Predictors of Short Message Service use by Nigerian Students

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Abstract - **The study examined the use of SMS by higher institution students in Ekiti State, Nigeria. It aimed at finding out frequency, motives and challenges of SMS use among the students. The predictors of SMS use were also identified. Stratified sampling technique was used to select students from seven higher institutions. A structured questionnaire was used to collect data from a sample of 614 students. Frequencies, principal component factor analysis and linear regression were used for data analyses. Findings revealed that students use SMS for educational purposes such as contacting peers, family, lecturers and others. Convenience and low cost, escape and entertainment were the motivations of SMS use by students to contact family, peers and others respectively. Confusing acronyms, arrival of texts at very unusual times, as well as late delivery of text messages was identified as shortcomings of SMS. The motivations around the capability of SMS to enable students avoid face-to-face communication also explain use of SMS by students to contact family, lecturers and others. The study recommends that school authorities should identify and communicate with students through SMS to bring about timely information and sense of familiarity that could enhance the teaching-learning process.**

Keywords: Text messaging, SMS, Gratification, Unwillingness-to-Communicate

I. INTRODUCTION

Since about the mid 1970s, mankind has witnessed a phenomenal growth in the number and variety of information products, services, systems and sources. The catalyst of the growth has been rapid innovations in electronic technologies for creating, processing, communicating and using information. With the arrival of wireless communication technologies people are enabled to be accessible at all times and places. The use of mobile communication technology, like the mobile phone, and other personal communication technologies, has become almost fully integrated in everyday life for both social and business purposes. The adoption and use of mobile communication technology has increased exponentially in comparison with other information technologies (Crisler, et al., 2003; Leung, 2007).

In a variety of contexts, people want to use mobile communication devices to make phone calls, exchange messages with family, friends or co-workers, read and send e-mail, take pictures, listen to music, or want to have access to data files. The mobile phone as the most prominent example of mobile communication technology has become, as Wei (2001) stated, "more than just a talking device on the move". It represents a converged new communication and information technology with a variety of extensive interpersonal and mass communication services such as short message service (SMS). The Short Messaging Service (SMS) of the technology was introduced in Europe in 1991, but it has developed into a major form of interpersonal mediated communication (Bryne and Findlay, 2004). SMS is used to send and receive text messages usually via mobile telephones and computers. These text messages can comprise words or numbers or an alphanumeric combination. Each short message is up to 160 characters in length when Latin alphabets are used and 70 characters in length when non-Latin alphabets such as Arabic and Chinese are used. It also enable multimedia messaging service, which allows combination of texts, images, animations, voice, video and music to be sent and received instantly via mobile phone, a fixed line phone, and or over the internet. Less intrusive than a mobile phone call and more immediate than e-mail, SMS is seen as one of the most cost-effective ways to communicate (Leung, 2007). Short Message Service, or SMS, is a text-messaging cell phone technology that has made a hit with students and business people in Europe, Asia and in the United States (Sutherland and Thompson, 2001) and is gaining a foothold in Nigeria. The growing proliferation of cell phones especially in Nigeria means that just about all mobile phone customers have access to the hardware and software they need to send and receive SMS text messages.

The way the younger generation communicates has changed considerably in the last couple of years. Besides other new means of communication, like e-mail, chat (MSN, ICQ), and the Internet, the mobile phone and mobile phone text-messages have become enormously popular means of communication for young people. In the Netherlands, for example, 17% of people in the age of 12 to 25 owned a mobile phone in 1999, while in 2001 this had more than tripled to 61%. About 75% of the young people is

a prepay mobile phone user, and most of the money they spent was on sending and receiving text-messages on their mobile phone (Sikkema and Noordhuizen, 2001). Observations from various higher institutions in Nigeria show that mobile phone is now very common among students and SMS was found to be the most widely used feature of mobile phone for communication. The most common application of SMS by students of higher educational institutions in Nigeria as established in other countries (Leung 2007) is the exchange of messages between friends. SMS can be more than just a consumer tool. Educational institutions' authorities use it to send academic information to students, lecturers and other staff effectively such as result grades, school events, new lecture schedules and venues, schedule meetings. Political parties use SMS to communicate with their party members and for political campaign, churches use the technology for evangelism, football fans use the technology to share information about match fixtures and scores in matches. SMS can be used by school authorities to contact student's parents it can also be used for contacting/exchanging educational information needs with family and communicating educational issues with lecturers and seeking advice from peers (Nwagwu, 2012).

A general observation shows that SMS is a major means of communication by higher institution students in Ekiti State, Nigeria, but there is no empirical evidence about the motives, motivations, pattern and factors influencing SMS use. Despite this hard-to- use technology (Peters et al., 2003), so why did SMS become so successful as a new means of communication for young people? In other words, which factors caused young people to use SMS rather than any other, easier means of communication, like the mobile phone or e-mail? This study aims at providing empirical evidence on the motives, motivations, pattern of use, shortcomings and educational purposes of SMS text messaging among higher institution students in Ekiti state, Nigeria. It equally examined potential factors, such as demographic factors, the gratifications sought, the limitations or shortcomings of SMS, and one personality variable—unwillingness-to-communicate in interpersonal communication—that could influence the level of use.

General theoretical conclusion of many use and gratification studies is that the gratifications sought motivate the use of a particular medium in an audience. In this respect, the audience is often attempting to satisfy certain psychological needs such as surveillance, information-seeking, entertainment, personal identity or companionship (Rubin, 1981, 1983; Dimmick et al., 1994; Lin, 1998;). Maslow (1970) described these psychological needs as cognitive and emotional in nature. This utilitarian view of media use can be conceptually applicable to people's motives associated with the use of SMS text messaging. Despite the so little research has been conducted on gratifications of SMS use, much of what we know regarding motives for the use of SMS has been drawn from the experience of teenage users (Peters et al., 2003)**.** These presumably use SMS to exchange gossip and rumors, talk about their personal lives, do something when they are bored, find ways to connect and hang out, and chat about anything or nothing in particular (Peters et al., 2003)**.** Unlike previous studied technologies, SMS is different because it is a form of instant messaging systems, omnipresent, inconspicuous, and text-based.

Furthermore, previous studies have focused on the American, European, Chinese and Nigerian context (such as Muk, 2007; Leung, 2007; Yan et al., 2006; Nwagwu, 2012), but higher institution students use of the technology is yet to be known and understood. Based on several studies which used uses and gratification theory in studying the use of electronic technologies, Leung (2003: p.125) has summarised broad motivations "including convenience and low cost, entertainment, coordination, and fashion were strong instrumental motives for SMS use while affection and escape were intrinsic factors". Evidently these needs are goal-directed and utility-driven – components of the uses and gratification perspective. Given the pervasiveness of SMS in the service industry such as banks, courier companies, travel agencies and educational institutions in Nigeria, there is a need for research on the drivers of use of the technology. A major goal of this study was to explore a wide range of motivations in educational applications of SMS use. The main objective is to investigate the use of SMS by higher institution students in Ekiti State, Nigeria. The specific objectives were to identify from a uses-and-gratifications point of view, the predictors of SMS use among the students.

II. THEORETICAL FRAMEWORK

In this section one social psychological media use model stemming from prominent theoretical perspectives on media behavior – use and gratifications theory - is presented.

Uses and gratifications theory

The first assessments on this topic were made by Herzog (1944), who coined the term "uses and gratifications" to explain the specific dimensions of satisfaction of the audiences, particularly on radio. Following this inquiry, mass communication scholars studied these effects on other media such as newspapers, television, VCRs, and electronic bulletin boards (Eighmey and McCord 1998; Rubin 1994). Underlying this perspective is the notion that people are motivated by a desire to fulfil certain needs. So rather than asking how media use influences users, a uses-and-gratifications perspective asks how users' basic needs influence users' media choices. It is important to note that the media choices that people make are motivated by the desire to satisfy a wide variety of functions: entertainment, diversion, social connection, personal identity, information and the like. Much of the research on uses and gratifications has been concerned with identifying the specific

gratifications satisfied by the use of media (Swanson 1992; Rubin 1994). Katz et al., (1973) offer a typology of needs of media users that can be expressed as:
(a) Cognitive Needs: for information, knowledge, and understanding of environment.
(b) Affective Needs: for aesthetic, pleasurable, and emotional experiences.
(c) Personal Integrative Needs: for credibility, confidence, stability, and personal status.
(d) Social Integrative Needs: for contact with family, friends, and the world.
(e) Escapist Needs: for escape, diversion, and tension release.

Blumler & Katz (1974) in Nwagwu (2007) observed that Uses and Gratifications theory is fast becoming an influential reference in media research because it focuses on why people use the media rather than the content of the media. The theory established that user does not only receive media messages but also in control, active, and goal-directed, in sending and receiving information. The media user chooses what is considered needful. The use and gratification approach is concerned with audience participation actively in media selection and use, personal characteristics of the audience members and motivations that determine choices and what they are used for. The media user consciously or subconsciously takes the initiative to link gratification needs with his or her media choice and use, from among alternative media and other available sources based on the fact that such is able to decide on the information required, select such information and use it.

Several researchers have examined the motives people have for the uses of newer media by assessing their motivation to communicate in various contexts. For example, Papacharissi and Rubin (2000) examined audience uses of the Internet and found five gratifications: Interpersonal Utility, Pass Time, Information Seeking, Convenience, and Entertainment motives for using the Internet. Ferguson and Perse (2000) explored the similarity between television and the World Wide Web (WWW) to assess whether web surfing is a functional alternative to television viewing and found three major and two minor television-like reasons for web surfing: Entertainment, Pass Time, Relaxation, Social Information, and Information. Leung and Wei (2000) found Mobility, Immediacy, and Instrumentality as the strongest instrumental motives in predicting the use of cellular phones, followed by intrinsic factors such as Affection/Sociability and Fashion/Status. According to McQuail (2001), the uses-and-gratification research approach has proven capable of the hardly demanding, but still useful tasks of describing audiences in terms of tastes and expectations, of identifying types and patterns of selecting behaviours and of characterizing audience perceptions of different forms and content types. The failures of the uses-and-gratification research approach relate more to the aim of predicting audience demand, finding causal explanations of actual choices and use patterns as well as identifying key intermediating variables in effects research. In a suggestion for progress in the field of uses-and-gratifications research, McQuail (2001, p.12) describes four 'moments' in media selection and use, as
"an initial and quite pragmatic subdivision in terms of the main moments in a sequential account of media selection, attention and response. These moments constitute more or less autonomous topics or fields of enquiry, which require different kinds of methods and have their own set of goals. Very provisionally, these fields can be identified as having to do with: taste culture and life style; media and content choice; involvement in the ongoing media experience and uses of media; and reflection on and evaluation of the media experience."

The present study, in which we want to uncover the factors that are accountable for the use of SMS, can be categorized within the third moment in media selection and use: the involvement in media experience and uses of media. According to McQuail (2001), this moment involves two separate objects of research interests. One relates to satisfactions directly experienced from the content and behaviour of media use, which are generally expressed by means of various forms of 'involvement'. The other relates to 'secondary' aspects and implementations of media as they fit into everyday routines and customary practices associated with different life-styles and special occasions. The context of use is central, but preferences for solitary or for sociable attention are equally important.

Unlike previously studied technologies, SMS is different because it is a form of instant messaging systems, omnipresent, inconspicuous, and text-based. SMS as a communication medium is still an emerging technology but what is obvious now is that the technology in its current structure fits youth interpersonal communication. So why did SMS become so successful as a new means of communication for young people, as noted by Peters et al., (2003) despite this hard-to- use technology? In other words, which factors caused young people to use SMS rather than any other, easier means of communication, like the mobile phone or e-mail? This study focuses on the effects of gratifications-sought, unwillingness-to-communicate, and the shortcomings of SMS text messaging on the pattern of use of SMS. To achieve the objectives of the study, the following hypotheses were tested:

1. **H_0**: There is no significant relationship between the demographic variables and the use of SMS by higher institution students
2. **H_0:** There is no significant relationship between gratifications students sought from SMS use and the use of SMS
3. **H_0**: There is no significant relationship between shortcomings students perceived from using SMS, and the use of SMS
4. **H_0**: There is no significant relationship between

unwillingness-to-communicate - Approach-Avoidance and unwillingness-to-communicate - Reward, and the use of SMS

III. METHODOLOGY

Research Design, Population and Sampling

This study adopted a sample survey research design covering a cross section of higher institution students in Ekiti State, Nigeria. The population of study comprised higher institution students in Ekiti State, Nigeria. According to Ekiti State Ministry of Education, there were 7 higher institutions in the state as at December, 2012. Stratified random sampling technique was used in selecting students from each of the higher institutions. Higher institution students were selected as the target sample because access to mobile phones and the likelihood of them using SMS was high. The overall sample size was 614 students which constituted one percent of the total population of students in each institution.

Instrumentation and data collection

A structured questionnaire was used for data collection owing to the fact that it has been used severally for similar studies such as (Papacharissi and Rubin (2000); Leung, 2002; Leung and Wei, 1999, 2000; Peters, 2003; Leung, 2007; Nwagwu, 2007) and the extent of reliability can be measured. It was divided into 6 sections. Section A measured demographic characteristics of the students and data was collected from the students on age, gender, institution, course of study, religion, marital status, level of study, living type, occupation of father, occupation of mother, highest educational status of mother and father. Section B measured level and frequency of SMS use by students. Nine survey questions were asked to understanding level of use of SMS. Respondents were asked whether they used SMS to send messages, as well as whether they received messages through SMS. These two questions which were measured on a dichotomous scale of 'yes' and 'no' is to have general understanding about 'use of the technology'. Questions asked on how many times respondents received SMS in one day, how many times respondents sent SMS in one day, how many time they received SMS yesterday and how many time they sent SMS yesterday. This is to understand the extent of habitual engagement in the use of the technology, which also depicts application of everyday life information practices. Finally on this subject, regularity of use of technology was measured by asking how often respondents received SMS, and how often respondents sent SMS and these variables were measured by 'very often', 'often', 'not often', 'not very often' and 'not at all.

Section C contained questions that probed motives or gratification of SMS use. This sought to first identify those gratifications that are uniquely associated with this technology as been observed in this study environment. As shown in Leung (2007) and Nwagwu (2012), 19 possible gratifications were listed. Educational uses of SMS and shortcomings of the technology stated in their studies fit into this study environment. The following categories of gratifications were arrived at: affection, escape, convenience, entertainment and coordination, a total of 19 statements that reflected the different categories of gratifications of students' use of SMS were tested. A 5-point Likert scale was used to measure these opinions, from 1=strongly disagree to 5=strongly agree, to rate each of the reasons. Items that were found to be repetitive or ambiguous were eliminated.

Section D measured the shortcomings of SMS. Based on Nwagwu's (2012) study, 4 groups of shortcomings - confusing acronyms, intention difficult to understand, timing and ergonomics were listed. A total of 12 statements were finally constructed from the four groups, and the opinions of the respondents were collected using a 5-point Likert scale, with 1 = strongly disagree and 5 = strongly agree.

Section E sought to collect data on reasons why students are Unwilling-to-communicate. A 10-item Unwillingness-to-Communicate Scale according to Burgoon, (1976) was used in this study. It included the dimensions of Approach-Avoidance (UCS-AA) and Reward (UCS-R), each containing 5 items. Low UCS-AA scores meant that the respondents were anxious or fearful about interpersonal encounters, whereas low UC-Reward scores implied that the respondent found interpersonal communication to be less rewarding, less valued, and that they were less sought out for conversation and opinions by their friends and family. To be consistent, a 5-point Likert scale was also adopted with 5 = strongly agree and 1 = strongly disagree.

To ensure face validity, the questionnaire was evaluated by three experts in SMS studies and modifications were made based on their assessments. Content validity was established by pre-testing the questionnaire in a pilot study carried out among 20 respondents in the University of Ado-Ekiti, Ekiti state. Based on the results of the pilot study, questionnaire items were modified to make them measure what they were meant to measure. The reliability of the questionnaire was measured using the test-retest method by comparing first time responses with responses after one week and item that does not have up to 75% correlation was omitted from the final questionnaire in order to ensure consistency.

A total of 614 copies of the questionnaire were distributed to students, and 513 copies were completed and returned, with return rate of 83.6%. In administering the questionnaire, principal officers in each institution were consulted to seek their permission and cooperation of other members of staff in the distribution of the questionnaire. The mean age of the

respondents was 22.4years, but more males (51.9%), than females (46.0%) with the largest proportion of respondents within the age group of 19-24 years which accounted for 66.9% of the respondents, participated in the study. Respondents living in the hostel accounted for 58.1%, 35.9% live off campus on their own, 3.9% live off campus with their parents and 2.1% gave no response. Most of the respondents were undergraduate (49.7%) from University of Ado-Ekiti, they are mostly science students (28.3%), single (91.8%), and most of their fathers (71.3%) and mothers (59.8 %) had tertiary education, and were self employed (40.7%) and (51.9%) respectively. Most of the respondents reported being closer to their mothers (67.8%) than their fathers (25.0%) and were mainly Pentecostal Christians (40.2%).

Data Analyses

Responses from the questionnaire were coded and Statistical Package for Social Science (SPSS) software was used for the analysis. The analysis carried out on collected data was multi-level. Descriptive statistics were used to describe the demographic data about the respondents and their frequency of use of SMS. Then an understanding of the use of SMS generally was established, to understand further use of SMS. Next, principal component factor analysis was used to determine the potential groupings of the 19 gratifications into five groups, Unwillingness-to-Communicate variable as well as the four groups of the shortcoming variables, with Varimax rotation used to better account for expected correlations among potential factors. Finally, education use variables were examined. Regression analysis was used to examine how demographics, gratifications, unwillingness-to-communicate, and shortcomings of SMS predict use of SMS. Parametric correlations and regressions have been used extensively in information use literature to test associations and influences (Ajayi, Olatokun, and Tiamiyu 2002).

IV. RESULTS

Level of SMS use

The level of SMS use were examined by asking respondents the following "How often do you use SMS to send messages?" and "How often do you receive messages through SMS?" Results showed that respondents received more SMS than they sent. A major explanation is often associated with unsolicited messages which have become very common – coming from advertisers of goods and services and telecommunication service operators themselves, among others. Altogether, 80.9% received texts often while 79% sent often. Fewer respondents reported never receiving (4.5%) and not often receiving (14.6%) than those who reported never sending (5.1%) and not often sending (16%).

Frequency of use of SMS

On a dichotomous scale, inquiries about use frequency were guided by two questions namely: "Do you use SMS to send messages?" and "Do you receive messages through SMS?" More respondents (95.5%) reported they sent SMS than those who reported receiving (94.3%). The two variables were aggregated to read "Do you use SMS", and 90.40% of the respondents indicated using SMS.

Fig 1. shows level of SMS use while Fig 2. and Fig 3. present its educational uses.

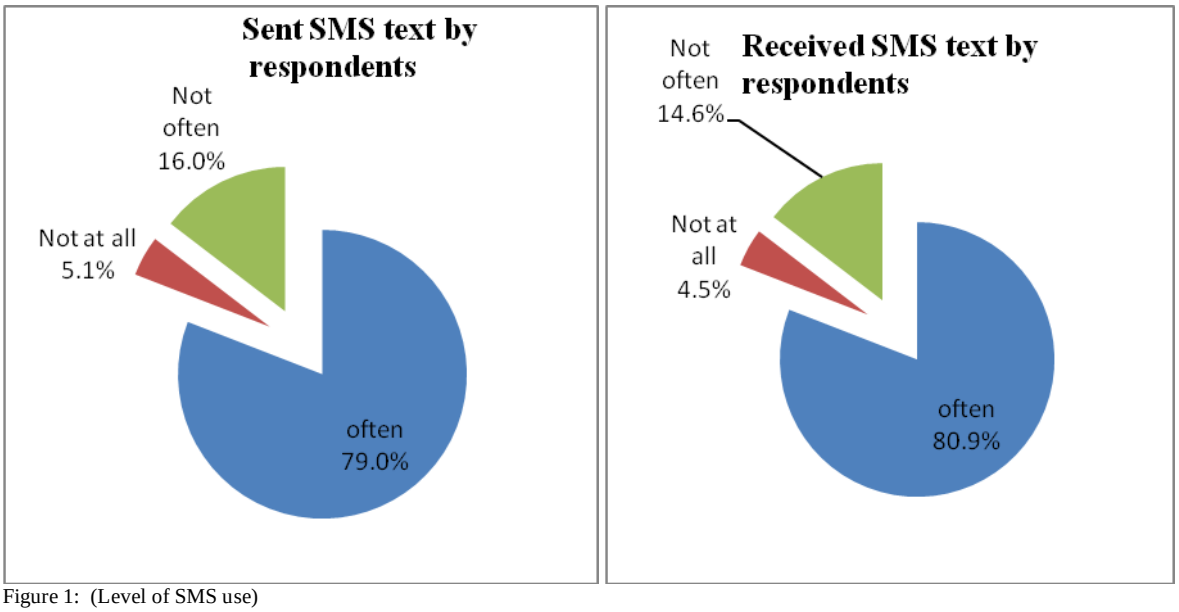
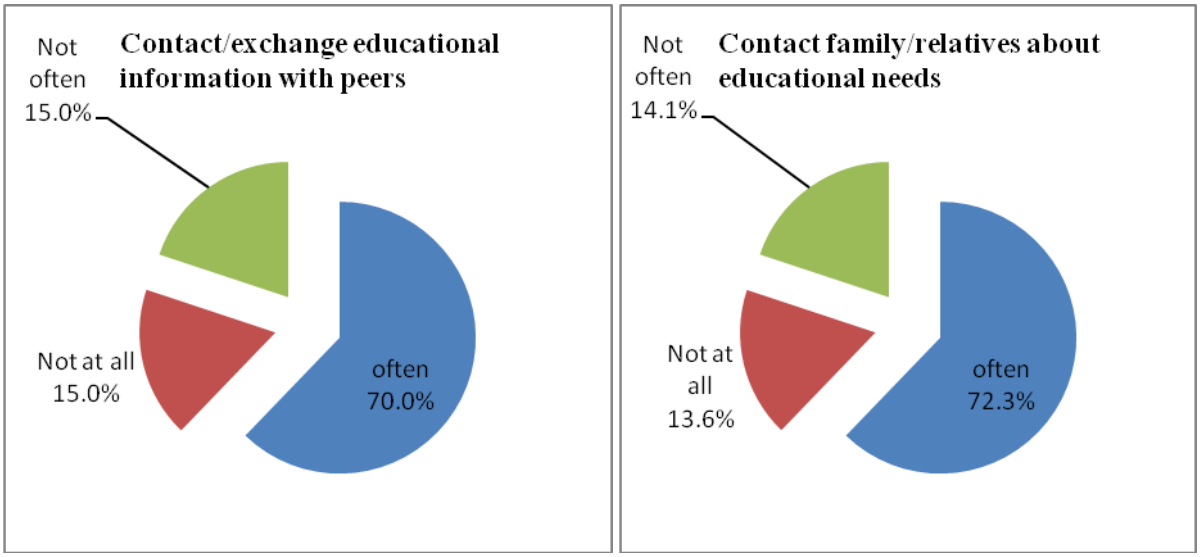


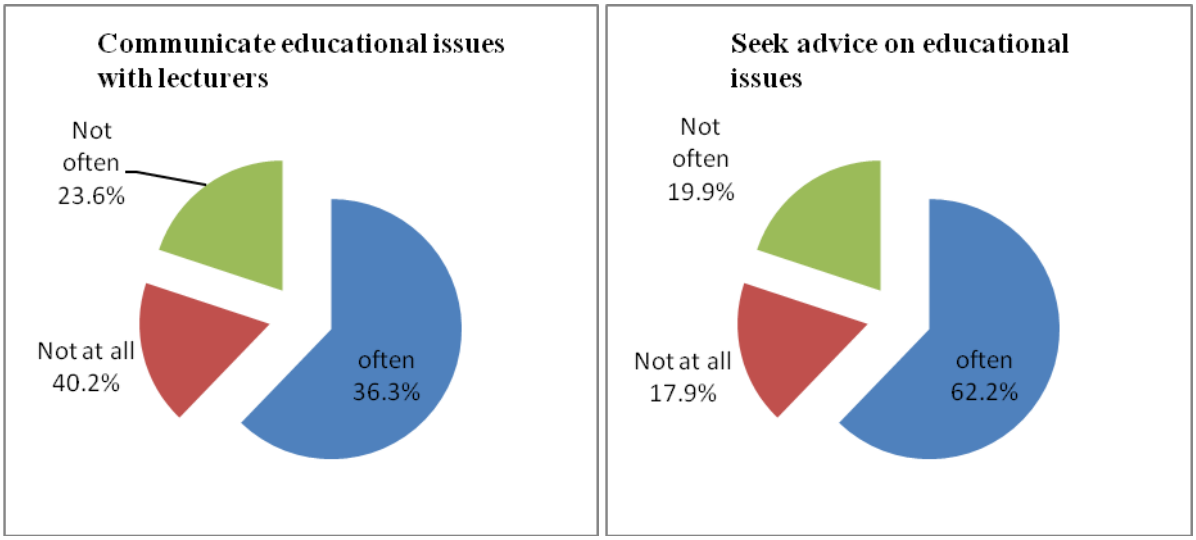
Figure 1: (Level of SMS use)

Educational uses of SMS

The various educational uses of SMS as reported by the students are shown in Figures 2 and 3.



Figures 2: (Educational uses of SMS)



Figures 3: (Educational uses of SMS continue)

Using SMS to contact family/relatives about educational needs is the highest educational reason for which the students use SMS (86.4%) and 72.3% reported using SMS often for this purpose. While eighty-five percent of the students use SMS to contact/exchange educational information with peers, and as high as 82.1% of the students reported using SMS to seek advice on educational issues between students and other members of the academic and nonacademic community such as secretaries, technologies, friends in the city, among others. Using SMS to Communicate educational issues with lecturers is the least educational reason for which the students use SMS (59.9%) and as high as 36.3% of the students reported using it often for this purpose.

Predicting educational usage pattern of SMS using Unwillingness-to-Communicate, SMS Shortcomings and gratifications as Predictors

Table 1 presents the results of the regression analysis of the pattern of relationship between the various educational uses of SMS and the predictor variables.

Table 1: Regression analysis of educational use of SMS using unwillingness-to-communicate, SMS shortcomings and gratifications as predictors

Predictors	**Contact peers**		**Contact family**		**Contact lecturers**		**Contact others**	
	ßeta	Sig level	ßeta	Sig level	ßeta	Sig level	ßeta	Sig level
Gratifications								
Affection	0.012	0.823	-0.005	0.923	-0.020	0.719	0.013	0.809
Convenience and low cost	0.033	0.510	0.113	0.023	0.067	0.176	0.057	0.253
Entertainment	-0.014	0.797	0.009	0.863	0.061	0.265	0.115	0.034
Escape	0.105	0.032	-0.015	0.752	0.057	0.240	0.057	0.241
Coordination	0.016	0.777	0.037	0.510	0.012	0.839	-0.063	0.271
Shortcomings of SMS								
Confusing acronyms	-0.125	0.017	-0.112	0.032	-0.049	0.348	-0.111	0.033
Ergonomic issues	0.034	0.502	-0.030	0.556	0.057	0.265	0.055	0.276
Unclear intention	-0.006	0.913	0.035	0.512	0.051	0.341	0.084	0.118
Timing	0.036	0.517	0.067	0.219	-0.125	0.023	-0.013	0.814
Unwillingness-to-Communicate								
Unwillingness-to-Communicate Approach-Avoidance	0.040	0.452	0.139	0.009	0.007	0.898	0.077	0.149
Unwillingness-to-Communicate-Reward	-0.052	0.271	0.023	0.622	0.143	0.002	0.100	0.032

(Notes: SMS users were coded as 1, and 0 otherwise; values in the table are standardized coefficients.)

As shown in Table 1, for gratification, entertainment has a negative relationship with using SMS to contact peers (r=-0.014), but escape has a positive and significance relationship (r=0.105, p<0.05). All other gratification variables; affection (r=0.012), convenience/low cost (r=0.033) and coordination (r=0.016) positively relate to use of SMS to contact peers, although they are not significant. For contacting family, only convenience/low cost (r=0.113, p<0.05) relates significantly with using SMS, and the relationship is positive. This result also applies to using SMS to contact others for advice on educational issues, except that entertainment (r=0.115, p<0.05) has significant and the strongest relationship. For contacting lecturers, all the gratifications positively relates with using SMS except affection that has negative relationship (r=-0.020) with using SMS to contact lecturers. None of the gratification has significant relationship.

SMS shortcoming of confusion in understanding SMS phrases used (r=-0.125, p<0.05) has negative and significant relationship with the use of SMS for contacting peers, and ergonomic issues (r=0.034) and timing (r=0.036) have positive but not significant relationship with the use of SMS for contacting peers, while the relationship is negative for unclear intention (r=-0.006). This result is also similar to contact family about educational needs except that confusing acronyms (r=-0.112) and ergonomics issues (r=-0.031) are negatively related to using SMS to contact family. But timing has negative and (r=-0.123, p<0.05) significant relationship with educational use of SMS to contact lecturer, but relationship between use of SMS to contact others and confusion of SMS texts is less significant (r=-0.111, p<0.05). Furthermore, confusing acronyms has significant but negative relationship (r=0.049, p<0.05), all the shortcoming variables are not significantly related with educational use of SMS to contact lecturers.

Unwillingness-to-Communicate Approach-Avoidance positively relates (r=0.040) with educational contact with peers but, Unwillingness-to-Communicate-Reward is negatively related (r=-0.052). None of the Unwillingness-to-Communicate relates significantly with educational contact with peers. The relationship between contacting family about educational needs and Unwillingness-to-Communicate variables are positive. While Unwillingness-to-Communicate Approach-Avoidance is significantly related (r=0.139, p<0.05). For contacting lecturers, all the Unwillingness-to-Communicate variables are positively related while Unwillingness-to-Communicate-Reward is significant(r=0.143, p<0.05) with using SMS to contact lecturers. Similarly, this result also applies to contacting others for advice on educational issues, except that the significance of the relationship is lower for Unwillingness-to-Communicate-Reward (r=0.100, p<0.05).

Predicting educational usage pattern of SMS using demographics

Table 2 presents the results of the regression analysis of the pattern of relationship between the various educational uses of SMS and demographics. The results showed that none of the demographic variables has significant relationship with using SMS to contact peers. Living in hostel relates

significantly with use of SMS for contacting family about educational needs (r=0.083, p<0.05), Among four levels of educational status of mother, mothers that have university education relate significantly with use of SMS for contacting lecturers (r=0.158, p<0.05). Being a female is significantly related with use of SMS for contacting lecturers (r=-0.083 p<0.05). Catholic type of religious affiliation relates significantly with use of SMS for contacting lecturers (r=0.102, p<0.05). The three levels of occupation of father namely self (r=0.255, p<0.05), private (r=0.206, p<0.05 and public (r=0.299, p<0.05) relate significantly with use of SMS to contact others for advice on educational issues. Respondent whose father's highest educational status is primary education relates significantly with contacting others for advice on educational issues using SMS (r=0.141 p<0.05), Muslims relate significantly with use of SMS for contacting others on educational issues (r=0.153, p<0.05).

Table 2: Regression analysis of educational uses of SMS using demographics as predictors

Predictors	**Contact peers**		**Contact family**		**Contact lecturers**		**Contact others**	
	ßeta	Sig level	ßeta	Sig level	ßeta	Sig level	ßeta	Sig level
Demographics								
Age (Ref cat=18 yrs or less)								
19-24 yrs	0.037	0.565	0.081	0.203	-0.046	0.475	0.049	0.447
25-30 yrs	-0.036	0.576	0.036	0.575	0.028	0.658	0.029	0.646
Above 30 yrs	-0.040	0.442	0.078	0.127	0.047	0.358	-0.004	0.938
Gender (Ref cat=Males)								
Females	-0.002	0.971	0.043	0.352	-0.083	0.041	-0.022	0.634
Parents closest to (Ref cat= Father)								
Mother	-0.037	0.411	0.036	0.424	0.070	0.118	-0.049	0.272
Education of father (Ref cat=None)								
Primary	0.032	0.636	-0.008	0.908	-0.038	0.572	0.141	0.035
Secondary	0.044	0.621	-0.093	0.293	-0.010	0.906	0.109	0.219
College of Ed/Poly	0.166	0.100	-0.020	0.843	-0.012	0.903	0.202	0.044
University	0.128	0.289	-0.191	0.111	-0.075	0.535	0.175	0.144
Education of mother (Ref cat=None)								
Primary	-0.022	0.707	0.007	0.899	0.069	0.239	0.002	0.968
Secondary	-0.062	0.439	0.064	0.419	0.014	0.860	-0.012	0.881
College of Ed/Poly	0.030	0.742	0.117	0.200	0.116	0.206	0.021	0.817
University	0.027	0.771	0.120	0.184	0.158	0.043	0.037	0.684
Occupation of father (Ref cat=None)								
Self employed	0.156	0.224	0.079	0.533	0.025	0.848	0.255	0.045
Private sector	0.171	0.106	0.135	0.197	0.037	0.724	0.206	0.051
Public sector	0.106	0.407	0.091	0.473	-0.027	0.833	0.229	0.043
Occupation of mother (Ref cat=None)	-0.178	0.203	-0.041	0.764	-0.080	0.564	0.059	0.669
Self employed	-0.098	0.358	0.003	0.979	-0.073	0.488	0.026	0.809
Private sector	-0.106	0.418	-0.044	0.733	-0.017	0.896	0.061	0.640
Public sector								
Religion (Ref cat=Others)	0.028	0.631	-0.230	0.692	0.093	0.111	0.153	0.009
Islam	0.044	0.498	0.061	0.341	0.010	0.878	0.010	0.876
Pentecostal	-0.009	0.883	-0.036	0.548	0.102	0.033	0.075	0.211
Catholic	0.038	0.460	0.055	0.279	0.021	0.685	0.016	0.751
Protestant								
Living type (Ref cat= Off hostel on my own)	-0.057	0.241	0.083	0.046	-0.018	0.710	0.037	0.445
Hostel	0.064	0.171	-0.040	0.392	0.028	0.546	-0.038	0.406
Off hostel (with parents)	0.048	0.569	0.090	0.275	0.100	0.230	0.053	0.523
Marital status (Ref cat=Divorced)	0.070	0.823	0.125	0.141	0.045	0.600	0.053	0.534
Married								
Single								

(Notes: SMS users were coded as 1, and 0 otherwise; values in the table are standardized coefficients)

V. TEST OF HYPOTHESES

Hypothesis 1:
There is no significant relationship between the demographic variables and the use of SMS by higher institution students.
The results showed that, none of the demographic variables has significant relationship with using SMS to contact peers. Therefore, the null hypothesis is accepted. Age, gender, education of father, education of mother, occupation of father, occupation of mother, religion and marital status showed un-significant relationship with using SMS to contact family on educational needs. Therefore, null hypothesis was accepted. However, living in hostel shows a positive and significant relationship with use of SMS for contacting family about educational needs ($r=0.083$, $p<0.05$), therefore the null hypothesis was rejected. The female sex shows a negative and significant relationship ($r=-0.083$ $p<0.05$) compared to male with using SMS to contact lecturers. Therefore the null hypothesis was rejected. Among the four levels of educational status of mother, mothers that have university education relate significantly with use of SMS for contacting lecturers ($r=0.158$, $p<0.05$). Catholic type of religious affiliation relate positively and significantly ($r=0.102$, $p<0.05$) with use of SMS for contacting lecturers. Therefore null hypothesis is rejected. However, age, education of father, occupation of father, occupation of mother, and marital status show a non significant relationship with using SMS to contact lecturers. Therefore, the null hypothesis was accepted.

The three levels of occupation of father namely self ($r=0.255$, $p<0.05$), private ($r=0.206$, $p<0.05$ and public ($r=0.299$, $p<0.05$) show positive and significant relationship with the use of SMS to contact others for advice on educational issues. Respondents whose father's highest educational status is primary education ($r=0.141$ $p<0.05$), and tertiary education ($r=0.202$, $p<0.05$), show positive and significant relationship with using SMS to contact others for advice on educational issues ($r=0.141$ $p<0.05$), Muslims relate significantly with use of SMS for contacting others on educational issues($r=0.153$, $p<0.05$). Therefore, the null hypothesis was accepted. However, age, gender, occupation of mother, education of mother, parent closest to, marital status and living type show a non significant relationship with using SMS to contact others for advice on educational issues Therefore, null hypothesis was accepted.

Hypothesis 2:
There is no significant relationship between gratifications students sought from SMS use and the use of SMS
The gratification variables of SMS use was grouped into five: Affection, Convenience and low cost, Entertainment, Escape and Coordination. The results in Table 1 showed that, escape has a positive and significance relationship ($r=0.105$, $p<0.05$) with using SMS to contact peers. Therefore, the null hypothesis was rejected. However, entertainment shows a negative and non significant relationship with using SMS to contact peers($r=-0.014$). All other gratification variables; affection ($r=0.012$), convenience/low cost ($r=0.033$) and coordination ($r=0.016$) show positive and non significant relationship with using SMS to contact peers. Therefore, the null hypothesis was accepted. For contacting family, only convenience/low cost ($r=0.113$, $p<0.05$) shows positive and significant relationship. Therefore, the null hypothesis was rejected. However, Affection, Entertainment, Escape and Coordination show a un-significant relationship with using SMS to contact family on educational needs. Therefore, the null hypothesis was accepted. This result also applies to using SMS to contact others for advice on educational issues, except that entertainment ($r=0.115$, $p<0.05$) has a significant and positive relationship. Therefore, null hypothesis is rejected. All other gratification variables; affection, convenience/low cost, escape and coordination are not significantly related with using SMS to contact others for advice on educational issues. Therefore, null hypothesis is accepted. For contacting lecturers, all the gratifications positively relates with using SMS except affection that has negative relationship ($r=-0.020$) with using SMS to contact lecturers. None of the gratification variables show significant relationship with using SMS to contact lecturers. Therefore, the null hypothesis was accepted.

Hypothesis 3:
There is no significant relationship between the shortcomings students perceived from using SMS, and the use of SMS
The perceived shortcomings of SMS use was grouped into four; Confusing acronyms, unclear intention, ergonomics issues and timing. From Table 1, confusing acronyms shows a positive and significance relationship ($r=0.105$, $p<0.05$) with using SMS to contact peers. Therefore, null hypothesis was rejected. However, ergonomic issues ($r=0.034$) and timing ($r=0.036$) show positive but un-significant relationship with the use of SMS for contacting peers, while the relationship is negative for unclear intention ($r=-0.006$). Therefore, the null hypothesis was accepted. For contacting family about educational needs Confusing acronyms also shows a positive and significance relationship ($r=-0.112$, $p<0.05$). Therefore, null hypothesis is rejected. While ergonomic issues ($r=-0.031$), unclear intention ($r=0.035$), and timing ($r=0.057$) are not significantly related to using SMS to contact family about educational needs. Therefore, the null hypothesis is accepted. Timing shows a negative and significant relationship ($r=-0.123$, $p<0.05$) with educational use of SMS to contact lecturer, Therefore, null hypothesis is rejected. However, Confusing acronyms, ergonomic issues and unclear intention show non significant relationship with educational use of SMS to contact lecturer. Therefore, the null hypothesis was accepted.

Relationship between the use of SMS to contact

others and confusing acronyms of SMS texts is significant (r=-0.111, p<0.05). Therefore, the null hypothesis is rejected. All other shortcoming variables are not significantly related with educational use of SMS to contact others. Therefore, null hypothesis was accepted.

Hypothesis 4:
There is no significant relationship between unwillingness-to-communicate - Approach-Avoidance and unwillingness-to-communicate -Reward, and the use of SMS
The unwillingness-to-communicate variables are grouped into two; unwillingness-to-communicate - Approach-Avoidance and unwillingness-to-communicate -Reward. The results in Table 1 showed that none of the Unwillingness-to-Communicate variables show significant relationship with using SMS to contact peers. Therefore, the null hypothesis was accepted. The relationship between contacting family about educational needs and Unwillingness-to-Communicate variables are positive, while Unwillingness-to-Communicate Approach-Avoidance is significantly related (r=0.139, p<0.05) with using SMS to contact family about educational needs. Therefore, the null hypothesis is rejected. For contacting lecturers, all the Unwillingness-to-Communicate variables are positively related while Unwillingness-to-Communicate-Reward is significant (r=0.143, p<0.05) with using SMS to contact lecturers. Therefore, the null hypothesis was rejected. However, Unwillingness-to-Communicate Approach-Avoidance shows un-significant relationship with using SMS to contact lecturers. Therefore, the null hypothesis was accepted.

Unwillingness-to-Communicate Approach-Avoidance shows un-significant relationship with using SMS to contact others for advice on educational issues. Therefore, the null hypothesis is accepted. However, Unwillingness-to-Communicate-Reward shows positive and significant relationship (r=0.100, p<0.05) with using SMS to contact lecturers. Therefore, the null hypothesis was rejected.

VI. DISCUSSION OF FINDINGS

Demographics
Findings showed that there is significant relationship between gender with use of SMS to contact lecturers. This agrees with the findings of a study carried out by Hoeflich and Roessler (2001). They noted that female users have preference for written communication means. They also found that females not only send more extensive SMS-messages than male users, but they also write more letters. It also agrees with Peters et.al. (2003), in their study carried out in Netherland on motives for SMS use. They established that female users are more enthusiastic about using SMS as a means of communication than male users. Another interesting finding is the negative correlation of age with the use of SMS for the purpose of contacting lecturers for educational information. This result indicates that younger females use SMS to contact lecturers than older ones. This agrees with Lie (2004), who found that the patterns of text messaging among adolescents peaks significantly between the ages of 16 and 24. Also this study show that Catholic types of religious affiliation make educational connection to their lecturers more than respondents with other categories of religious affiliations, and respondents whose mothers have university education relate significantly with use of SMS for contacting lecturers. This indicates that mothers with university education influence their children to use SMS for the purpose of contacting their lecturers.

The result of this study deviates from those of Ajayi, Olatokun and Tiamiyu, (2002); Dorup, 2004) in their study that focussed on educational settings. They noted that demographic characteristics such as age, level of education, gender, rank, academic discipline, previous experience with computers, and personal innovativeness of educator, to varying degrees affect adoption and use of IT. On the contrary, the result from this study showed that there is no significant relationship between demographic characteristics of respondents with using SMS to contact peers on educational information.

However, living in hostel shows a positive and significant relationship with use of SMS for contacting family about educational needs. This indicates that students living in hostel use the technology to reach their family about educational needs and at the same time discourage others to do the same. Distance between those students living in the hostel and their parents or families may be a justifiable explanation for this. For contacting others to seek advice on educational issues, findings from this study shows that Muslims make use of SMS to seek advice on educational issues more than respondents with other categories of religious affiliations. Also, occupation of father and education of father fosters the use of SMS to contact others for advice on educational issues. This fully supports the findings of (Okuwa, 2007), he established educational status positively predicts income. Students who have higher allowances from their parents and guardians or from other sources are most likely to text more than their counterparts who do not have the same privileges. It is justifiable that wards of highly educated persons might have access to higher maintenance allowance, which might also reflect on their SMS spending.

Level and educational use of SMS
Findings showed that respondents received more SMS than they sent. A major explanation is often associated with unsolicited messages which have become very common – coming from advertisers of goods and services and telecommunication service operators themselves, among others. Altogether, 80.9% received texts often while 79% sent often. Fewer respondents reported never receiving (4.5%) and not often receiving (14.6%) than those who

reported never sending (5.1%) and not often sending (16%). This agrees with the findings of Nwagwu (2012) on educational uses of SMS by students in Nigerian Universities. He showed that students received more SMS than they sent. This study established that students actually reported using SMS for educational purpose; and they link one another, parents, lecturers and others for this purpose. There is a significant relationship between use of SMS and use of SMS to make educational contacts. This implies that, those who use SMS have a likelihood of using it to make educational connections. Also, the finding showed that Using SMS to Contact family/relatives about educational needs is the highest educational reason for which the students use SMS (86.4%) and 72.3% reported using SMS often for this purpose. While (85.0%) of the students use SMS to Contact/exchange educational information with peers, followed by as high as using SMS to Seek advice on educational issues between students and various other members of the academic and nonacademic community such as secretaries, technologies, friends in the city, among others 82.1%. Using SMS to Communicate educational issues with lecturers is the least educational reason for which the students use SMS (59.9%) and as high as 36.3% of the students reported using it often for this reason.

Gratifications of SMS use

The result from the principal component analysis from this study shows that the major gratifications of SMS use under affectionate needs is to encourage/comfort people, to send goodwill messages to loved ones, and to show appreciation. For convenience and low cost, SMS is quick and immediate, easy to use are the major gratifications of SMS use. For coordination using SMS to agree on how and when to meet and to clarify information about an event are the major gratifications of SMS use while Using SMS to get sports news and to general news are the major gratifications for entertainment. To put off something one should be doing and to get away from what one is doing are the major gratifications under escape. This study also found that most students were motivated to use SMS by such instrumental reason such as convenience and low cost, coordination, and entertainment. Others used it for intrinsic motive such as affection and escape. This agrees with the findings of Leung and Wei (2000). They found mobility, immediacy, and instrumentality the strongest instrumental motives in predicting the use of mobile phones, followed by intrinsic factors such as affection and sociability. When comparing the findings from this study to the research reported by Peters et.al. (2003), on the motives that young people in the age of 12 to 25 have for using SMS from a uses-and-gratifications point of view, the same intrinsic or social and instrumental or task-oriented motives are applicable to SMS. Also, Leung (2007) showed that convenience and low cost, entertainment, coordination, and fashion were strong instrumental motives for SMS use while affection and escape were intrinsic factors.

For contacting peers on educational information, results showed a positive and significance relationship between the gratifications of escape and using SMS to contact peers on educational information. This finding is in line with unwillingness to communicate and college students' motives in SMS mobile messaging by Leung (2007) which indicated that escape is related to elements of communication motivation in how students could use SMS. However, findings from this study contradict earlier study by Papacharissi and Rubin (2000) on examination of audience uses of the Internet and found five gratifications: Interpersonal Utility, Information Seeking, Convenience, and Entertainment motives for using the Internet. Furthermore, only convenience/low cost showed positive and significant relationship on using SMS to contact family about educational needs. This indicates that the major gratification explanation for contacting family for educational purposes is convenience/low cost. It is also worth noting that using SMS to contact others is done for entertainment. This agrees with the finding of (Leung, 2007), he noted that sending SMS to family is done for entertainment. However, contrary to other studies (Leung and Wei, 2000; Ferguson and Perse, 2000; Peters et.al, 2003; Leung, 2007), none of the gratification variables show significant relationship with using SMS to contact lecturers. This indicates that none of the gratifications explains why students use SMS to contact their lecturers.

Shortcomings of SMS Use

The result shows that students are aware of the shortcomings inherent in SMS, such as confusing acronyms, ergonomics issues, unclear message intention and timing. The result of this study also shows that confusing acronyms shows a positive and significance relationship with using SMS to contact peers and contacting family about educational needs. This indicates that confusing acronyms does not inhibit the use of SMS to contact peers and family on educational issues. This support findings of (Leung, 2007), according to him limitation of text messaging has contributed to its huge and growing appeal in the youth market, resulting in a comprehensive and ingenious sub-language of abbreviations and characters based on pictograms. It also agrees with the findings of (Tappscott, 1998; Sutherland and Thompson, 2001). They noted that the shortcomings of SMS did not inconvenient or discourage students from using the technology, for they are a group that loves technology. Furthermore, timing showed negative and significant relationship with educational use of SMS to contact lecturer. This indicates that the arrival of texts at very unusual times, as well as late delivery of text messages constitute obstacles to the use of SMS for contacting lecturers. Although the constraints of confusion of language and timing somewhat inhibit the use of SMS for this purpose. But it appeared that lecturers might not appreciate struggling to decode and understand SMS texts when they come from their students, and this may be why the

shortcomings such as confusion of language and timing are problematic in this regard. This agrees with Nwagwu (2012), he noted that there exist environmental specific challenges that cause delays in delivery of SMS, detracting the instant messaging expectation of the technology.

In addition, the relationship between use of SMS to contact others for advice on educational issues and confusing acronyms of SMS texts is negative and significant. This implies that use of SMS to contact others for advice on educational issues is, however, constrained by the confusion that often arises due to unclear acronyms. The annoyance that accompany the confusions in the shortening of words which is necessitated by the need to say so much within the limited space constitute the major constraint encountered by SMS users. This agrees with the study of (Katz and Rice, 2002) on instant messaging. They noted that instant messaging is more demanding in many ways.

Unwillingness-to-Communicate

For Unwillingness-to-Communicate-Reward, using SMS because of being afraid of social contact, and to tell someone what cannot be said face-to-face were the major reasons of SMS use. Most respondents reported using SMS in order to avoid face-to-communication. Findings showed that none of the Unwillingness-to-Communicate variables had significant relationship with using SMS to contact peers. This implies that students, who use SMS to contact peers, were those who had less fear of, and were more willing to get involved in real life communication especially with their friends. However, this result contradicts some earlier research which found that talk radio callers and internet users who avoid face-to-face interaction or found it less rewarding, used talk radio and internet more for interpersonal communication purposes and chose it as a functional alternative to satisfy their interpersonal needs (Armstrong and Rubin, 1989; Papacharissi and Rubin, 2000). These opposed results can be explained by the fact that SMS may have become a popular and common interpersonal communication tool among higher institution students in Ekiti State, Nigeria despite its shortcomings.

For contacting family about educational needs, there is a positive and significant relationship on Unwillingness-to-Communicate Approach-Avoidance. The result of this study shows that students who use SMS to contact family about educational needs were more socially anxious or felt less valued in face to face communication. In light of the physical characteristics and technological capabilities of sending messages using SMS via a mobile phone, SMS is a novelty that appeals to a wide range of users. It is particularly appealing, perhaps, to people who are more apprehensive about face-to-face communication and find real life communication with family and friends less rewarding because they may feel more confident when using SMS for interpersonal encounters. For contacting lecturers, all the Unwillingness-to-Communicate variables are positively related while Unwillingness-to-Communicate-Reward is significant with using SMS to contact lecturers and also with using the technology to contact others for advice on educational issues. This study shows that being unwilling to get involved in face-to-face communication were reasons why students use SMS to contact their lecturers and others for advice on educational issues. They feel more confident when using SMS for interpersonal encounters with their lecturers. The motivation around the capability of SMS to enable students avoids face-to-face communication also explain use of SMS by students to contact lecturers and others.

VII. CONCLUSION AND FUTURE STUDIES

This study provided empirical data on the use of SMS by higher institution students. The findings revealed that gratifications of SMS use such as convenience and low cost, escape, and entertainment can be used to significantly predict the use of SMS by students to contact family, peers and others respectively. However, none of the gratification significantly explained why students use SMS to contact lecturers. The study also demonstrates that confusing acronyms, the arrival of texts at very unusual times, as well as late delivery of text messages constitute obstacles to the use of SMS. The motivation around the capability of SMS to enable students avoids face-to-face communication also explain use of SMS by students to contact family, lecturers and others. However, the findings suggest that the impact of demographic characteristics of respondents with using SMS to contact peers on educational information is negligible. Nevertheless, living in the hostel has significant impact on use of SMS for contacting family about educational needs. While age, gender, and religious affiliation influence the use of SMS to contact lecturers, just as religious affiliation, occupation of father and education of father fosters the use of SMS to contact others for advice on educational issues. The study established that higher institution students in Ekiti State use SMS for educational purposes, despite the shortcomings inherent in SMS, such as confusing acronyms, ergonomic issues, unclear message intention and timing. Higher institutions have a lot of valuable information which can be provided to the students, such as grade release, enrollments information, announcement, internship opportunity.

It is therefore recommended that school authorities should identify and communicate with students through SMS to bring about timely information and sense of familiarity that could enhance teaching-learning process. Effort should be directed at providing ICT infrastructures such as mobile friendly services that the majority of their users can access for educational purpose. Future studies could examine details of the information communicated by students with their parents, lecturers, peers and others. This information is necessary for facilitating SMS information systems which have become necessary to interpersonal

communication between parents and their wards when their wards are in institutions far away from home, and between lecturers and students and other peers. In addition, this study basically considered the use of SMS. More studies are needed to explain the pattern of adoption, as different people seem to value different part of the functionality of SMS, and use the technology in different ways.

REFERENCES

[1] Ajayi, A. Olatokun, W.M. & Tiamiyu, M.A. (2002). Computer anxiety, Phobia, Obsession and Work stress at the University of Ibadan: Part 1- Prevalence and Correlates. *African Journal of Libraries, Archives and Information Science.* 11(2), 167-183.

[2] Armstrong, C.B. & Rubin, A.M. (1989). Talk radio as interpersonal communication. *Journal of Communication* 39(2), 84–94.

[3] Barnes S.J. (2002). The mobile commerce value chain: analysis and future developments. *International Journal of Information Management 22(1), 91–108.*

[4] Blumler, J.G. & Katz, E. (1974). *The Uses and Mass Communications: Current Perspectives on Gratifications Research*. Sage, Beverly Hills, CA.

[5] Brown, B. (2002). Studying the use of mobile technology. In Brown, B., Green N., & Harper R. (Eds.), *Wireless World: Social and interactional aspects of the mobile Age* London: Springer. pp. 3-16.

[7] Burgoon, J.K. (1976). *The Unwillingness to communicate scale*: development and validation. Communication Monograph 43(2), 60–69.

[8] Burgoon, J.K. & Hale, J.L. (1983). A *research note on the dimensions of communication reticence*. Communication Quarterly 31(2) 238–248.

[9] Byrne, R. & Findlay, B. (2004). Preference for SMS versus telephone calls in initiating romantic relationships. *Australian journal of emerging technologies and society* 2(1), 48-61.

[10] Crisler, K., Anneroth, M., Aftelak, A. & Pulli, P. (2003). The human perspective of the wireless world. *Computer Communications*, 26(1) 11-18.

[11] Dimmick, J., Sikand, J. & Patterson, S., (1994). The gratifications of the household telephone: sociability, instrumentality and reassurance. *Communication Research* 21(5), 643–663.

[12] Dorup, J. (2004). Experience and attitudes towards information technology among firstyear medical students in Denmark: Longitudinal questionnaire survey, *Journal of Medical Internet Research*, 6(1): e10. http://www.jmir.org/2004/1/e10/. Retrieved 10th March, 2009.

[13] Eighmey, J. & McCord, L. (1998). Adding Value in the Information Age: Uses and Gratifications of Sites on the World Wide Web. *Journal of Business Research*, 51(2) 187-194.

[14] Farradane, J. (1979). The nature of information. *Journal of Information Science*, 1(1), 13-17.

[15] Ferguson, D. A. & Perse, E. M. (2000). The world wide web as a functional alternative to television. *Journal of Broadcasting & Electronic Media, 44*(2), 155-174.

[16] Grant, I. & O'Donohoe, S., (2007). Why young consumers are not open to mobile marketing communication. *International Journal of Advertising* 26(2), 223 – 246.

[17] GSM Association (2002). *GSM Statistics.* (Internet). Available: http://www.gsmworld.com/news/statistics/index.shtml. 10th March, 2009.

[18] Herzog, H. (1944). What do we really know about daytime serial listeners? In P. F. Lazarsfeld & F. N. Stanton (Eds.), *Radio research 1942–1943* (pp. 3–33). New York: Duell, Sloan & Pearce.

[19] Hoeflich, J. R., & Roessler, P. (2001). Mobile written communication, or e-mail on your cellular phone. The significance of SMS use by adolescent cellular phone users. *Rundfunk und Fernsehen: Forum der Medienwissenschaft und Medienpraxis, 49*(4), 437-461.

[20] Holloway, S.L., & Valentine, G., (2003). *Cyberkids: Children in the Information Age*. RoutledgeFalmer, London.

[21] International Telecommunications Union (2008) *Mobile Cellular Subscribers per 100 people.* (Internet). http://www.itu.int/ITUD/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/CellularSubscribersPublic&RP_intYear=2007&RP_intLanguageID=1. 11th May 2009.

[22] Katz, E., Gurevitch, M., & Haas, H. (1973). On the use of the mass media for important things. *American Sociological Review* 38(1), 164–181.

[23] Katz, J., & Rice, R., (2002). *Social Consequences of Internet Use Access, Involvement, and Interaction*. The MIT Press, Cambridge, MA.

[24] Leung, L., & Wei, R. (1999). Who are the mobile phone have-nots? *New Media & Society, 1*(2), 209-226.

[25] Leung, L., & Wei, R. (1999). The gratifications of pager use: sociability, information-seeking, entertainment, utility, and fashion and status. *Telematics and Informatics* 15(1), 253–264.

[26] Leung, L., & Wei, R. (2000). More than just talk on the move: Uses and gratifications of the cellular phone. *Journalism and Mass Communication Quarterly*, 77(2), 308-320

[27] Leung, L. (2002). Loneliness, self-disclosure, and ICQ (''I Seek You'') *use CyberPsychology & Behavior* 5(3), 241–251.

[28] Leung, L. (2003). Impacts of net-generation attributes, seductive properties of the Internet, and gratifications-obtained on Internet use. *Telematics and Informatics* 20(2), 107–129.

[29] Leung, L. (2007). Unwillingness-to-communicate and college students' motives in SMS mobile messaging. *Telematics and Informatics* 24(1), 115 – 129.

[30] Lie, E. (2004). *Shaping the Future Mobile Information Society: The Case of the Kingdom of Norway*. International Telecommunication Union Workshop on Shaping the Future Mobile Information Society.

[31] Lin, C.A. (1998). Exploring the personal computer adoption dynamics. *Journal of Broadcasting and Electronic Media* 41(1), 95–112.

[32] Ma, M.L.Y. & Leung, L. (2005). Unwillingness-to-communicate, perceptions of the Internet, and self-disclosure in ICQ. *Telematics and Informatics* 23(2), 22–37.

[33] Maslow, A.H., (1970). *Motivation and Personality*. Harper & Row, New York, NY.

[34] McQuail, D. (2001). With more hindsight: conceptual problems and some ways forward for media use research. *Communications: The European Journal of Communication Research*, *26*(4), 337-350.

[35] Mobile streams Ltd (2001). *SMS History Zone.* (Internet). Available: http://www.mobilesms.com/history.asp. 11th May 2009.

[36] Muk, A., (2007). Consumers' intentions to opt in to SMS advertising. *International Journal of Advertising* 26(2), 177 – 198.

[37] Nigerian Telecommunications Report (2008), "Nigeria telecom sector analysis", available at: www.reportbuyer.com/telecoms/country_overviews_telecommunications/nigeriatelecom_ sector_analysis.html .June 11, 2011.

[38] Nwagwu, W. E. (2007). The internet as a source of reproductive heslth information among adolescent girls in an urban city in Nigeria. *BioMed Central Public Health* 7(2), 2-13

[39] Nwagwu, W. E. (2012). Short messaging services and educational information sharing by students in Nigerian universities. *World Journal of Science, Technology and Sustainable Development* 9(3), 235-253.

[40] Okuwa, O.B. (2004), "Private returns to higher education in Nigeria African economic research", Consortium Research Paper 139, Nairobi, AERC.

[41] Papacharissi, Z. & Rubin, A. M. (2000). Predictors of internet use. *Journal of Broadcasting & Electronic Media, 44*(2), 175-196.

[42] Papacharissi, Z. (2002). The self online: the utility of personal home pages. *Journal of Broadcasting and Electronic Media* 46(3), 346–369.

[43] Peters, O., Johan, A., Buren, V., Snippers, R., & Jacqueline, W. (2003). Motives for SMS use. *Paper presented at the annual meeting of the International Communication Association, Marriott Hotel, San Diego, CA Online.* (Internet). http://www.allacademic.com/meta/p112026_index.html. 12thMarch, 2009.

[44] Rubin, A.M. (1981). An examination of television viewing motivations. *Communication Research* 8(2), 141–165.

[45] Rubin, A.M. (1983). Television uses and gratifications: the interactions of viewing patterns and motivations. *Journal of Broadcasting* 27(1), 37–51.

[46] Rubin, A.M. (1994). Media uses and effects: A use and gratifications perspective. In J. Zillmann & D. Bryant (Eds.), *Media effects: Advances in theory and research (pp. 571-601). London: Erlbaum.*

[47] Saranphong, P. & Ridwan S. (2006). Mobile Education Services Based on SMS and their Architecture Comparison. *International Journal of the computer, the internent and management* 14(1), 49-53.

[48] Sikkema, P., & Noordhuizen, M. (2001). *Jongeren 2001: altijd met elkaar verbonden.*[Young people 2001: always connected]. Amsterdam: Qrius.

[49] Soola, O.O. (1998). Modern business communication. Kraft Books Limited, Ibadan. 206p

[50] Sutherland, A. & Thompson, B. (2001). *"Kidfluence" Why Kids Today Mean Business*. McGraw Hill, New York, NY.

[51] Swanson, D. L. (1992). Understanding audiences: Continuing contributions of gratifications research. Poetics*: Journal of Empirical Research on Literature, the Media and the Arts*, 21(3), 305-328.

[52] Tappscott, D. (1998). Growing up Digital: The Rise of the Net Generation. McGraw-Hill, New York, NY.

[53] Tiamiyu, M.A. (2003) *Organisation of Data in information Systems. A synthesis for the information professions*. Stirling-Horden Publishers (Nig) Ltd. Ibadan. Pp.1

[54] United Nations Conference on Trade and Development. Information Economy Report 2007-2008. (Internet). Available from: http://unctad.org/SearchCenter/Pages/Results.aspx?k=Information%20Economy%20Report%202007-2008. 11th May 2009.

[55] Wei, R. (2001). From luxury to utility: A longitudinal analysis of cell phone laggards. *Journalism & Mass Communication Quarterly* 78 (4), 702-719.

[56] Yan, X., Gong, M. and Thong, J.Y.L. (2006). Two tales of one service: User acceptance of short message service (SMS) in Hong Kong and China. *Young Consumer 8(1), 16 – 28.*