

Factors Influencing the Switching Behaviours of Subscribers' of Telecommunication Services: The Perspective of Tertiary Students in Ghana

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Abstract— This paper examines factors that influence students' behaviour switching behaviour when they decide to choose a telecommunication service provider in Ghana. The research was done using a quantitative survey of 122 randomly selected University students using a structured questionnaire. The data collected was analysed using SPSS version 20 to do both descriptive and factor analysis. The findings according to this research is that the factors that influences choice and switching behaviour of students among the telecommunication service providers (that is, the six telecommunication companies) in Ghana are; wide network coverage; faster internet services, and cost savings aided by commercial sources of information such as the television and internet. From this research, telecommunication companies in Ghana are encouraged to target mostly the youth under 30 years through mainly the electronic media. They should be aware that their customers are adventurous and easily switch to service providers that offer premium services at affordable cost.

Keywords— Telecommunication, switching, Choice, Multiple, Services, Mobile Phone, Service, Providers.

I. INTRODUCTION

The mobile phone is also variously known as a cellular phone, cell phone, hand phone, or simply a phone. A mobile phone can make and receive telephone calls over a radio link within a wide geographic area. It works by being connected to a cellular network provided by a mobile phone operator which enables access to the public telephone network. An advance form of the mobile phone is the smartphone. The smartphone is a mobile phone that not only functions as a telephone but also as a miniature computer. It is any mobile phone that performs many of the functions of a computer, typically having a touch screen interface, internet access and an operating system capable of running downloaded applications, featuring messaging, camera, GPS, and others.

Innovation in mobile phone design in recent times has expanded its functionalities and features. The history of the smartphone started in the early 1990s. In 1994 the IBM Simon was released as the first commercial smartphone. It was demonstrated as a prototype in 1992 by Frank Canova called "Angler" (Connelly, 2014; Sager, 2012; Spinfeld.com, 2016), it was followed closely in 1996 with the release of Nokia 9000 by Nokia then there was an explosion of different brands of smartphones by different manufacturers.

In its basic form, the smartphone's basic features make it act as a communication device, multimedia device, and mini application operating platform. On the advance side, one will find features such as WiFi/NFC/Bluetooth, Micro or Nano SIM card, High mAh Battery, Wireless Print & Fax, Rear/Front Camera with Flash, Fingerprint Scanner, Screen Mirroring, 3G / 4G bandwidth, Advance Operating System, Extended RAM Memory and others included in all the latest smartphones on the market. The smartphone market is now poised for future features that will include Flexible Screens,

In-Built Projector, 3D Screens and Holograms, Waterproof and Break proof, Endless Battery Life, Wireless recharging, Prediction, and IPS (written in full).

All these features have transformed and continue to transform the smartphone into having several uses. It is now a device used for texting, e-mailing, social networking, e-shopping, video calling and conferencing, gaming, entertainment, word search (Dictionary), geographical positioning systems (GPS), QR Scan, mobile TV, and medical uses (for instance Smartphone Stethoscope, Ophthalmoscope, Microscope, Dermatoscope, Video Laryngoscope, and also to Measure Blood Pressure).

The modern mobile phone offers many advantages that include education, improvement in communication skills, use of Internet, for emergency situations, and indeed for multiple uses. The use of mobile phones also have some drawbacks such as less privacy and security, road accidents, and brain cancer to name a few.

In 1973, John F. Mitchell and Dr. Martin Cooper, both of Motorola demonstrated the first hand-held cell phone. The first commercial mobile phone was launched in 1983 and from then to 2013 about half of the world's population, more than 3.4 billion people, own at least one mobile phone (Sawers, 2017). Mobile phones are now used for several purposes, including keeping in touch with family & friends, entertainment, conducting business, and very useful in emergency situations. According to Kwakwa (2012), some of the reasons why people use more than one mobile phone in Ghana include; making affordable calls, enjoying excellent service from other network providers, for business purposes, security reasons and to have a place for their many contact numbers. The number of cell phone manufacturers have also increased dramatically. With advancement in smartphone features and designs couple with the evolution in the industry

in recent years have shifted the popularity ratings of different companies thereby creating stiff competition amongst industry players. The top ten cell phone manufacturers in 2017 were, Samsung, Apple, Huawei, Lenovo, Xiaomi, LG, ZTE, Oppo, Alcatel, and Vivo (Bhasin, 2018). Similarly, the number of mobile phone service providers over the world increased in response to demands for telecommunication services.

The dramatic increase in demand for mobile telecommunication services coupled with highly sophisticated and demanding customers (Rahman, 2006) has fuelled and facilitated an equal increase in telecommunication companies to meet the demand. The competition is becoming very keen due to the expansion of old companies and the entry of new ones onto the market.

Ghana is no exception to this new trend. The first cellular phone service in Ghana was initiated by Mobitel in 1992. In that year alone, 19,000 Ghanaians owned mobile phones. In 1998 the number of mobile phone users in the country increased to 43,000 and before the end of 1999, there were 68,000 users. As of 2013, mobile-cellular telephone subscription had reached 28,026,482 (ITU, 2014). This phenomenal growth and increase in the number of subscribers over the years is due to the liberalisation of the telecommunication industry that started in 1992.

The competition within this sector in the last few years increased due to the liberalisation of the mobile telecommunication spectrum in Ghana. The need to survive has, therefore, become very intense in forcing the companies to find innovative ways to attract and retain customers. As young as the industry is, yet the growth is much faster when compared to other industries due to the aggressive market-oriented business strategy. The mobile telecommunication industry in Ghana is moving towards high market penetration rate with many foreign investors still desirous of doing business in the telecommunication sector in the country asserting the fact that Ghana has become a significant hub for telecommunication.

The telecommunication sector, especially the mobile phone sector, in Ghana is one of the fastest growing business segments of the country which provide a lot of value addition to the society with its services and creation of employment opportunities. There are six mobile phone operators in the country – Scancom Ghana Ltd (MTN), the market leader; Millicom Ghana Ltd (Tigo), the first private telecommunication operator in Ghana; Airtel Ghana Ltd; Expresso Ghana Ltd, the only private telecom operating fixed lines and also locally owned; Vodafone Ghana Ltd, with government interest after the takeover from the Ghana Post and Telecommunication company; and Glo Ghana Ltd, the latest entrant into the Ghanaian market. On March 4, 2017, Tigo Ghana and Airtel Ghana merged to form AirtelTigo.

These companies compete among themselves to grab customers by providing a wide range of services. This industry has reached maturity stage in telecommunication business in 4G network services. The companies offer basic services of cell phones in addition to other value-added services. Along with the normal services almost all the operators now offer internet facilities. Their services include prepaid, postpaid,

internet, value-added services, roaming, and devices. A summary of the mobile phone service providers in Ghana is given in table 1 and fig. 1 below.

Table 1: Mobile Phone Subscriber Distribution in Ghana as of September 2017

Service Provider	Number of Subscribers
Airtel Ghana Ltd	4,253,993
Expresso Ghana Ltd	23,264
Glo Ghana Ltd	781,022
Millicom Ghana Ltd (Tigo)	5,489,994
Scancom Ltd (MTN)	17,817,273
Vodafone Ghana Ltd	9,079,502
TOTAL	37,445,048

Source: National Communication Authority, 2017



Fig. 1: Mobile Phone Market Share in Ghana as of September 2017/ Source: National Communication Authority, 2017

The fast growth and development in information technology and mobile devices have enabled the Ghanaian mobile phone service market to become more and more competitive. These competitors assume that value-added services increase the customer loyalty. The question is, is this true? On the other hand is it the only factor that played a significant role in building and maintaining customer's loyalty? Do the mobile phone service providers consider the factor of quality service as a means of building customer commitment and loyalty?

A. Problem Statement and Purpose of Study

Customer relationship is becoming a major feature in all organisations. Organisations are now seeking to attract and retain profitable customers(Kibeh, 2013). The interest of these organisations go beyond just acquiring new customers and retaining them for its own sake, but are aware of the fact that cost of acquiring a new customer is between 10 and 15 times the cost of retaining an existing customer(Armstrong & Kotler, 2013; Magatef & Tomalieh, 2015).The increases in the number of subscribers (0.09% month-on-month overall voice subscription increase for September 2017) on the various operators in Ghana have brought with it the challenges of customer satisfaction (NCA, 2017).

Customer satisfaction (CS) has become central, attracting much attention from scholars and practitioners. It has been recognised as a prime factor for achieving quality improvement programmes, and a central focus for strategic marketing management in business organisations that have a long-term perspective for growth. Satisfaction is a key determinant of gaining customer trust (Li & Yeh, 2009) and loyalty (Lin & Wang, 2006). Suki (2012), asserts that in their interactions with vendors, customers may have different reactions towards the transactions engaged in, which ultimately affects their overall satisfaction. Mobile operators in Ghana currently provide several services including voice call, voice message, SMS, MMS, internet, international roaming, money transfer and information services that include, news, stock quotes, weather, etc. All these are done in the effort to promote the quality of services for the satisfaction of their customers.

The customer is the key concern of the marketer because the customer performs a key role in business. It is the customer that makes it possible for the business to exist. Businesses are created with the customers in mind and therefore remain the key focus. There is considerable evidence that higher customer satisfaction leads to higher profitability in business. Thus, the marketing manager's main concern in today's competitive business is to attract, develop and maintain customers through quality customer service to surpass that of the competitors.

As of 2012 Ghana had 25.6 million mobile cellular lines and the 42nd in the world (World Factbook, 2014), this number has increased to 37.4 million lines in 2017 (NCA, 2017). In spite of these outstanding and remarkable improvements in the accessibility of mobile services in Ghana, the rate of customer complaints is on the increase (Bokpe, 2017; Daily Graphic, 2013; Lokko, 2016). Users of these companies' services are demanding improved services at a time when competition is keener in the industry. The dissatisfaction is across all the six telecommunication operators currently in the country. Most of the complaints are centred on a wide range of issues including call drops, poor quality of voice, high cost of data, high rates of tariff; weak signal and coverage strength; high call set up time, high call setup failure rate, high call congestion rate, high call drop rate, low call completion rate, and poor call audio quality. For instance, the Daily Graphic, on Tuesday, November 8, 2011, reported that the national regulator, National Communications Authority (NCA), has imposed a penalty of 1.2 million Ghana Cedis on five telecommunication companies in Ghana for poor services. The five companies were MTN, Vodafone, Airtel, Expresso and Tigo (Daily Graphic, 2011). This means all the mobile operators in the industry in Ghana were punished for failure to provide quality service to subscribers. Quite recently, the same newspaper reported of hikes in the tariffs of these same companies without the complementing increase in service quality (Bokpe, 2014). There is, therefore, the need to evaluate the determinants of customer satisfaction in the mobile telecommunication industry in Ghana.

All said and done, the state of customer satisfaction with service quality delivered in Ghana's Mobile

Telecommunication Networks (MTNs) is still an under-researched area. Government's telecommunications reform objectives as stated in the Accelerated Development Program (ADP) for 1994-2000 (Government of Ghana, Ministry of Trade and Communications, 1994) are yet to be fully realised. A case in point is that although the ADP did not call for universal access, every village in the country with a population greater than 500 should have one payphone. This goal still remains a mirage in the history of telecommunication in Ghana. Hence access in underserved areas is still problematic. Frempong and Henten (2004) in a discussion paper on telecommunication developments and investments in Ghana observed that with respect to objectives set by the government, only part have been met, citing development in rural areas and low quality of service as issues yet to be met. There is, therefore, widespread dissatisfaction with the general telecommunication development in Ghana among users as well as policy decision makers and administrators.

Mobile Number Portability (MNP), a system which allows mobile subscribers to change from one network to another without changing any part of their mobile number, was launched in Ghana on July 7, 2011. The motive behind MNP is to provide consumers the freedom to move freely between service providers, to promote competition and enhance service innovation in the mobile industry (Buehler & Haucap, 2004; Durukan, Bozaci, & Dogan, 2011; Lyons, 2006). Park (2009) believes MNP is a facility that leads to better service quality, and reduction in prices since its aim is to lure more customers and that it puts intense pressure on mobile service providers to offer a more competitive product to their customers. However, Shin (2006) points out that implementing MNP is not a guarantee of ensuring competition in the mobile market. The implementation of MNP in Ghana has been one of the most successful in Sub-Saharan Africa with the number of completed ports averaging 6% of the total active mobile subscription base and a porting processing speed of about 4 minutes (NCA, 2014). This high rate of switching service providers by customers could only mean that there is high dissatisfaction among users of the service.

The phenomenal transformation of the mobile phone into an indispensable household tool through their enhancement with highly innovative features to meet users' information needs (Hakoama & Hakoyama, 2011), means mobile phone services providers must also add services that will complement these enhanced gadgets. According to Mokhlis and Yaakop (2012), the modern mobile phone now provides services beyond voice, to include: (1) communication services allowing SMS, graphics and voice, (2) wireless Internet services such as browsing and e-mail, and (3) multimedia and entertainment services such as colour screen, motion picture, camera, games, and music. Whilst Ling, Hwang, and Salvendy (2005) believes that these are key features that enable universal information access and facilitate the formation of social networks among its users.

With competition intensifying among the telecom operators, it is necessary for them to learn about consumers' perception on price, promotion, service quality and other

important factors that may have been playing a vital role in selecting the telecommunication service providers.

Therefore, the major objective of this study is to cautiously examine the factors affecting the perception and subsequent selection of mobile telecommunication service in Ghana with particular emphasis on subscribers in the tertiary institutions, who, it is believed are in the age group of 35 and below, form the largest users of mobile phone services (Agyekum, Tchao, & Affum, 2013).

B. Objectives of the Study

The main objective of this study is to investigate the factors that influence university student subscribers' first time choice and switching decisions in the telecommunications industry in Ghana. Specifically, the study has four objectives which are to:

- i. Identify the factors considered by mobile telecommunications subscribers in Ghana when choosing networks for the first time
- ii. Identify the factors considered by mobile telecommunications subscribers in Ghana when switching networks.
- iii. To determine how they source information to help them make a choice of mobile service providers
- iv. To determine the reasons and extent for using multiple SIM cards by subscribers among respondents

C. Research Questions

- i. What factors are considered important by mobile telecommunications subscribers in Ghana when choosing networks for the first time?
- ii. What factors are considered important by mobile telecommunications subscribers in Ghana when switching networks?
- iii. What are the sources of information subscribers use to help them make a choice of mobile service provider?
- iv. How many of the mobile telecommunication subscribers in Ghana are multiple sim users? Or how prevalent is the practice of multiple sim cards among Ghanaian telecommunication subscribers?
- v. Why do subscribers use multiple SIM cards?

II. LITERATURE REVIEW

This section presents a summary of literature review on various thematic areas and concepts that have been used within this research. The literature review is to do an assessment of what other researchers have done on the topic and the concepts underlying the research. The section will therefore review the concepts of customer satisfaction, student use of multiple phone services, and factors affecting customers' choice of multiple service providers.

A. Customer Satisfaction

Customer satisfaction does not lend itself to easy definition or explanation and remains one of the most complex constructs (Besterfield, 1994). For instance, Anderson and Sullivan (1993), contends that satisfaction is a "post consumption" experience that compares with what is perceived as expected quality. Customer satisfaction is

considered the most important factor for a company since it leads to competitiveness and success for companies and also the deciding factor of customers loyalty to one telecommunication service provider or the other (Hennig-Thurau & Klee, 1997). According to Kotler and Keller (2009), satisfaction is "a person's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his/her expectations".

All the above definitions, like many others on customer satisfaction studies have used the Disconfirmation of Expectations model which assumes that consumers evaluate product performance by comparing its perceived performance with their expectations. Banker, Potter, and Srinivasan (2000) asserts that customers are satisfied when their perceived performance matches or exceeds expectations and vice versa. It is believed that customers who are satisfied customers will usually repeat the purchase and eventually be brand loyal conveying positive word-of-mouth advertising which eventually increases sales (Aaker, 1992; Oliver, 1997). On the other hand, Hirschman (1970) stated that dissatisfied customers may discontinue patronising the product and also spread negative advertising that may lead to avoidance of the product manufacturer.

Almossawi (2012) studying customer satisfaction of the telecommunication industry in Bahrain found that 69% of mobile users in Bahrain already switched from one provider to another due to their dissatisfaction with their previous providers or due to better offers, image, and reputation of the new provider. This implies that the major determinants of switching are found to be factors including better offers, better charges/fees, and stronger signal coverage. Only 33% of the respondents are very satisfied with their current operator, implying 67% are very vulnerable to switching. Also that satisfaction determinants fall into the following categories: Financial factors (such as offers, charges, rents); communication factors (such as signal and voice quality) and intercommunication factor (such as customer service, keeping in touch, user-friendly websites).

Although 95% of the respondents were satisfied with their mobile service providers (33% very satisfied and 62% somewhat satisfied), 85% of satisfied respondent (95%) indicated would change to another provider that made a better offer. Therefore satisfaction does not guarantee loyalty.

B. Student Use of Multiple Phone Services

It is not uncommon to find mobile phone subscribers in Ghana patronising multiple mobile phone services from two or more service providers. The NCA in 2012 reported that approximately, 16 million people use 25 million active mobile phone lines in Ghana. This phenomenon is also very common with students especially, tertiary students. For instance, Keelson (2012), stated that more than 40% of tertiary students in Ghana used more than one active phone lines. Buehler and Haucap (2004), believe that multiple phone line usage may be common because users may be attached to their lines after using a particular line for a long time and establishing them as their source of long-standing personal and business contacts.

Hence, these lines are maintained even if the need for acquiring new lines emerged. This problem, however, is thought to minimise multiple phone lines with the emergence of mobile number portability. This enables subscribers to move from one service provider to another for better service while maintaining their old lines.

Keelson (2012), who studied 500 tertiary students on the factors affecting consumer choice of multiple mobile services in Ghana find that the poor mobile services were responsible for consumer behaviour or choice of multiple phone services.

It is essential that Mobile Service Providers (MSPs) understand the factors that influence the choice of multiple phone services (MPS) by people generally and by students specifically. Students may make purchase choices by impulse or routinely being influenced by friends; others may do so using some limited problem-solving procedures and so are easily swayed when confronted by new choices; and finally, there are those who make purchase decisions only after careful and comprehensive analysis of factors such as dependability, reliability, and economy of use.

The primary factors that affect consumer choice of a product or service are the economy of purchase or use, dependability, efficiency in operation or use and improvement of earning (Shapiro, Perreault, & McCarthy, 1996). Hence, general consumer choice of multiple mobile service is influenced by factors as economy of purchase or use, convenience, efficiency in operation or use, and dependability of service or use, reference group influence, lifestyle and social class, and attitudes, personality and opinion leadership (Shapiro et al., 1996; Solomon, Stuart, Carson, & Smith, 2003; Turkwell, 2004). Thus, students' choice of multiple mobile phone services is affected by economic, social, technological and psychological factors which shape their decision to use particular mobile phone operators.

C. Factors affecting consumers' choice of MSP

The lower charge rates in inter-network calls, on-net calls, will be taken to mean that majority of a consumer's friends and associates will be on the larger network, therefore, making it cheaper to be with that network. Also, some researchers have reported that the size of a network can affect consumers' choice since it may serve as a signal of quality (Karaçuka, Çatik, & Haucap, 2012). Karaçuka et al. (2012) noted that consumers are expected to choose the larger network to reap the benefits that come with it such as costs, coverage, good customer care and after sales services and a host of other services, for instance, SMS, voicemail, multimedia, internet services, and other value-added services. They are also of the view that coverage of mobile networks is considered a powerful factor since calls can be completed if the area is covered by a network.

Rahman, Haque, and Ahmad (2010), exploring influencing factors for the selection of mobile phone service providers using a structural equation modelling (SEM) approach on Malaysian consumers concluded that product quality, availability, and promotion are significantly important factors that influence the consumers in Malaysia's mobile phone market. According to them, price or call rate,

brand image, customers' satisfaction, service quality, advertising, and promotion can be considered reliable indicators of customers' perception. Adjin-Tettey, Bolfrey, Bugase, Adotey, and Dodoo (2013), in their work that studied whether advertising influences the usage of telecommunication networks in two universities in Ghana concluded that service quality is the main influencing determinant. In the same manner,

Hasan, Yeasmin, and Dey (2013), in their study on the factors influencing to Bangladeshi consumers' mobile phone operators choice and change behaviour, found that both stayers and switchers, placed premium importance on strong and wide network coverage, call charge, and faster internet features while choosing mobile phone operators' services. However, Olatokun and Nwonne (2012), concluded that Nigerian mobile phone users rated call rates as the most significant of the factors considered in users' perception when selecting a service provider while brand image is the least preferred.

Dadzie and Boachie-Mensah (2011), studying mobile phone users of Cape Coast in the Central region of Ghana identify brand preference for mobile phone operator services found that the dominant group of mobile phone users were under 40 years of age, commercial sources (especially television) were the most preferred source of information for respondents in the choice of mobile operator brand and services. Social networks such as friends, families, and neighbours were observed to exert the least influence on respondents in choosing their operator brand. The choice of a mobile operator brand was more dependent on its key attribute of network coverage than any other attributes. Young males, mainly students in the tertiary institutions, single and of Christian affiliations, dominated the demography.

III. RESEARCH METHOD

This section concentrates on the research methodology adopted for the study. Included in the items discussed are the research design, research area, population, sampling procedure, sampling size, data collection, data processing, data analysis and field challenges.

A. Research Design

Quantitative survey research design was employed in the study. According to Malhotra and Birks (2007), a survey involves the use of structured questionnaire to given to a sample of a population. The survey research is chosen due to its versatility - in terms of methods; efficiency - many variables can be measured at a relatively lower cost, and generalization - in terms of probability sampling from a large population. This design allows for the collection of large amounts of raw data using question-and-answer formats and accommodates large sample sizes at relatively low cost and time.

B. Study Population and Sample

The target of this study was the users of mobile phone within the University of Professional Studies, Accra. The primary data for the study was obtained from a field survey,

which involved the use of self-administered questionnaires given to undergraduate students of the University of Professional Studies, Accra. The university has a student population of 9,264 consisting of undergraduate and graduate students. The simple random sampling method was used. This minimises bias and simplifies analysis of results. It is also easier to estimate the accuracy of results using the variance between individual results within the sample as a good indicator of variance in the overall population. In this study, a sample size of 150 users of mobile phones was selected for the study. The researcher randomly entered into lecture halls and after getting permission from the lecturers and after explaining the purpose of the research to students, administered the questionnaire to students that were ready and willing to be part of the study.

This was necessitated by the study objectives which sought to identify the features of mobile phone services that influence the first time choices made by subscribers among the various service providers in the telecommunication industry and to switch their loyalty where necessary.

C. Research Area

The sample population for this study was composed of tertiary students of the University of Professional Studies, Accra. The university is located within the La-Nkwantanang-Madina municipality with its Administrative capital Madina which was carved from Ga East in 2012. Within this Municipality are; the University of Professional Studies, Accra; Winsconsin University College; Valley View University; and other colleges and tertiary institutions. The University of Ghana, Legon is also near the Municipality but in the Ga Municipality.

The University of Professional Studies, Accra was used as a case study for this research because of its strategic location and secondly as a public university that admits students from all walks of life within the country and even beyond. The third unique reason is that the university runs three distinct sessions programme namely; regular, evening and weekend. The university has a student population of 9,264 consisting of undergraduate and graduate students.

D. Research Instrument and Data Collection

The study used structured questionnaires consisting of open-ended, close-ended and in 5-point Likert-type questions. The questionnaire covered the five main areas; Demographic characteristics; sources of information about mobile operators' brands and services; attributes/characteristics of mobile phone operator; features influencing subscribers' choice of mobile phone operator; and features influencing subscribers' switching decision of mobile phone operators. A pre-test conducted on 20 mobile phone users, enabling the researcher to correct and clarify questions on the questionnaire.

Both primary and secondary data were employed. Secondary research was done primarily to study other works in the field to form the basis of this research. The secondary data was collected from relevant research publications, newspapers, books, and websites. Primary data was gathered through the use of questionnaire as described above and was

needed because the variables used in this study were different from those of the previous studies.

E. Data Analysis

The data was processed electronically using the Statistical Product for Service Solutions (SPSS) software version 20. The data were edited, coded and entered into the computer for analysis. The data was presented using charts and tables for simple and easy to understand.

Appropriate statistical analyses such as frequencies, descriptive were used to satisfy the major objectives.

A frequency distribution was first of all carried out on all variables after which the variables used to measure the influencing factors on the 5-point Likert scale were re-coded into two categories 1 = 'Agreed' and 2 = 'Disagreed'.

IV. RESULTS

This section presents the data collected through the structured questionnaire. Data is presented in a manner to allow the achievement of the objectives of the study. The data is then presented in tables and charts as is appropriate to answer the research questions that were posed at the beginning of the research.

A. Demographic Characteristics of the Respondents

The demographic characteristics of the respondents revealed that males constituted (45.9%), while females were (53.3%). The majority of the respondents were within the age group of 21-30 years (78.7%). Understandably, most were just students without any employment with (12.3%) the next largest category, registering for service occupation. Majority of the respondents (90.2%) were single, while (8.9%) were married.

B. Sources of Information in Selecting Mobile Phone Brand, Mobile Operator, and Services of a Mobile Operator

The sources of information given were electronic – television, radio and internet; print media – newspaper, magazines and billboards; and word of mouth – friends, family, co-workers, employers, and neighbours.

Respondents were to indicate their preferred source of information when choosing 1. Brand of mobile operator, 2. Mobile operator, and 3. Services of mobile operator. It was found that in all cases the major source of information to select a brand of mobile operator, a mobile operator, and services of mobile operators in Ghana is through the electronic media with 45.6%, followed by word of mouth with 40.5% and the least was the print media with 14.0%. This means that respondents mainly use electronic media and word of mouth as their major source of information when selecting a mobile brand, a mobile operator, and services of mobile operators in Ghana. (Tables 2, 3 and 4 in the appendix)

C. Attributes/characteristic of mobile operators

The study discovered that MTN has the largest number of respondents (80) representing 35.9%; this is followed by VODAFONE with 50 (22.4%); TIGO, AIRTEL, and GLO follow in that order with 17.5%, 16.1% and 7.2% respectively. The mobile phone operator with the least number of

respondents was EXPRESSO with 0.9%. See table 5 in the appendix.

Table 6 in appendix shows respondents who have switched before. The study found that 78 respondents representing 63.9% have switched mobile phone operators in the past. However, 36.1% said they have never switched service providers.

AIRTEL received the largest number of respondents from the switch, 20 (16.4%); followed by VODAFONE, 19 (15.6%); then MTN, TIGO, and GLO with 11.5%, 9.0% and 5.7% respectively. No respondent switched to EXPRESSO, see table 7 in appendix.

Among the major factors that made respondents switch were improved services of the new providers, fast internet provided by the new providers, and low rates charged by the new providers. Indeed, low call rates had the highest single endorsement of 17.7%. Promotions, coverage, bonuses and uninterrupted services were among the least of the reason for respondents to switch mobile phone providers. Bonuses recorded the very least reason (3.8%) for respondents to switch. Other reasons apart from those listed here accounted for 25.3% for switching among the respondents. (Table 8 in the appendix)

This means that low call rates, fast internet services, and improved services are factors that will make most university students in Ghana switch from one mobile phone service provider to another. On the other hand, promotions, coverage and particularly bonuses are not strong factors to make university students switch mobile service providers.

A large majority of respondents (62.3%) who have switched mobile service providers have reported that they are satisfied with the services of their new providers (table 9 in the appendix). On the other hand, 15.6% said they are not happy with the services provided by their new service providers, while 18.9% of them were not sure if they were satisfied or not. This implies that the majority of those who switched service providers are content with the services they receive from their new service providers.

If respondents are to switch, AIRTEL will receive the highest number of 31 respondents representing 25.4%; this will be followed by VODAFONE 18.0%; TIGO 14.8%; GLO 13.1%; MTN 9.8%; and EXPRESSO receiving the least of 4.1%. This is significant for mobile service providers since it gives an indication of a possible switch of users. (table 10 in the appendix).

The reason given for possible switching with the highest endorsement if respondents were to switch services is fast internet (25.3%); this is followed by low call rates (16.1%) and bonuses (12.6%). The factor with the least endorsement is service coverage (1.1%). (Table 11)

D. Factors influencing the selection of Mobile Phone Operator

A list of services related with cell phone operators were presented to respondents and were asked to show how important these features were in the choice of a mobile phone provider. Respondents rated a feature 5 if it was "very important", 1 if it was "unimportant" to them.

Using descriptive means and standard deviation (SD), the study found that network coverage, faster internet services, high standards customer services, call charge/rates to other operators and call/SMS/MMS/charge intra network were rated high with the following means and (SD) 4.88 (0.43), 4.76 (0.53), 4.72 (0.65), 4.63 (0.66), and 4.45 (0.85) respectively. On the other hand, they rated features such as horoscope, fun, greetings, ringtones, etc.; news, sports, and other updated services; bill payment facilities which had means and SD as follows 2.98 (1.23), 3.29 (1.21), and 3.58 (1.10) respectively as unimportant in the selection of mobile service providers as shown in table 12 (appendix)

E. Factors influencing switching behaviour

Using mean values and standard deviation (SD) to measure features that are important in influencing switching behaviour. study found that network coverage, faster internet, services/charges, high standards customer services, call charge/rates to other operators and call/SMS/MMS/charge intra network were rated high with the following means and (SD) 4.87 (0.47), 4.78 (0.61), 4.72 (0.65), 4.71 (0.72), and 4.60 (0.80) respectively. On the other hand, they rated features such as horoscope, fun, greetings, ringtones, etc.; news, sports, and other updated services; bill payment facilities which had means and (SD) as follows 2.98 (1.23), 3.29 (1.21), and 3.58 (1.10) respectively as unimportant in the selection of mobile service providers as shown in table no. 12 (see appendix).

V. SUMMARY OF FINDINGS AND MANAGERIAL IMPLICATIONS

- The telecommunication services in Ghana over the years have witnessed the phenomenal change. From a monopoly, the industry has become one of the vibrant and most competitive with six operators in Ghana, Scancom Ghana Ltd (MTN); Millicom Ghana Ltd (Tigo); Airtel Ghana Ltd; Expresso Ghana Ltd; Vodafone Ghana Ltd; and Glo Ghana Ltd. MTN is the most favoured mobile phone service provider with about 35.9% share, while Expresso has the least share of 0.9.
- Because the study was done in tertiary institutions the average age group was 21-30 years with females being the majority and mostly single.
- It was found that in all cases the major source of information in selecting a brand of mobile operator, a mobile operator, and services of mobile operators in universities in Ghana is through the electronic media with 45.6%, followed by word of mouth with 40.5% and the least was the print media with 14.0%.
- It was also found that a large number of respondents (63.8%) have ever switched their service providers and Airtel Ghana Ltd was the recipient of the majority of these switchers (16.4%).
- Respondents reported switching because they were attracted by fast internet services and low call rates by their new service providers. They also reported being satisfied with the services provided by their new providers.

- If respondents are to switch again, AIRTEL will receive the highest number of 31 respondents representing 25.4%.
- Finally, the major factors that influenced both the decisions of respondents to choose a particular mobile phone service provider and also prompts them to switch providers include wide and clear network coverage; faster internet services; low inter-and intra-network service charges; and high standard customer services.

VI. CONCLUSIONS AND RECOMMENDATIONS

The main objective of this study was to investigate the features of mobile phone operators that influence university student subscribers' first time choice and switching behaviour in the telecommunications industry in Ghana.

Since respondents were university students, the dominant age group of mobile phone users were under 30 years of age and mostly single females. Commercial sources such as television, radio and the internet were the most preferred source of information for respondents when choosing their mobile operator brand and services for the first time and when switching service providers. The most preferred mobile phone operator was found to be MTN, followed by Vodafone, while the least preferred was Expresso.

The study also showed that mobile users are very adventurous, switching from one service provider to the other mainly influenced by superior services, fast internet services, and low service rates/charges and are satisfied when they switch. Airtel is the main recipient of these switchers.

The findings also showed that first-time users, as well as potential switchers of mobile phone service providers, are influenced by a wide and clear network coverage; faster internet services; low inter-and intra-network service charges; and high standard customer services.

Based on these conclusions, the following are recommended to assist practitioners and industry players in their service offering for the consumers:

It is recommended that the practitioners fashion out services that attract the youth and use the commercial media as their main channel to reach this large group of users.

Also, service providers should emphasize the features examined to attract new customers and retain old customers as well as to increase market share. Service providers should target particular groups such as those below their 30s to strengthen their brand equity besides providing low call charge by means of greater value and improving mobility and connectivity service such as strong network coverage, faster internet facility features.

The time period for this study was however not long enough to provide a comprehensive understanding of issues. The small sample size of 122 and the limited geographical area covered by the study is also a course for concern, hence inferences cannot be drawn from the results.

Future research should be done with a concentration on expenditure on mobile services and its relationship with choice of service providers.

REFERENCES

- [1] Aaker, D. A. (1992). The Value of brand equity. *Journal of Business Strategy*, 13(July/August), 27-32.
- [2] Adjin-Tettey, T. D., Bolfrey, A., Bugase, C. A., Adotey, T., & Dodoo, S. J. (2013). The Influence Factor: A Study of Advertising and Use of Mobile Telecommunication Networks of Students from two Universities in Ghana. *International Journal of ICT and Management*, 1(3), 9.
- [3] Agyekum, K. A. P., Tchao, E. T., & Affum, E. (2013). Customer Experience with Mobile Number Portability Implementation in Ghana. *International Journal of Emerging Technology and Advanced Engineering*, 3(10), 663-667.
- [4] Almossawi, M. M. (2012). Customer Satisfaction in the Mobile Telecom Industry in Bahrain: Antecedents and Consequences. *International Journal of Marketing Studies*, 4(6), 139-156.
- [5] Anderson, E., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, 12(2), 125-143.
- [6] Armstrong, G. M., & Kotler, P. (2013). *Marketing: An Introduction*: Prentice Hall.
- [7] Banker, R., Potter, G., & Srinivasan, D. (2000). An empirical investigation of an incentive plan that includes nonfinancial performance measures. *The Accounting Review*, 75(1), 65-92.
- [8] Besterfield, D. H., , Id. (1994). *Quality Control*. Englewood Cliffs, NJ: Prentice-Hall.
- [9] Bhasin, H. (2018). Top 10 Smartphone brands in the world in 2017. *Marketing articles*, from <https://www.marketing91.com/top-smartphone-brands/>
- [10] Bokpe, S. J. (2014, January 16). Telcos increase Tarrifs, *Daily Graphic*. Retrieved from <http://www.graphic.com.gh/business/business-news/15812-telcos-increase-tarrifs.html#>
- [11] Bokpe, S. J. (2017). Subscribers angry with telcos for poor services Retrieved August 22, 2018, from <https://www.graphic.com.gh/news/general-news/subscribers-angry-with-telcos-for-poor-services.html>
- [12] Buehler, S., & Haucap, J. (2004). Mobile number portability. *Journal of Industry, Competition and Trade*, 4, 223-238.
- [13] Connelly, C. (2014). World's first 'smartphone' celebrates 20 years, from <https://www.bbc.com/news/technology-28802053>
- [14] Dadzie, A., & Boachie-Mensah, F. (2011). Brand Preference for Mobile Phone Operator Services in the Cape Coast Metropolis. *International Journal of Business and Management*, 6(11), 190-205.
- [15] Daily Graphic. (2011). 5 Telcos Punished - For providing poor services, *Daily Graphic*.
- [16] Daily Graphic. (2013). Mobile phone users angry with telcos for poor services Retrieved August 22, 2018, from <https://www.ghanaweb.com/GhanaHomePage/business/Mobile-phone-users-angry-with-telcos-for-poor-services-277395>
- [17] Durukan, T., Bozaci, I., & Dogan, T. T. (2011). Mobile number portability in Turkey: An empirical analysis of consumer switching behavior. *European Journal of Social Sciences*, 20(4), 572-585.
- [18] Frempong, G., & Henten, A. (2004). *Telecom Developments and Investments in Ghana*. (WDR 0305).
- [19] Hakoama, M., & Hakoyama, S. (2011). The impact of cell phone use on social networking and development among college students. *The AABSS Journal*, 15, 1-20.
- [20] Hasan, K., Md, Yeasmin, A., & Dey, P. (2013). Factors Influencing to Bangladeshi Consumers' Mobile Phone Operators Choice and Change Behavior. *Journal of Economics and Sustainable Development*, 4(2), 159-169.
- [21] Hennig-Thurau, T., & Klee, P. (1997). The Impact of Customer Satisfaction and Relationship Quality on Customer Retention: A Critical Reassessment and Model Development. *Psychology & Marketing*, 14(8), 737-764.
- [22] Hirschman, A. O. (1970). *Exit, voice, and loyalty: Responses to decline in firms, organizations, and states*. Cambridge, MA.: Harvard University Process.
- [23] ITU, International Telecommunication Union. (2014). Committed to connecting the world Retrieved May 16, 2015, from <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>
- [24] Karaçuka, M., Çatik, N. A., & Haucap, J. (2012). *Consumer Choice and Local Network Effects in Mobile Telecommunications in Turkey*. Paper

presented at the Dusseldorf Institute for Competition Economics, Dusseldorf, Germany.

[25] Keelson, S. A. (2012). Factors Affecting Consumer Choice Of Multiple Mobile Services. *Global Journal of Business Research*, 6(4), 57-67.

[26] Kibeh, A. W. (2013). Relationship marketing and customer loyalty in mobile telecommunication industry in Nairobi, Kenya. *MBA thesis*.

[27] Kotler, P., & Keller, K. (2009). *Marketing Management* (13 ed.). London: Prentice Hall.

[28] Kwakwa, P. A. (2012). Mobile Phone Usage by Micro and Small Scale Enterprises in Semi-Rural Ghana. *International Review of Management and Marketing*, 2(3), 156-164.

[29] Li, Y. M., & Yeh, Y. S. (2009). *Service quality's impact on mobile satisfaction and intention touse 3G service*.

[30] Lin, H. H., & Wang, Y. S. (2006). An examination of the determinants of customer loyalty in mobile commerce contexts. *Information and Management*, 43(3), 271-282.

[31] Ling, C., Hwang, W., & Salvendy, G. (2005). A survey of what customers want in a cell phone design. *Behaviour and Information Technology*, 26(2), 149-163.

[32] Lokko, V. K. (2016). Alert: Ghana's telcos in trouble; some face imminent collapse Retrieved August 22, 2018, from <http://citifmonline.com/2016/03/17/alert-ghanas-telcos-trouble-face-imminent-collapse/>

[33] Lyons, H. G. (2006). *Price Competition with Reduced Consumer Switching Costs: The Case of "Wireless Number Portability" in the Cellular Industry*. Working Paper. The University of Toronto. Toronto.

[34] Magatef, S. G., & Tomalieh, E. F. (2015). The impact of customer loyalty programs on customer retention. *International Journal of Business and Social Science*, 6(8), 78-93.

[35] Malhotra, N. K., & Birks, D. F. (2007). *Marketing Research: An Applied Approach*: Pearson Education Limited.

[36] Mokhlis, S., & Yaakop, A. Y. (2012). Consumer Choice Criteria in Mobile Phone Selection: An Investigation of Malaysian University Students. *International Review of Social Sciences and Humanities*, 2(2), 203-212.

[37] NCA. (2017). Telecom voice subscription Retrieved August 22, 2018, from <https://www.nca.org.gh/industry-data-2/market-share-statistics-2/voice-2/>

[38] NCA, National Communication Authority. (2014). *Mobile Number Portability in Ghana: Third Year Report*. Accra, Ghana: National Communication Authority.

[39] Olatokun, W., & Nwonne, S. (2012). Determinants of Users' Choice of Mobile Service Providers in the Nigerian Telecommunications Market. *African Journal of Computing & ICT*, 5(4), 19-32.

[40] Oliver, R. (1997). *Satisfaction: A behavioral perception on the consumer*. New York.: McGraw Hill.

[41] Park, R. (2009). A test of services marketing theory: Consumer information acquisition activities. *Journal of Marketing*, 55(10-25).

[42] Rahman, S., Haque, A., & Ahmad, M. I. S. (2010). Exploring influencing factors for the selection of mobile phone service providers: A structural equational modeling (SEM) approach on Malaysian consumers. *African Journal of Business Management*, 4(13), 2885-2898.

[43] Rahman, Z. (2006). Superior Service Quality in Indian Cellular Telecommunication Industry: A Source of Sustainable Competitive Advantage in an Emerging Economy. *Services Marketing Quarterly*, 27(4), 115-139. doi: 10.1300/J396v27n0407

[44] Sager, I. (2012). Before iPhone and Android Came Simon, the First Smartphones Retrieved August 20, 2018, from <https://www.bloomberg.com/news/articles/2012-06-29/before-iphone-and-android-came-simon-the-first-smartphone>

[45] Sawers, P. (2017). 5 billion people now have a mobile phone connection, according to GSMA data Retrieved August 20, 2018, from <https://venturebeat.com/2017/06/13/5-billion-people-now-have-a-mobile-phone-connection-according-to-gsma-data/>

[46] Shapiro, J. J., Perreault, W. D., Jr, & McCarthy, E. J. (1996). *Consumer Behaviour*. New York: Richard D. Irwin.

[47] Shin, O. (2006). Switching barriers in consumer markets: An investigation of the financial services industry. *Journal of Consumer Marketing*, 18(4), 323-347.

[48] Solomon, M. R., Stuart, E. W., Carson, A., & Smith, J. B. (2003). *Marketing Real People, Real Decisions*. Toronto: Pearson Education Inc.

[49] Spinfeld.com. (2016). History of first touchscreen smartphone Retrieved aUGUST 20, 2018, from <http://www.spinfeld.com/first-touchscreen-phone/>

[50] Suki, N. M. (2012). Examining Factors Influencing Customer Satisfaction and Trust Towards Vendors on the Mobile Internet. *Journal of Internet Banking and Commerce*, 17(1).

[51] Turkwell, K. J. (2004). *Canadian Marketing in Action*. Toronto: Pearson Education.

[52] World Factbook. (2014). Communications: Ghana

APPENDIX

Table 2: Sources of information used in selecting mobile operator brand

Sources of information used in selecting mobile operator brand	Responses	
	N	Percent
Information Source for Brand in Print	26	13.1%
Information Source for Brand in Electronic	87	43.7%
Information Source for Brand by Mouth	86	43.2%
Total	199	100.0%

Table 3: Most preferred means of information source in selecting a mobile operator

Most preferred means of information source in selecting a mobile operator	Responses	
	N	Percent
Preferred Information Source for Operator in Print	28	14.3%
Preferred Information Source for Operator in Electronic	92	46.9%
Preferred Information Source for Operator By Mouth	76	38.8%
Total	196	100.0%

Table 4: Information source most relied on in adopting services operator

Information source most relied on in adopting services operator	Responses	
	N	Percent
Information Source for Adoption of Operator in Print	28	14.5%
Information Source for Adoption of Operator in Electronic	89	46.1%
Information Source for Adoption of Operator in Mouth	76	39.4%
Total	193	100.0%

Table 5: Mobile phone operator's service in current use

Mobile phone operator's service in current use	Responses	
	N	Percent
Respondent Current Brand MTN	80	35.9%
Respondent Current Brand VODAFONE	50	22.4%
Respondent Current Brand TIGO	39	17.5%
Respondent Current Brand AIRTEL	36	16.1%
Respondent Current Brand GLO	16	7.2%
Respondent Current Brand EXPRESSO	2	0.9%
Total	223	100.0%

Table 5: Respondent has switched before

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	78	63.9	63.9	63.9
No	44	36.1	36.1	100.0
Total	122	100.0	100.0	

Table 6: Brand Switched to

	Frequency	Percent	Valid Percent	Cumulative Percent
GLO	7	5.7	9.9	9.9
AIRTEL	20	16.4	28.2	38.0
TIGO	11	9.0	15.5	53.5
VODAFONE	19	15.6	26.8	80.3
MTN	14	11.5	19.7	100.0
Total	71	58.2	100.0	
Missing System	51	41.8		
Total	122	100.0		

Table 7: Why Respondents Switched

Why Respondents Switched	Responses	
	N	Percent
Improved Services	13	16.5%
Uninterrupted Services	5	6.3%
Promotion	4	5.1%
Fast Internet	13	16.5%
Bonuses	3	3.8%
Low Charges	14	17.7%
Wide Coverage	7	8.9%
Others	20	25.3%
Total	79	100.0%

Table 8: Is respondent satisfied after switch?

Are you Satisfied?	Frequency	Percent	Valid Percent
Not sure	23	18.9	19.5
Yes	76	62.3	64.4
No	19	15.6	16.1
Total	118	96.7	100.0
Missing System	4	3.3	
Total	122	100.0	

Table 9: Mobile Service Provider if Respondent is to Switch again

Mobile Service Provider if Respondent is to Switch again	Frequency	Percent	Valid Percent
EXPRESSO	5	4.1	4.8
GLO	16	13.1	15.4
AIRTEL	31	25.4	29.8
TIGO	18	14.8	17.3
VODAFONE	22	18.0	21.2
MTN	12	9.8	11.5
Total	104	85.2	100.0
System	18	14.8	
Total	122	100.0	

Table 10: Reason if respondent is to Switch

Reason If respondent is to Switch	Responses	
	N	Percent
Improved Services	9	10.3%
Uninterrupted Services	7	8.0%
Promotion	7	8.0%
Fast Internet	22	25.3%
Bonuses	11	12.6%
Low Charges	14	16.1%
Wide Coverage	1	1.1%
Others	16	18.4%
Total	87	100.0%

Table 11: Factors influencing selection of Mobile Phone Operator

Variables	N	Mean	Std. Deviation
Network Coverage	120	4.8833	.43354
Faster Internet Services	118	4.7627	.53394
High Standards customer Services	119	4.7227	.64996
Call charge/rates to other operators	120	4.6333	.66019
Call/SMS/MMS/charge intra network	119	4.4538	.85120
Easy and convenient recharge facility	119	4.4118	.80687
Cash back or bonus on use and recharge	118	4.3644	.93977
Security, call back, call tracking services	115	4.3130	.92115
Access to credit balance/recharge facility	116	4.1897	.92232
Brand Communication -Promotions, etc	118	4.0000	.93370
Money of balance transfer facility	117	3.9487	1.16594
Group conference facility	115	3.8435	1.05624
Brand Image	119	3.8403	1.04948
Help line services (doctor, ticket, others)	118	3.7712	1.10485
High promotional program	119	3.7563	1.18584
Influence of employers/Friends/relatives	118	3.6949	1.18038
Roaming and ISD facility and charges	118	3.6949	1.12096
CSR practice of the company	118	3.5847	1.08073
Bill payment facilities (electricity, gas, etc)	119	3.5798	1.10081
News, sports, and other update services	110	3.2909	1.21418
Horoscope, fun, greetings, ringtones, etc	109	2.9817	1.23214
Valid N (listwise)	95		

Table 12: Factors influencing switching behaviour

Variables	N	Mean	Std. Deviation
Network Coverage	112	4.8661	.47449
Faster Internet Services/charges	111	4.7838	.60910
Call/SMS/MMS/charge intra network	112	4.7411	.66773
Call charge/rates to other operators	113	4.7080	.71566
High Standards customer Services	112	4.5982	.79932
Cash back or bonus on use and recharge	111	4.4505	.82835
Easy and convenient recharge facility	112	4.0446	1.11006
Money of balance transfer facility	112	3.9911	1.12703
Brand Communication -Promotions, etc	112	3.9643	.97656
Security, call back, call tracking facility	111	3.9369	1.12233
Brand Image	112	3.9018	1.16989
Help line services (doctor, ticket, others)	113	3.7788	1.12388
Group conference facility	112	3.7411	1.07171
Roaming and ISD facility and charges	112	3.6786	1.06724
Influence of employers/Friends/relatives	113	3.6460	1.13327
Bill payment facilities (electricity, gas, etc)	112	3.4821	1.09035
News, sports, and other update services	110	3.3818	1.18075
Various entertainment service facilities	112	3.2589	1.16824
Valid N (listwise)	97		