) INCOME PER MONTH AND POCKET MONEY MONTHLY			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	78.269[a]	21	.000
Likelihood Ratio	73.422	21	.000
Linear-by-Linear Association	47.951	1	.000
N of Valid Cases	207		

H0: There is no relationship between participant's family income and their pocket money received monthly (null hypothesis).

H1: There is a relationship between participant's family income and their pocket money received monthly (alternate hypothesis).

Table 7 contained chi-square distribution table test with 21 degrees of freedom in the row and the value of X2 at 78.269. The probability levels and the alpha significance level used are 0.05. The p-value of 0.000 is less than the significance level of 0.05 (p<0.05), then, the null hypothesis is rejected and alternate hypothesis accepted.

H1: The accepted alternate hypothesis is that participant's family (household) income impact on the level of pocket money they received monthly.

Family (Household) Income per Month and Using Smartphone

Table 8 below is a chi-square tables to tests the degree of relationship between the monthly family income of the participants and using or owning a smartphone. The hypothesis test alpha is at a significance level of 0.05.

Table 8 FAMILY (HOUSEHOLD) INCOME PER MONTH AND USING SMARTPHONE			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.421[a]	3	.010
Likelihood Ratio	12.621	3	.006
Linear-by-Linear Association	10.608	1	.001
N of Valid Cases	207		

H0: There is no relationship between participant's family income and using smartphone (null hypothesis)

H1: There is a relationship between participant's family income and using smartphones (alternate hypothesis).

Table 8 chi-square distribution table test with 3 degrees of freedom in the value of X2 at 11.421. The probability levels and the alpha significance level are used at 0.05. According to Table 8, the p-value of 0.010 is less than the significance level of 0.05 (p<0.05), then, the null hypothesis is rejected.

H1: The alternate hypothesis is accepted that participant's family (household) income impact on the participants owning or using the smartphone(s).

		Table 9 FAMILY INCOME PER MONTH AND HOW MUCH RECEIVE AS POCKET MONEY MONTHLY							
		Where do you rate your family income per month? * How much do you receive as pocket money monthly?							
		How much do you receive as pocket money monthly?							
		R250-R500	**R500-R750**	**R750-R1000**	**R1000-R1250**	**R1250-R1500**	**R1500-R1750**	**R1750-R2000**	**R2000 or More**	**Total**
Where do you rate your family income per month?	No-income	22	2	2	1	2	1	0	0	30
	Low income	46	8	17	3	5	2	1	1	83
	Middle income	16	7	18	12	16	4	9	9	91
	High income	0	0	0	0	1	0	0	2	3
Total		84	17	37	16	24	7	10	12	207

Table 8 above presented chi-square and the alternate hypothesis was accepted which shows that students (participants) family income monthly impacts on the kind monthly stipend they received while Table 9 cross tabulation add to understand the number of participants impacted. It is visible on Table 9 that participants receiving between R250-R500 monthly are more on a low-income family (household) bracket at 46. This implies that low-income family (household) participants depend on little pocket money monthly for their upkeeps. While no-income family (household) participants at 22 also receive between R250-R500 monthly but their monthly pocket can't increase while low income-family participants' pocket money is pliable and can increase.

Table 9 also shows that middle-income family (household) participants (students) have more flexible monthly pocket money across all pocket money range. The indication on Table 9 is aligned to Figure 1 above which shows that majority of the participants are from middle-income family's (households). It is shown that the bigger the family (household) income, the bigger the pocket money for the students (participants).

		Table 10 TIME SPENT ON SMARTPHONE DAILY AND HOW MUCH SPENT ON DATA BUNDLE MONTHLY									
		How much time do you spend on your smartphone daily? (Figure 3) * How much do you spend on data bundle monthly? (Figure 4)									
		How much do you spend on data bundle monthly?									
		Less than R10	**R10-R30**	**R30-R50**	**R50-R70**	**R70-R90**	**R90-R110**	**R110-R130**	**R130-R150**	**R150-R170**	**R170 or More**	**Total**
How much time do you spend on your	Less than 30 min	7	8	2	2	2	1	0	0	0	1	23
	30 min-	4	13	3	1	0	4	1	0	0	3	29

smartphone daily?	1 h											
	1-h-2 h	0	5	1	1	0	2	1	2	0	2	14
	2 h-3 h	1	7	1	3	3	5	1	1	1	4	27
	3 h-4 h	0	5	0	0	0	4	3	0	3	5	20
	4 h-5 h	2	4	1	3	4	2	2	4	2	5	29
	5 h and above	3	9	3	8	2	11	3	6	4	16	65
Total		17	51	11	18	11	29	11	13	10	36	207

Table 10 presents a cross-tabulation to examine the relationship between how much time participants spent on their smartphone daily (Figure 3) and how much they spent on data monthly (Figure 4). Table 10 shows that 13 participants spent between 30 min-1 h daily on their smartphone and spend R10-R30 on data monthly. In total, participants who spent between 30 min-1 h and R10-R30 on data monthly are 29.

The Table 10 also found that participants who spent 5 h and above spend more on data bundle and their spending are flexible and they are 65. Also, those that spend 5 h and above use more than R170 on data bundle monthly. This cross-tabulation when aligned with Figure 4 above shows that more participants who spend 30 min-1 h and 5 h and above use their smartphones and more data bundle as a result of increased time online. In summary, Table 10 cross-tabulation indicates that the more hours spent on the smartphone also increases the amount of data bundle to be spent.

Table 11 FAMILY INCOME PER MONTH AND TIME SPENT ON SMARTPHONE DAILY									
Where do you rate your family income per month? (Figure 1) * How much time do you spend on your smartphone daily? (Figure 3)									
		How much time do you spend on your smartphone daily?							
		Less than 30 min	30 min-1 h	1 h-2 h	2 h-3 h	3 h-4 h	4 h-5 h	5 h and above	Total
Where do you rate your family income per month?	No-income	5	7	4	2	1	4	7	30
	Low-income	12	15	5	8	5	13	25	83
	Middle-income	6	7	4	17	13	12	32	91

	High-income	0	0	1	0	1	0	1	3
Total		23	29	14	27	20	29	65	207

The findings in Figures 1 and 3 show that most of the participants were from middle-income families, spending more 5 h daily on their smartphone. The cross tabulation on Table 11 compared the association between family income per month and time spent on smartphone daily by the participants. The Table 11 shows that a total number of 32 of the participants are from middle-income households spending over 5 h daily on their smartphones, while 32 were low income and 7 from no-income households and spending over 5 h daily. The cross tabulation shows that the bigger the household income, the more hours participants (students) spend on their smartphone daily.

Usage of Smartphone Data

The smart phone is data or Wi-Fi dependent on being able to function effectively. This section seeks to understand the mobile network data or service provider participant's use and the nature of activities they spend those data online. Table 12 presents the different cell phone service providers in South Africa.

Table 12 THE MOBILE NETWORK PROVIDERS USED			
Which of the mobile network provider do you use?			
		Responses	
		N	**Percent**
1	MTN	93	44.9%
2	Vodacom	77	37.2%
3	CellC	53	25.6%
4	Telkom mobile (8ta)	7	3.4%
5	Virgin mobile	3	1.4%

The table indicates the sequential arrangement of the most used mobile network providers by the participants. Table 12 shows that the majority of the participants use MTN and prefer it while others follow. The Table 13 below shows the reasons for using smartphone data.

Table 13 THE REASON FOR USING SMARTPHONE DATA			
What do you use your smartphone data for? (You can tick more than one)			
		Responses	
		N	**Percent**
1	Downloading music/songs, videos or ringtones	65	31.4%
2	Check for news or weather online	48	23.2%
3	Send and receive email	93	44.9%

| 4	Instant messaging applications (apps)	81	39.1%
5	Checking about a hobby or interest	19	9.2%
6	Checking for school information's	111	53.6%
7	Checking for health or medical information's	36	17.4%
8	Information on further education	54	26.1%
9	Downloading movies	18	8.7%
10	Downloading books.	39	18.8%
11	All the above	38	18.4%

According to Table 13, 111 (53.6%) of the participants uses their smartphone data to check school information's, 93 (44.9%) use it for their email related issues while 65 (31.4%) use it for downloading music/songs/videos or ringtones and others. The findings prove that participants use their smartphone data for academic and non-academic related activities but more on academic.

Limitations in Using Smartphone as a Student

The use of smartphones by students in the developed and developing countries goes with negative and positive impact. These impacts can cause some from not effectively using it or not using it all. This section of the study seeks to understand those limitations. However, it was found that 181 (87.4%) of the participants in this study have access to smartphones and their use for different activities as indicated while 26 (12.6%) does not have access to a smartphone. The lack of access must be due to reasons.

Table 14 USING YOUR SMARTPHONE IS CHEAP, EXPENSIVE AND NORMAL					
Do you think using your smartphone is:					
Construct	**Agree**	**Strongly agree**	**Disagreed**	**Strongly disagree**	**Missing**
Expensive	65	64	17	6	55
	31.4%	30.9%	8.2%	2.9%	26.6%
Cheap	20	14	22	20	131
	9.7%	6.8%	10.6%	9.7%	63.3%
Normal	35	19	14	14	121
	16.9%	9.2%	6.8%	6.8%	60.4%

The accessibility of smartphones by students is influenced by a number of reasons including the price. Then, this question on Table 14 seeks to determine the perception of the participant on the price. It was recorded from Table 14 that 65 (31.4%) and 64 (30.9%) of the participants suggested that smartphones are expensive (agree and strongly agree respectively). While 35 (16.9%) agree that the price of smartphones is normal to them and 20 (9.7%) also agree that smartphones cheap.
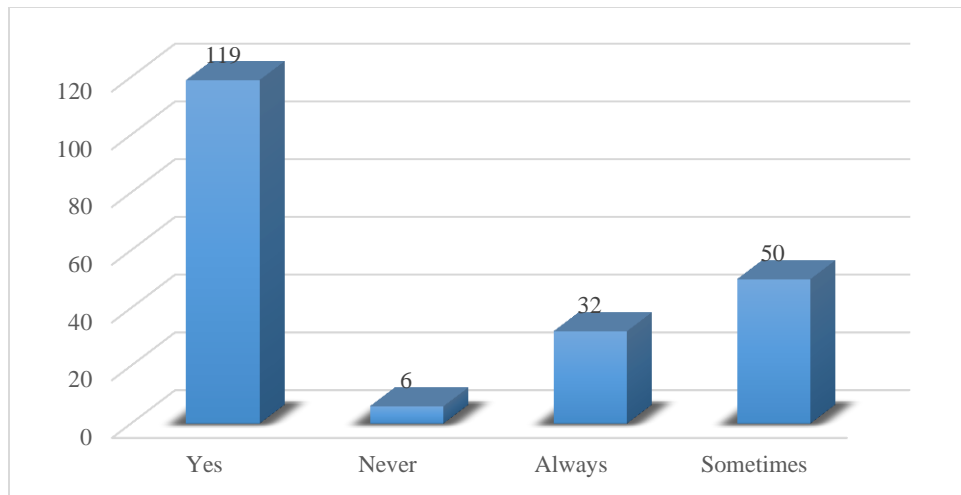
Figure 5
CAN STUDENTS BE ADDICTED TO THEIR SMARTPHONE(S)

Smartphone addiction remains the confronting challenges for the users (Figure 5). Then, this question believes to ascertain if participants can be addicted to their smartphones. The finding suggests that 119 (57.5%) of the participants can be addicted to their smartphones. 50 (24.2%) states that sometimes they could be addicted to it while 32 (15.5%) can always be addicted to constant usage use of their smartphones. This proves that student's addiction to smartphones is very high.
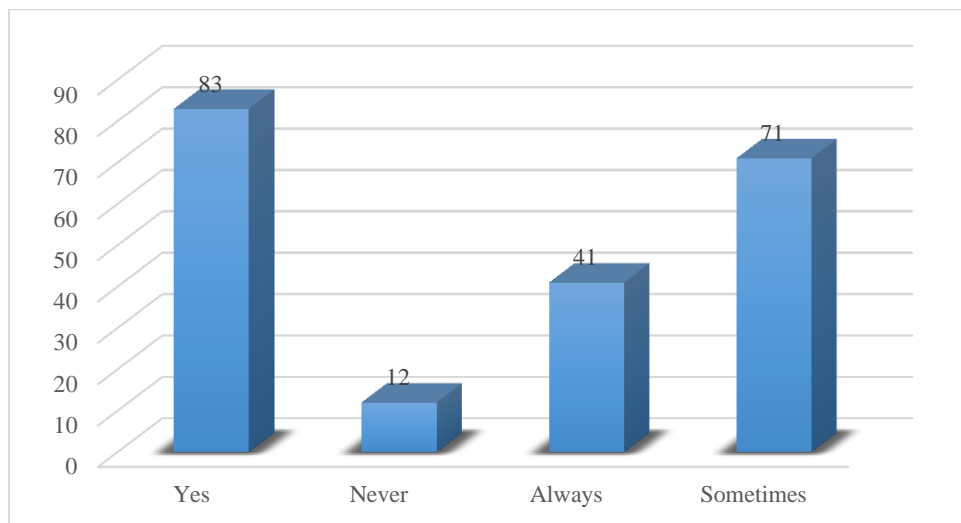
Figure 6
SMARTPHONES TIME-CONSUMING

Figure 6 presents to determine whether students (participants) using smartphones can be time- consuming for them. The findings prove that 83 (40.1%) of the participants states that using smartphones is time-consuming, 71 (34.3%) suggests that sometimes it can be time-

consuming and 41 (19.8) always believed that it is time-consuming. The findings prove that students spend much time in using smart phones.

Table 15 **USING SMARTPHONE AND STUDENT'S ADDICTION TO THEIR SMARTPHONE(S)**						
Do you use a smart phone? * Can students be addicted to their smartphone(s)?						
		Can students be addicted to their smartphone(s)?				
		Yes	**Never**	**Always**	**Sometimes**	**Total**
Do you use smartphone?	Yes	106	6	29	40	181
	Not	13	0	3	10	26
Total		119	6	32	50	207

Table 15 examines to know whether owning a smartphone and the addiction relates. Table 15 cross tabulation findings indicate that more participants who use smartphones are addicted.

Table 16 **STUDENTS ADDICTION TO THEIR SMARTPHONE(S) AND TIME SPENT ON SMARTPHONE DAILY**									
Can students be addicted to their smartphone(s) * How much time do you spend on your smartphone daily?									
		How much time do you spend on your smartphone daily?							
		Less than 30 min	**30 min-1 h**	**1 h-2 h**	**2 h-3 h**	**3 h-4 h**	**4 h-5 h**	**5 h and above**	**Total**
Can students be addicted to their smartphone(s)	Yes	15	17	7	12	13	17	38	119
	Never	0	0	2	1	0	0	3	6
	Always	2	3	2	6	1	7	11	32
	Sometimes	6	9	3	8	6	5	13	50
Total		23	29	14	27	20	29	65	207

The cross tabulation on Table 16 compared the association between student's addiction to their smartphone(s) and the time they spent on it daily. The findings indicate that 38 of the participants believed that they can be addicted and the addiction is proven on the long hours they spend (above 5 h) daily on their smartphone and others follows. However, the overall findings prove that participants (students) addiction is linked to many hours spent on their smartphones daily.

Reasons for Using Smartphone (Intention)

There are different forms of intentions behind students using the smartphone(s). Then, this section of the study focused on how to understand those reasons or intentions.

Table 17 THE MOTIVATE TO BUY A SMARTPHONE		
Which of the following motivates you to buy a smartphone?		
	Responses	
	N	**Percent**
1 To take picture	82	39.6%
2 To record videos	31	15.0%
3 Able to go online	82	39.6%
4 To show off	6	2.9%
5 To have fast Internet (3G, G4 or HSDPA)	72	34.8%
6 Access to social networking sites	82	39.6%
7 Size (small or light weight)	12	5.8%
8 Low price	20	9.7%
9 Latest model	27	13.0%
10 Get school work done	84	40.6%
11 Downloading books	38	18.4%

The question on Table 17 aimed to understand what motivates participants (students) in buying or owning smartphones. The findings prove that the respondents have different motivations, but 84 (40.6%) of the participants believe that they are motivated to buy it just to get their school work done, 82 (39.6%) of the participants indicated that they own smartphones to just to take pictures, able to go online and access to social networking sites' while 72 (34.8%) buy smartphone 'to have fast Internet (3G, G4 or HSDPA)' connection. The findings as seen in Table 17 indicate that majority of the participants own smartphones to 'get their school work done'.

Table 18 USAGE OF SMARTPHONES		
How much, if at all, has your smartphone helped you to achieve?		
	Responses	
	N	**Percent**
1 Stay connected with family	117	56.5%
2 Learn new knowledge/things	89	43.0%
3 Stay connected with friends	80	38.6%
4 Find vital information	70	33.8%
5 Share ideas and create online contents	39	18.8%

6	Follow hobbies or interest	27	13.0%
7	Work with community or group of people	32	15.5%
8	Perform school activities	80	38.6%
9	Perform well academically	45	21.7%
10	Social welfare	30	14.5%

As indicated in Table 18, smartphones assist users (students) to achieve a lot in the academic and non-academic side of their lives. To determine the extent, Table 18 question seeks to understand the level of assistance. Then, 117 (56.5%) of the participants indicated that their smartphone assist them to 'stay connected with family', 89 (43.0%) of the participants believed that smartphones help them to 'learn new knowledge' while many 'stay connected with friends and perform school activities' at 80 (38.6%), respectively. The findings prove that smartphones helps participants to 'stay connected with family, learn new knowledge/things, stay connected with friends, find vital information, share ideas and create online contents, follow hobbies or interest, work with community or group of people, perform school activities, perform well academically and social welfare'.

Table 19 THE PURPOSE OF USING SMARTPHONE		
Do you use your smartphone for any of these? (You can tick more than one)		
	Responses	
	N	**Percent**
1 Play games	73	35.3%
2 Download music/songs and videos	82	39.6%
3 Play music/songs	105	50.7%
4 Play videos	73	35.3%
5 News and weather update	70	33.8%
6 Send and receive text	118	57.0%
7 Checking hobbies and interest	30	14.5%
8 Checking for school information	115	55.6%
9 Downloading movies	27	13.0%
10 Send and receive email	134	64.7%
11 Instants messaging	87	42.0%
12 Store contact numbers	84	40.6%
13 Internet use	126	60.9%
14 Make calls	115	55.6%
15 Record videos	58	28.0%
16 Checking health and medical information	45	21.7%
17 Checking on further education	76	36.7%
18 Downloading books	58	28.0%

Table 19 presents different kinds of functions one can perform on a smartphone. The findings recorded that 134 (64.7%) of the respondents are using their smartphone to 'send and receive email', 126 (60.9%) use it to access the Internet while 118 (57.0%) use their smartphones to 'send and receive text' message. Other participants use their smartphones for different functions as indicated in Table 19.

CORRELATION

Correlation is used to understand the relationship among variable to measure the coefficient level on strength and weakness (Chukwuere, 2017; Higgins, 2005). To this study, a correlation was deployed to determine the relationship between variables listed in Tables 20 and 21 below. The correlation relationship can lie between +1 and −1 at p-value (Chukwuere, 2017). The significance level is presented at p-value which is set at 0.01 (1%). The variables are significant when the p-value is (less than or equal to p-value) ≤ and the reverse is insignificant. However, this study focused on the significant variables only (Tables 20 and 21).

Table 20 CORRELATION 1				
Correlations				
		Where do you rate your family income per month?	**How much do you receive as pocket money monthly?**	**What brand of smartphone do you use?**
Where do you rate your family income per month?	Pearson Correlation	1	0.482**	-0.024
	Sig. (2-tailed)		0.000	0.728
	N	207	207	207
How much do you receive as pocket money monthly?	Pearson Correlation	0.482**	1	0.008
	Sig. (2-tailed)	0.000		0.914
	N	207	207	207
What brand of smartphone do you use?	Pearson Correlation	-0.024	0.008	1
	Sig. (2-tailed)	0.728	0.914	
	N	207	207	207
** Correlation is significant at the 0.01 level (2-tailed)				

According to Table 20, the relationship between "What brand of smartphone do you use?" and "Where do you rate your family income per month?" is significant at –024 which is less than p-value (0.01). This implies that family (households) income level of the participants (students) impacts on the kind of smartphone brand their use or buy.

		Table 21				
		CORRELATION 2				
		Correlations				
		Make calls	**Social networking**	**SMS**	**Keep numbers**	**All the above**	**How much time do you spend on your smartphone daily?**
Make calls	Pearson Correlation	1	0.301**	0.412**	0.236**	-0.742**	-0.211**
	Sig. (2-tailed)		0.000	0.000	0.001	0.000	0.002
	N	207	207	207	207	207	207
Social networking	Pearson Correlation	0.301**	1	0.289**	0.163*	-0.605**	0.158*
	Sig. (2-tailed)	0.000		0.000	0.019	0.000	0.023
	N	207	207	207	207	207	207
SMS	Pearson Correlation	0.412**	0.289**	1	0.394**	-0.333**	-0.077
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.268
	N	207	207	207	207	207	207
Keep numbers	Pearson Correlation	0.236**	0.163*	0.394**	1	-0.270**	-0.106
	Sig. (2-tailed)	0.001	0.019	0.000		0.000	0.129
	N	207	207	207	207	207	207
All the above	Pearson Correlation	-0.742**	-0.605**	-0.333**	-0.270**	1	0.142*
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.041
	N	207	207	207	207	207	207
How much time do you spend on your smartphone daily?	Pearson Correlation	-0.211**	0.158*	-0.077	-0.106	0.142*	1
	Sig. (2-tailed)	0.002	0.023	0.268	0.129	0.041	
	N	207	207	207	207	207	207
** Correlation is significant at the 0.01 level (2-tailed)						

Table 21 presents different forms of activities carried on smartphones. There is a significance between "How much time do you spent on your smartphone daily?" and "make calls (-211), SMS (-077) and keep numbers (-106)". Each of these variables is less than significant level of p-value (0.01). The indication to this study shows that participants spend a great amount of their time sending messages, making calls and keeping numbers than on academic stuff.

FINDINGS

The findings from this study in accordance with the data analysis above indicate that:

- The majority of the students at NWU Mafikeng campus are from low and middle-income households. As students that are from a low and middle-income household, 40.6% of them receive R250-R500 which is not enough to sustain them throughout the entire month.
- Samsung remains the preferred smartphone brand used by most of the students (37.7%) and many believed that smartphone prices are expensive.
- It was found that 31.4% of the students (participants) spent over 5 h on their smartphones daily performing various tasks.
- It was also revealed that students spend less time on their smartphones during peak hours and more time after hours (off-peak hours).
- It was discovered also that social networking sites are the most used on smartphones and WhatsApp is the favourite application visited by students in the developing country like South Africa.
- This study found that students (participants) family (household) income impact on the level of stipend they receive monthly. Also, on record, the students from no-income households receive the lowest stipend monthly.
- The study again found out that household income influence whether students (participants) will own, buy or use a smartphone.
- It was also discovered that the bigger the family (household) income, the bigger the pocket money for the student (participant) and the more time on their smartphone. Again, an increase in hours spent daily led to an increase on data bundle spent and or used.
- The study found that using smartphones were time-consuming and participants are addicted. Also, student's addiction leads to long hours spent on smartphones daily.
- Importantly, it was discovered that participants (students) are motivated to buy smartphones to support their academic work, social networking, taking pictures and much more. Also, participants suggest that smartphones help them connect to family, learn new knowledge/things, stay connected with friends, get vital information, perform school activities and much more. Getting school done means that owning smartphones is no longer a luxurious asset to many students in the developing countries (Tables 17 and 18).
- It is also revealed that participant's household income level determines the nature of smartphone brand students will buy or use.

RECOMMENDATIONS

- University management should negotiate and subside the price of advanced smartphones from different brands or manufacturers for students to buy in order to use them in their academic learning process.
- It is advised that lecturers should provide students with engaging tasks in order to keep them away from long time on smartphone daily and off-peak hours.
- Due to the facts that many students spend a long time on their smartphones after hours, then data and network providers should capitalise on this to provide robust bundle packages during off-peak hours to assist them to engage in various activities.
- The university community and academia should discover ways to deliver learning contents to students via different social networking applications like WhatsApp due to the facts that many mostly use WhatsApp application.
- It is advised that university management to provide off-campus Wi-Fi modem due that many students use smartphones more during off-peak hours and the majority are staying off-campus.

CONCLUSION

The use of smartphones is becoming a necessity for many, especially students in the developing countries. Then the necessity of these devices means that a lot of money, time and resources are used to keep them running always. In accordance with the findings of the study, it was revealed that participants (students) using smartphones have a positive and negative bearing on them financial in a way that the bigger the household or family income, the more stipend they receive and time spent on the smartphone and vice versa. It was also found that household income defines the kind of smartphone brand to purchase and use by participants and much more. Then, the usage of smartphones by students especially in the developing countries has a lot bearing on them financial both to their families.

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