The Impact of Mobile Telecommunication Services on Students' Lives: Findings from a Comparative Study in South Africa and Nigeria

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Abstract

The advancement in telecommunication network and computer based communication is of great importance in global communications, especially on young adults that constitute the sample of the study. In most mobile telecommunication services, quality is ascertained during the service delivery and not prior to the delivery of service making it to offer various services that is of interest to young people. These services are used to create and maintain social interactions while also depending on it for educational activities. This paper is based on empirical research to examine the impact of mobile telecommunications services on first-year Information Technology (IT) students at Lagos State University (LASU), Lagos, Nigeria and University of KwaZulu-Natal (UKZN) Durban, South Africa. The study enables the understanding of the quality of services required to identify students' experiences and perceptions of mobile telecommunication services and the effect it has on their academic and social life.

1. Introduction

Mobile telecommunication is experiencing a tremendous revolution that will change the world. Mobile telecommunication network will be everywhere in such a way that computing will migrate from the traditional desktop towards consumer-oriented computing using smart wireless personal multimedia devices that will communicate with each other [1]. Mobile telecommunication services have been available since the early 1960s and its diffusion was affected by technological innovations such as transition from analogue to digital technology, competition within the industry, spectrum licensing and the harmonization to a common technical standards [2].

Mobile telecommunication technologies have developed in successive generations which includes the first generation (1G) technology, second generation (2G) or Global System for Mobile communications (GSM) technology which is massively used to date, the third generation (3G) technology that depends critically on the incorporation of multimedia services and the fourth generation (4G) technology that produce data rates of 200 Mbps, [3]. Mobile phones have become an everyday commodity for millions of people all over the world and are being used more and more in the most developed and developing countries [4.]

Telecommunication has transformed the world into a global village, it has resulted in profound changes within the social structure that rivals those within the industrial revolution [5]. The role that mobile telecommunication technology has played in social relations has become increasingly important. The implementation of GSM standards has direct and indirect contribution to the global economic growth, it has contributed to the creation of new employment opportunities and has enhanced the Gross Domestic Product (GDP) of several nations [6]. These assumptions holds true for students in South Africa, Nigeria and elsewhere for that matter.

This study draws from students' articulation of the use of mobile telecommunications services across mobile telecommunication networks in South Africa and Nigeria. Students' narratives of their use of mobile telecommunication services for academic and social activities foreground the importance of these services in students' lives. Therefore, the research questions are broken down into three-folds:
- What are the perceptions of first-year IT students in UKZN and LASU vis-à-vis mobile telecommunication services in Durban and Lagos?
- What effect does mobile telecommunication services have on first-year IT students' academic endeavour?
- What effect does mobile telecommunication services have on first-year IT students' social life?

In what follows, this paper discusses the models that serve as the theoretical anchors for the study. It then presents the research method, including the mode of data collection and analysis. Next, a general discussion of students' use of mobile telecommunications narrows down into the description of the study's findings in respect of first-year IT students at UKZN and LASU. The rating of the quality of mobile telecommunication services on the mobile telecommunication network. The paper then presents the limitation of the study and concludes with an argument for the integration of mobile telecommunication services into teaching and

learning as well as creating awareness of the link between the use of technology and life outcome.

2. Conceptual frameworks

Technology Acceptance Model (TAM) is the theory adopted for the study. "TAM is a theoretical model that has been used to explain and predict user's behaviour in information technology" [7]. TAM provides a foundation for identifying the effect of external variables on the internal values, attitudes and the intention to use technology [8]. According to TAM the attitude of users determines the intention to use technology and the intention eventually influences the actual use of such technology [9]. However, Davis and Venkatesh deemphasize the significance of attitude as a determinant of the use of technology but argue that perceived usefulness and perceived ease of use are critical factors that influence the use of technology [9].

In addition to the factors mentioned above, the awareness of the availability of technology is crucial to determining the intention of using the technology and the actual use of the technology. The assumptions of TAM offer some utility to this study. Students' behaviour in the form of their attitudes and intentions, perceived usefulness as well as perceived ease of use of mobile telecommunication services also determine the actual use of the services. Further backing to the theoretical framework adopted for this paper was from Siragusa and Dixon who stated that the theory of planned behaviour is also used to understand people's intention to engage in a number of activities [10]. Some of the activities were described in this study which includes the use of mobile telecommunication services for academic and social activities. Therefore, the theory of planned behaviour presupposes that intentions to involve and relate with a particular programme is achieved by attitudes towards using information and communication technology, supposed social pressure to do so and by perceived control over the interaction [11].

The conceptual models (TAM and the theory of planned behaviour) are used to interpret the findings of this study. The paper essentially extrapolates the assumptions of TAM. One of such assumptions presupposes that the use of technology is a function of the awareness of the existence and usefulness of such technology by a potential or actual user. In the context of this study, the use of mobile telecommunication services by first-year IT students is dependent on the awareness about the availability of such services.

Students' behaviour in the form of their attitudes and intentions, perceived usefulness as well as perceived ease of use of mobile telecommunication services also determine the actual use of the services. The attitudes and intentions of first-year IT students towards technology in general and mobile telecommunications in particular are reflected in their use of mobile telecommunication services for academic and social activities. The academic activities entail finding new information, information sharing, research and the use of SMS to check examination results. Some of the social activities include keeping in touch with family, keeping in touch with friends, making new friends and using data services for social networking sites i.e., Facebook.

Therefore, there is a possibility of unpacking the preferences of first-year IT students with reference to the acceptance and the usage of mobile telecommunication services through the extrapolation of the assumptions of TAM. Furthermore, the theory of planned behaviour implies that the intention to connect and relate with a programme or application has an effect on the attitudes directed at the usage of mobile telecommunications services by first-year IT students.

3. Methodology

3.1. Population and sampling

The data for this paper was generated from research conducted in 2011 amongst first-year IT students at the Westville-Durban campus of the University of KwaZulu-Natal and Ojo-Lagos campus of the Lagos State University. The population of first-year IT students in UKZN was estimated at 945 and that of LASU was estimated at 950 based on the 2011 student roll. The sample for the study was obtained through simple random technique. Simple random sampling of finite population is described by choosing elements randomly from a population one step at a time and at each step the remaining elements in the population are guaranteed that they have the probability of being selected [12]. Using this logic, a 50% simple random sample was selected by distribution of 500 questionnaires to the student cohort of each institution. A total number of 313 questionnaires were obtained out of the 500 handed out at UKZN and a total number of 310 questionnaires were obtained out of the 500 handed out at LASU.

3.2. Data collection instrument

A self-administered questionnaire was designed for the primary data collection procedure. The self-administered questionnaires consisted of structured, closed format, biographical and rating scale type of questions. The format of the questionnaire elicited information about the relevant issues on the use of mobile telecommunication services amongst first-

year IT students in UKZN. The data and information collected are pre-structured according to the assumed relationship between the concepts of the models used [13]. Data analysis was elaborated using set of statistical techniques for data diagnosis such as data preparations, data descriptions and scale analysis so as to improve the validity and reliability of findings. A descriptive and inferential analysis was used to analyze the collected data. Basic features of the collected data were described and interpreted. A combination of statistical software Statistical package for Social Sciences (SPSS) and Microsoft Excel was used for the data analysis. The findings are presented in a subsequent section of this paper.

4. Findings

4.1. Students' perceptions of mobile telecommunication services - UKZN

Mobile telecommunication network operators offer a range of services through which students could satisfy their academic and social needs. Participants were asked to indicate the mobile telecommunication services that they use. Figure 1 shows the number and corresponding percentage of participants who use each service. The use of each service is measured in relation to all 313 participants at UKZN. An overwhelming majority of students (89.8%) use SMS, followed by 69.6% who use MMS. Voice call is used by 65.8% of participants while 46.6% use data services. 36.1% and 10.9% of students use GPS services and International roaming respectively. 26 students, with the lowest percentage of 8.3% use conference call.
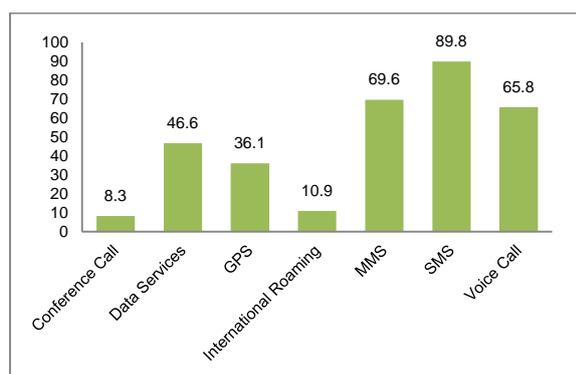

Figure 1. Mobile telecoms services - UKZN

Participants were also asked to indicate the quality of these services on the mobile telecommunications network. This question was intended to offer insight into how the quality of mobile telecommunication services could affect the activities (academic and social) that students engage in. With respect to each services, participants were required to indicate on a scale of 1-5 their

perceptions of the quality of mobile telecommunication services with the possible answers being very poor, poor, average, good and very good. The researcher took special cognizance of services that have a direct impact on the academic and social life of students. The assumption is that the higher the quality of the services the more likely that they could enhance the academic and social life of students. A significant number of participants rated data services as of good quality: 41.8% (good) and 22.1 (very good).

The same can be said of MMS services, in which case 38.2% and 37.9% rated the services as good and very good respectively. SMS had the highest rating in terms of quality with 34.4% participants indicating that the service was good while 54.6% indicated that the service was very good. Voice call had the third highest rating in which 33% of participants stated that the service was good and 47.5% indicated that it was very good. It can be seen from Table 1 that participants generally perceived the quality of mobile telecommunication services as of good quality.

Table 1. Rating of mobile telecoms services - UKZN

Services	Rating (% of respondents)				
	Very poor	Poor	Average	Good	Very good
Conference Call	9.4	4.7	25.8	37.5	22.7
Data Services	4.2	7.5	24.4	41.8	22.1
GPS	4.7	7.9	25.3	35.8	26.3
International Roaming	10.5	7.5	27.8	33.8	20.3
MMS	2.9	3.9	17.1	38.2	37.9
SMS	1.7	0.7	8.6	34.4	54.6
Voice Call	1.5	3.4	14.6	33	47.5

4.2. Duration of subscription to mobile telecommunication network - UKZN

To help in determining the experiences of first-year IT students in UKZN vis-à-vis their use of mobile telecommunication services, it was necessary to find out the number of years they have been subscribed to their network provider. 36.7% had subscribed to their preferred mobile telecommunication network for more than 5 years. 16.2% had subscribed for more than 1 year but less than 2 years, 13.6% for more than 3 years but less than 4 years, 10.1% for more than 4 years but less than 5 years. Subscribers who had been on their network for more than 2 years but less than 3 years constituted 7.5%. Participants who had been on their network for more than 6 months but less than 1 year made up 6.8%. The percentage of participants who subscribed to the mobile telecommunication network less than 6 months at the time of the study was 9.1%.

4.3. Challenges in the use of mobile telecommunication services – UKZN

In order to determine the overall perception of the quality of services, participants at UKZN were asked to identify the challenges that they encountered using of mobile telecommunication services. Table 2 indicates Yes or No responses to some of the challenges that could impair the use and benefits of mobile telecommunication services. From Table 2, it is evident that comparatively lower number of participants experienced challenges related to the use of mobile telecommunication services. This confirms the high quality rating of mobile telecommunication services described in earlier section

Table 2. Challenges in the use of mobile telecoms services – UKZN

Challenges	Participants' answers (%)	
	Yes	No
Call drop	15.8	84.2
Delayed SMS delivery	43.09	56.91
Delayed MMs delivery	36.5	63.5
Poor voice quality	22.4	77.6
Low data speed	37.5	62.5
Unstable network	43.09	56.91

4.4. Students' perceptions of mobile telecommunication services – LASU

A total of 310 first-year IT students at LASU indicated the mobile telecommunication services that they use. Figure 2 shows the number and corresponding percentage of participants who use each service. The use of each service is measured in relation to all participants at LASU. The vast majority of students constituting 92.9% use SMS, followed by the use of MMS at 62.9%. Voice call is used by 59.4% of students surveyed while conference call and data services are used by 54.5% and 52.9% respectively. Global Positioning System (GPS) services and International roaming have the lowest percentage usage of 19.7% and 11.6% respectively.
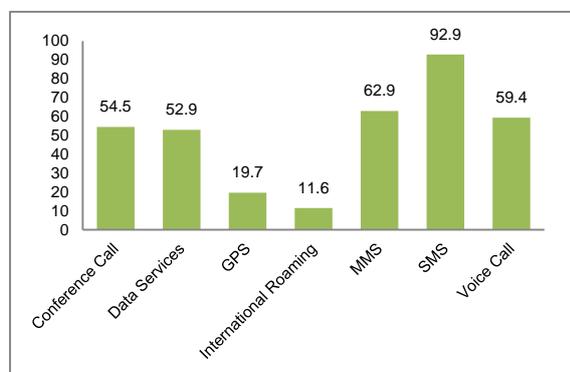

Figure 2. Mobile telecoms services - LASU

First-year IT students at LASU were required to indicate the quality of each of the services offered by mobile telecommunications network operators. The same assumptions made in section 4.1 above in respect of services apply here. A number of participants (45.2%) rated the quality of data services as average while 25.3% noted that data services were of good quality and 27.8% deemed the quality of data services as very good. In the case of MMS services, 34.8% considered the services as average, 30.8% of participants indicated that the quality of MMS services was good and 34.1% noted the service quality as very good. As was the case with participants at UKZN, SMS had the highest quality rating amongst first-year IT students at LASU in which 79.1% of participants responded that SMS service quality was very good. Many participants, comprising 59.1% of those surveyed rated the quality of voice call positively in the category of very good.

Positive ratings for mobile telecommunication services were generally higher in the case of UKZN participants than their LASU counterparts. Apparently, this is attributable to the very challenging operational environment within which mobile network providers operate in Nigeria. The environment is characterized by deficient infrastructure and unstable electricity supply but a very huge subscriber base. Thus, the lower percentages of LASU participant's vis-à-vis quality ratings in the good and very good categories may be situated in the context of Nigeria's operational environment.

It can be seen from Table 3 that participants generally perceived the quality of mobile telecommunication services as of good quality even though the percentages were lower than those obtained from UKZN participants. The exception to the foregoing pertains to the percentage of participants who rated the quality of SMS services as very good.

Table 3. The rating of mobile telecoms services – LASU

Services	Rating (% of respondents)				
	Very poor	Poor	Average	Good	Very good
Conference Call	0.5	1.6	68.9	11.5	17.5
Data Services	0	1.8	45.2	25.3	27.8
GPS	0	0.6	59	24.2	16.3
International Roaming	0	1.3	8.2	74.1	16.5
MMS	0	0.3	34.8	30.8	34.1
SMS	0.3	1	4.3	15.3	79.1
Voice Call	0.7	0.3	29.6	10.3	59.1

4.5. Duration of subscription to mobile telecommunication network – LASU

26.3% of participants had subscribed to their network operator for more than 1 year but less than 2 years, 22% for more than 2 years but less than 3 years, 15.5% for more than 6 months but less than 1 year, 12.2% for more than 3 years but less than 4

years, 9.5% more than 5 years, 8.2% for less than 6 months. 6.3% of participants subscribed for more than 4 years but less than 5 years. The higher percentages for participants who had subscribed for less than 2 years seem to reflect a common assumption that most students in Nigeria do not have access to mobile phones until their first year at the university.

4.6. Challenges in the use of mobile telecommunication services – LASU

As in the case of UKZN participants, challenges encountered by LASU participants in the usage of mobile telecommunication services serve to determine the perceptions as to the quality of services. In Table 4, participants' responses in the form of Yes or No to questions about challenges related to the use of mobile telecommunication services are captured to reflect the extent to which they determine the quality of services. The biggest challenge relates to unstable network with 68.5% of participants experiencing this problem. The significance of the problem of network instability is that it affects all other mobile telecommunication services. Perhaps, this explains why majority of LASU participants had lower service quality ratings than their UKZN counterparts.

Table 4. Challenges in the use of mobile telecoms services – LASU

Challenges	Participants' answers (%)	
	Yes	No
Call drop	11	89
Delayed SMS delivery	21.4	78.6
Delayed MMS delivery	38.3	61.7
Poor voice quality	23.7	76.3
Low data speed	40.58	59.42
Unstable network	68.5	31.5

4.7. Impact of mobile telecommunication services on students' life – UKZN

4.7.1. Academic life. In light of the foregoing, it is necessary to find out from participants' perspective the impact that mobile telecommunication services have on their academic life. Figure 3 provides pertinent information on the impact of mobile telecommunication services on participants' academic endeavour.
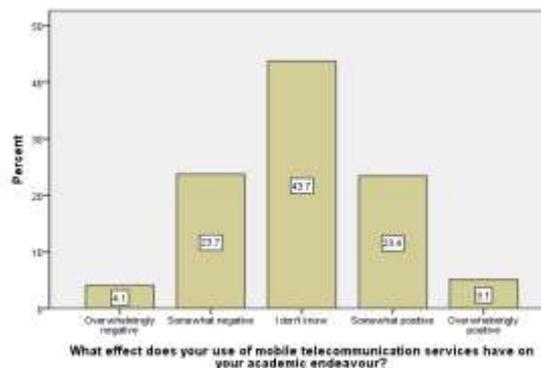

Figure 3. The effect of mobile telecoms on academic endeavours - UKZN

The description of the findings in this aspect of the study is presented according to the sequence of impact assessment as portrayed in Figure 3 below. The lowest number of participants (4.1%) described the impact of the use of mobile telecommunication services on their academic endeavour as overwhelmingly negative.

Next is another group of participants (23.7%) who described the impact as somewhat negative. It should be said that negative impact assessment is underscored by the potential and actual drawbacks related to the usage of mobile telecommunication services namely possible disruptions to academic routine and distractions as well as addiction to technology. The highest number of participants (43.7%) did not know the impact that mobile telecommunication services had on their academic endeavour. It may be said that students in this category could not or had yet to establish a correlation or interface between academic performance/outcomes and their use of mobile telecommunication services for academic purposes. The third highest number of participants (23.4%) identified the impact of the use of mobile telecommunication services on their academic endeavour as somewhat positive.

The last group of students in terms of sequence, representing 5.1% of participants indicated that the impact of mobile telecommunication services on their academic endeavour is overwhelmingly positive. For the students in these latter categories (Somewhat positive and overwhelmingly positive) there is a beneficial correlation between the use of mobile telecommunication services for academic purposes and academic performance. It is noted therefore that the use of mobile telecommunication services for academic purposes, while avoiding the potential drawbacks, may engender positive outcomes.

4.7.2. Social life. In view of the frequency of the use of mobile telecommunications for social activities, the study considers participants' articulation of the impact of mobile telecommunications on their social life.
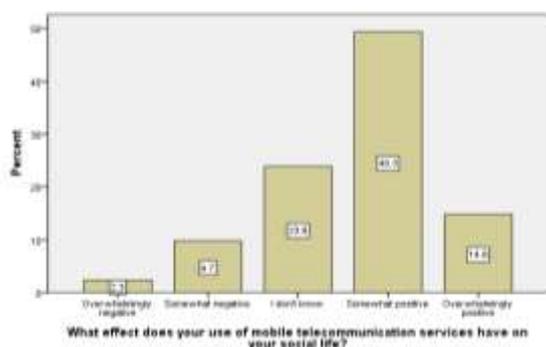
Figure 4. The effect of mobile telecoms on social life - UKZN

Figure 4 describes the impact assessment from participants' perspectives. The description of the findings in this aspect of the study is presented according to the sequence of impact assessment as portrayed in the figure below. The lowest number of participants (2.3%) described the impact of the use of mobile telecommunication services on their social life as overwhelmingly negative. This is followed by the group of participants (9.7%) who described the impact as somewhat negative. It should be said that negative impact assessment is underscored by the potential and actual drawbacks associated with the use of mobile telecommunication services namely possible impairment of interpersonal physical contact and distractions as well as addiction to technology. Another group of students representing 23.8% of participants did not know the impact that mobile telecommunication services had on their social life. The highest number of participants (49.3%) identified the impact of the use of mobile telecommunication services on their social life as somewhat positive. The last group of students in terms of sequence, representing 14.8% of participants indicated that the impact of mobile telecommunication services on their social life is overwhelmingly positive. It can be said that students in the last two categories (Somewhat positive and overwhelmingly positive) implied positive correlation between the use of mobile telecommunication services for social activities and improved social interactions.

4.8. Impact of mobile telecommunication services on students' life – LASU

4.8.1. Academic life. Figure 5 provides relevant information on the impact of mobile telecommunication services on participants' academic endeavour in LASU.
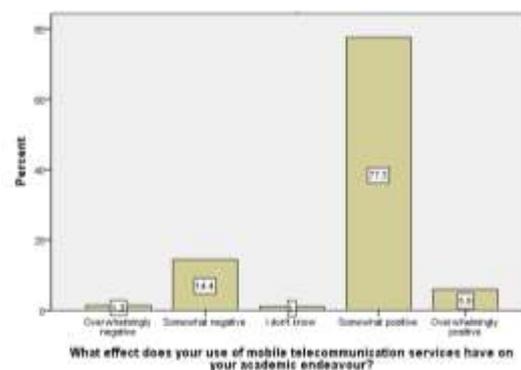

Figure 5. The effect of mobile telecoms on academic endeavours - LASU

It is necessary to find out the impact of mobile telecommunication services have on participants' academic endeavour based on participants' perceptions. The description of the findings in this aspect of the study is presented according to the sequence of impact assessment as portrayed in Figure 5 below. Only 1.3% of participants described the impact of the use of mobile telecommunication services on their academic endeavour as overwhelmingly negative. Next is another group of participants (14.4) who described the impact of mobile telecommunication services on their academic endeavour as somewhat negative. The lowest number of students with only 1% of participants did not know the impact that mobile telecommunication services had on their academic endeavour. It is said that participants in this category could not or had yet to establish a correlation between academic performance and their use of mobile telecommunication for their academic purposes. A very huge and the highest number of students with 77.5% of participants identified the impact of the use of mobile telecommunication services on their academic endeavour as somewhat positive. The last group of participants in terms of sequence, representing 5.9% of participants indicated that the impact of mobile telecommunication services on their academic endeavour is overwhelmingly positive. Putting into consideration, the students in the category of somewhat positive and overwhelmingly positive. There is a positive relationship between the use of mobile telecommunication services for academic purposes and academic performance. It is considered that the use of mobile telecommunication services for academic purposes produced positive impacts.

4.8.2. Social life. In the light of the frequency of the use of mobile telecommunications for social activities, the study considers participants articulation of the impact of mobile telecommunications on their social life. Figure 6 depicts the impact assessment from participants' perspectives.
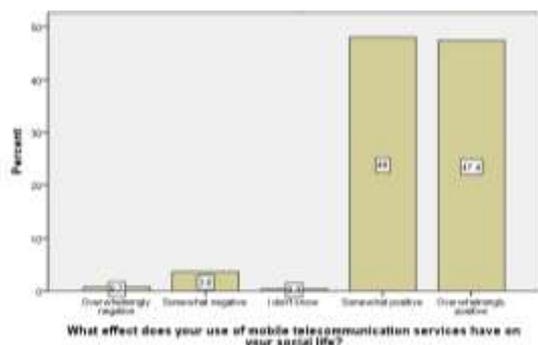
Figure 6. The effect of mobile telecoms on social life - LASU

The description of findings is represented according to the sequence of impact assessment as portrayed in Figure 6 below. A small amount of students (0.7%) described the impact of mobile telecommunication services on their social life as overwhelmingly negative. It is followed by the group of participants (3.6%) who described the impact of mobile telecommunication services as somewhat negative. Having said that negative impact assessment is underscored by the potential and actual drawbacks associated with the use of mobile telecommunication services namely possible impairment of interpersonal physical contact and distraction as well as addiction to technology. The smallest group of students representing 0.3% of participants did not know the impact that mobile telecommunication services have on their social life. The highest number of students (48%) described the impact of the use of mobile telecommunication services as somewhat positive. The last group of students in terms of sequence with 47.4% of participants identified that the impact of mobile telecommunication services on their social life is overwhelmingly positive. It can be said that participants in the last two categories (Somewhat positive and overwhelmingly positive) implied positive correlation between the use of mobile telecommunication services for social activities and improved social interactions.

5. Discussions of findings

The evaluation of research findings is done in the context of the research questions using inferential statistics mainly in the form of cross-tabulations and Chi-Square tests. These means of analysis enable the understanding of the significance of the variables and their influence on participant's perceptions. Therefore, the responses of participants are cross-tabulated and Chi-Square tests are used to establish the significance of factors that could offer answers to the main research questions. A Cross-tabulation is the procedure with which a table of two or more category variables is produced, in order to compare the incidence of one characteristics against the other

[14]. If there is no association then (p is greater than 0.05) it means there is no evidence of bias. A low p-value indicates rejection of the null hypothesis and in this case implies bias.

The overriding question that the study seeks to address is the perception of first-year IT students about mobile telecommunication services. In order to understand the perceptions, participants were asked to state the impact of mobile telecommunication services on both their academic and social life. With reference to the impact that mobile telecommunication services have on students' academic life, a number of factors were taken into consideration. Some of these factors include the use of mobile telecommunication services for a range of academic activities. In the final analysis, participants' assessment of the impact of mobile telecommunication services on their academic life is summed up in a few categories that may be broadly portrayed as either negative or positive. An inferential analysis of this research sub-question pertaining to the effect of mobile telecommunication services on students' academic life is presented in Tables 5 and 6. In line with the definition of Cross-tabulation above, significance is established where p≤0.05.

Table 5. Cross-tabulation results on effect of telecom services on academic endeavours

		What effect does your use of mobile telecom services have on your academic endeavour?					Total
		Overwhelmingly negative	Somewhat negative	I don't know	Somewhat positive	Overwhelmingly positive	
Location	Durban	12	70	129	69	15	295
	Lagos	4	44	3	237	18	306
Total		16	114	132	306	33	601

Table 6. Chi-square test on effect of telecom services on academic endeavours

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	222.584	4	.000
Likelihood Ratio	262.134	4	.000
Linear-by-Linear Association	84.417	1	.000
N of Valid Cases	601		

As can be seen from tables 5 and 6, data from both UKZN and LASU indicate a significant correlation between mobile telecommunication services and academic life. From these tables, it can be inferred that a significant number of first-year IT students of both Universities perceive mobile telecommunication services to have positive impact on their academic life. This perception is due to the

usefulness of mobile telecommunication services to performing a number of academic tasks.

Still on first-year IT students' perception of mobile telecommunication services, the other sub-question relating to the effect of mobile telecommunication services on students' social life also engendered useful data which is Cross-tabulated and subjected to Chi-Square tests in tables 7 and 8.

Table 7. Cross-tabulation results on effect of telecom services on social life

		What effect does your use of mobile telecommunication services have on your social life?					Total
		Overwhelmingly	Somewhat negative	I don't know	Somewhat positive	Overwhelmingly positive	
Location	Durban	7	29	71	147	44	298
	Lagos	2	11	1	146	144	304
Total		9	40	72	293	188	602

Table 8. Chi-square test on effect of telecom services on social life

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	132.082	4	.000
Likelihood Ratio	156.594	4	.000
Linear-by-Linear Association	97.282	1	.000
N of Valid Cases	602		

Tables 7 and 8 indicate significance of mobile telecommunication services on first-year IT students' social life. This perception is based on the reliance of first-year IT students on mobile telecommunication services for activities such as social networking and keeping in touch with friends and family.

6. Limitations

A clear limitation in this research is its focus exclusively on first-year IT students at UKZN and LASU. This study's findings help to understand the orientations and attitudes of first-year IT students towards an aspect of technology acceptance and use. However, the behavioural patterns and nuances presented in this study may not necessarily apply to students at higher levels of study in the same discipline or in other disciplines within the universities.

7. Conclusion

The limited use of mobile telecommunication services for academic purposes in LASU is emblematic of the general trend in Nigerian universities. As noted earlier, this problem is attributable, not to the lack of awareness or unwillingness on the part of students to use mobile telecommunications, but to an institutional factor namely the absence or inadequacy of electronic platforms in the universities. To this end, it is suggested that Nigerian universities create systems and adopt procedures conducive to the use of mobile telecommunication services for such activities as students' registration and obtaining examination results.

Research findings suggest that many students seem not to understand the impact of the use mobile telecommunication services on their academic and social life. Therefore, attempts at integrating mobile telecommunication into teaching and learning should, by logical necessity, teach important life lessons. It is important that students understand the link between behaviours or actions and outcomes. In the context of this study, students ought to understand not just the rationale for the use of mobile telecommunication services for academic and social activities but also the consequences or the results of the use of such services. Until students are able to understand the impact of mobile telecommunication services on their academic and social life the use of such services may not hold any real significance in their consciousness. It is expected that formal teaching and learning mechanisms that specifically highlights the use of mobile telecommunication services may serve the useful purpose of creating awareness of the link between the use of technology and life outcomes.

While first-year IT students may find it expedient, beneficial or relatively easier to use mobile telecommunication services for these purposes, this may not necessarily be the case for students in other disciplines. Further research with respect to students in other disciplines will likely reveal commonalities and divergences in students' use of mobile telecommunication services. These commonalities and divergences could, in turn, stimulate further scholarly inquiry that could engender benefits for students and academics. In addition, mobile telecommunication network operators could gain from such insights as they seek to streamline services to meet the needs of users in a changing and increasingly competitive operational environment.

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