

SOCIETAL IMPACT OF GLOBAL SYSTEM FOR MOBILE COMMUNICATION (GSM) IN NIGERIA

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Abstract – This paper is basically aimed at appraising and evaluating the impact of Global System for Mobile (GSM) Communication phone technology on the Nigerian society. It is to determine the positive contributions of GSM phone in the society (Nigeria). It will also look critically into the dynamic of the society versa vice GSM (the real core of communication through the GSM). The GSM technology as a propeller of paradigm shift in human civilization (i.e. GSM has taken human civilization to the next level/era). To reveal GSM as bringing the power of communication (i.e. GSM as a child's play, it is no longer for the riches/elite but generally for the masses). Analyzing the prospect and problems of establishing GSM operation in a developing economy like Nigeria. Some areas in Abuja metropolis where offices and residential accommodations were used as a case study for this work. This study was approached from the GSM subscribers' point of view. Questionnaires were distributed to the users and subscribers. Data was collected and analysed using simple percentage method and Likert method to arrive at a conclusion and a viable recommendation. The study revealed that the natural treasury has benefited immensely from license fee payment, import duties and taxes from the network providers in Nigeria. Also, direct and ancillary jobs have been created, and lastly it has given wealth and empowered many homes.

Keywords – GSM, NCC, Mobile Telephony, Subscribers, Telecommunication, Communication, Network, Society, SIM

I. Introduction

Man has always has a quest to attain the peak of whatever endeavours he strives to achieve. He ponders about the social changes and physical changes; he tries to relate with this factor in terms of communications. He longs to understand his immediate natural and social environment. By this, therefore, communication becomes a very pious impetus of understanding this factors (i.e. communication becomes man's most desired force).

He has modelled out means to aid his communication in various capacities. This communication device has been improved upon from generation to generation. From the verbal interpersonal communication, esoteric communication (i.e. soul travel communication), the invention of the telephone, e.t.c. to the present GSM (GLOBAL SYSTEM FOR MOBILE) communication, man has continued to crown his quest for perfection in communication to aid his social interaction.

Something happened some years ago in our society (Nigeria) that changed the way we relate to one another. A beautiful monstrous telecom machine with such an amazing power to change people and things entered town. It was the GSM revolution. The introduction of the GSM to the Nigerian society by the civilian regime seven years ago has been a blessing after all.

This has opened the flood gate of opportunities for both operators, and workers to invest in telecommunications industry in Nigeria. After some years down the road, it has not been too bad both on the part on Nigerian Government, the operators and the entire Nigerian citizens.

According to Wikipedia, it defines telecommunication as the transmission of signs, signals, messages, words, writing, image, and sounds or information of any nature, radio, optical or other electromagnetic systems.

Moreover, major trends occupy in the field of telecommunication have a significant impact on management decisions on Nigerian society. We should be aware of major trends in Telecommunication industry in Nigeria today's technologies and the applications that significantly increase the decision, alternative confronting the active player business managers and professionals in the industry in Nigeria.

GSM as an innovation in Nigeria made possible by information technology has changed the way Nigerians used to live and do things. GSM has revolutionized the communication industry and the manner we live our lives generally. With improving technology, the GSM revolution is taking the nation farther into development as a host of activities can be carried out on the mobile phones; from checking bank account balances, to browsing the internet, sending self-pictures/animated pictures, sending short/long messages, recording songs, transferring information, video conferencing and so on.

In the industry trend today, Global System for Mobile communication is creating or attracting more competitive carriers, vendors, alliance and Network Services accelerates by deregulation and the growth of the Internet and World Wide Web.

However, in technology trend, extensive use of internet, digital fiber optic and wireless technologies to create high speed local and global internet work for voice, data, images, audio, and video communication. After the GSM entry, the arena has changed completely because of the competitive nature of the business.

In most countries, the telecommunication industry is now changing from government monopolies to a deregulated market when fiercely competitive suppliers or operators of telecommunication service like AIRTEL, MTN, GLO-Mobile, 9MOBILE, NTEL (formerly NITEL), are struggling for customers.

Today the Nigerian Communication Commission (NCC) which was set up through a decree is not the GSM Service Provider's regulator in Nigeria. However, open system arrangement between the service providers is now providing greater connectivity. This is the ability of networked computers, GSM and other devices to easily access and communicate with each other and share information.

Today, telecommunication is now being revolutionized by the rapid change from analog to digital network technologies. Moreover, the major trend in telecommunication technology is change to fiber-optic lines and cellular, communication satellite, and other wireless technologies.

II. Literature Review

THE EVOLUTION AND PRESENT STATE OF MOBILE TELEPHONY (GSM) IN NIGERIA

The emergence of mobile telephony is obviously one of the major revolutions of communication in Nigeria. This is because no other technology has been so beneficial to all and sundry like the ubiquitous mobile phone. Its simplicity has facilitated its use by both literate and illiterate people, and it has remained one of the technologies to be so readily embraced by the poor.

Within the last few years of its introduction to Nigeria, the technology became commercially available almost immediately. Many young people were infected with the bug of GSM handsets to the extent that some spent all their savings just to acquire one. Now, mobile phones are no longer merely electronic gadgets possessed only by the rich, but now available for whoever cares to own.

Ndesanyo (2007) in his article added that, in the early days of mobile system of communication in Nigeria, only the rich could actually afford the services. This period is termed the first generation of mobile telephony. The analog cellular was used, which basically allowed for voice communication only. This generation of mobile phones appeared not to exist in Nigeria since very few people really knew about cellular phones and was only available to a few percentage of the population. The use of land phone was still pertinent in the country oriented services. Analog cellular was, therefore, regarded as a precious object to possess and those who had it were highly regarded.

During this generation of mobile telecommunication, Nigerian phone users were confined to the use of fixed-phone communication system. It was therefore common sight to see long queue at phone booths, with everyone waiting for his or her turn, this is because only few could afford to own land line due to high cost to get connected, therefore callers opted for unit cards for public phone booths which were a bit affordable. Meanwhile, the rest of the developed world and many others in Africa had entered into another generation of mobile communication.

The Global Systems for Mobile Communications (GSM) is approximately 18 years in Nigeria. The mobile system was introduced into the Nigerian market and society precisely on 6th August, 2001. That was in the third year under the civilian administration of former **President Olusegun Obasanjo's** first term in office.

The emergence of digital personal communication system marked the beginning of another generation of the mobile phone termed the second generation. This generation offered users the convenience of the use of voice and SMS communications. While many African countries quickly embraced this generation, Nigeria had been so slow to indulge in it due to mainly bad leadership. As a result the technology was not introduced to the country until some years later.

It was as if the introduction was all Nigerians had been waiting for, the technology was quickly embraced and though very expensive at the beginning it later became common article to possess. With time, the prices of cell phones and SIM Cards dropped considerably to such effect that SIM Packs were sold for almost free as more services providers were issued with license. The second generation opened the Nigerian economy to many opportunities; many benefited and are still enjoying the benefits that came with its introduction.

The first set of mobile phones sold in the Nigerian market at the inception of this generation had limited features. Most of the handsets could only be used for voice calls and SMS only, also the ringing tones were mostly monophonic. Gradually, as the mobile phone manufacturing industries improve on features of the phones being produced, so was Nigeria benefiting from this, and now her market is being flooded with many mobile handsets with improved features that include colored screen, polyphonic ring tones, internet browsing etc.

This previous generation is obviously to be the stepping stone to the next generation termed the third generation (3G). Nigeria is now one of the most sought-after countries in Africa by multinational communication industries due to its ready market and therefore the country is on the threshold to the third generation of mobile phones. This generation offers the ability to transfer simultaneously voice, data and non-voice data such as down loading information, exchanging e-mail, and instant messaging. And again, another round of economic benefits is around and will put smiles to the faces of many Nigerians.

According to the International Telecommunication Union (2007), by 1996 Nigeria's teledensity ratio was a mere 0.36. It rose slightly to 0.4 by 1999; according to the Nigeria Communication Commission (NCC). Nigeria's teledensity is a far cry from the African average of 1.67. Even the NCC admits that Nigeria has had a very limited telephone network for many years, and the waiting list is estimated at over 10 million people, who have applied to the incumbent monopoly, NITEL (established in 1985) for services.

However, with the liberalization of the telecommunication industry in August 2001, the story changed dramatically. The teledensity ratio had tripled within just one year of GSM operation. By May 2005 Nigeria, with an estimated population of 128,771,988, had more than 9 million GSM subscribers, making the country one of the fastest growing GSM markets in the world. By the end of 2007, there were, according to the NCC, over 42 million mobile telephone lines in Nigeria, up from 25,000 in 2001. Presently, with a staggering population of more than 200 million people, there are over **250 million connected GSM** lines and more than **175 million active users of the GSM in Nigeria**. (NCC, 2019)

Admittedly several people carry two or three mobile phones each. Private (and some public) investment in the telecom sector, since de-regulation to the present, was given officially as more than \$12.5bn, most of it on mobile telephony, GSM. The erstwhile monopoly, NITEL, could certainly not have raised such a large amount of money; it is, therefore, quite clear to every Nigerian now that the policy of opening the telecommunications sector to competition and private investment has been a monumental success, so far as its primary objective was concerned.

The International Telecommunications Union (ITU), the UN body in charge of telecom, has consistently attributed the success in Nigeria telecom to regulatory excellence. The ITU has severally made reference to Nigeria as a model for other nations. The lesson in this narrative is that the solution to our various challenges as a nation can be found within us. All the regulators who have kept Nigeria telecom at the cutting edge are Nigerians, not foreigners or expatriates as we prefer to address them. (The Communicator, 2018)

At the moment, there are five major GSM operators in Nigeria: MTN, AIRTEL. GLO-Mobile, 9Mobile, and NTEL. The competition is getting fiercer by the day as operators have to compete desperately for the same potential subscribers.

Several years after the start of the GSM era in Nigeria, the focus is gradually shifting from providing coverage to providing quality service. The euphoria of owning a phone set is gradually giving way to complaints of dropped calls and congestion.

The operators are fast realizing that they are in a highly competitive environment where subscribers can make or break them. Dissatisfaction by subscribers gives rise to a high rate of subscriber churn and low revenue for the operator. The performance of the network has a direct impact on the revenues. The NCC is bringing pressure to the operators to step up the quality of service offered Nigerians and had even gone a step further to award contracts to private companies to conduct comparative analyses of the quality of service offered by each of the operators. The NCC is further threatening to sanction any operator that fails to pay attention to quality (WikiEducator, 2018).

GSM Evolution Review

Global System for Mobile Communications (GSM: originally from *Groupe Spécial Mobile*) is the most popular standard for mobile phones in the world. Its promoter, the GSM Association, estimates that 82% of the global mobile market uses the standard. Presently, GSM is used by over 5 billion people across more than 212 countries and territories with Asia alone having about 55 percent of the total number of subscribers. Sub-Saharan Africa has a little below 9 percent of the total number of subscribers. (GSMA, 2017)

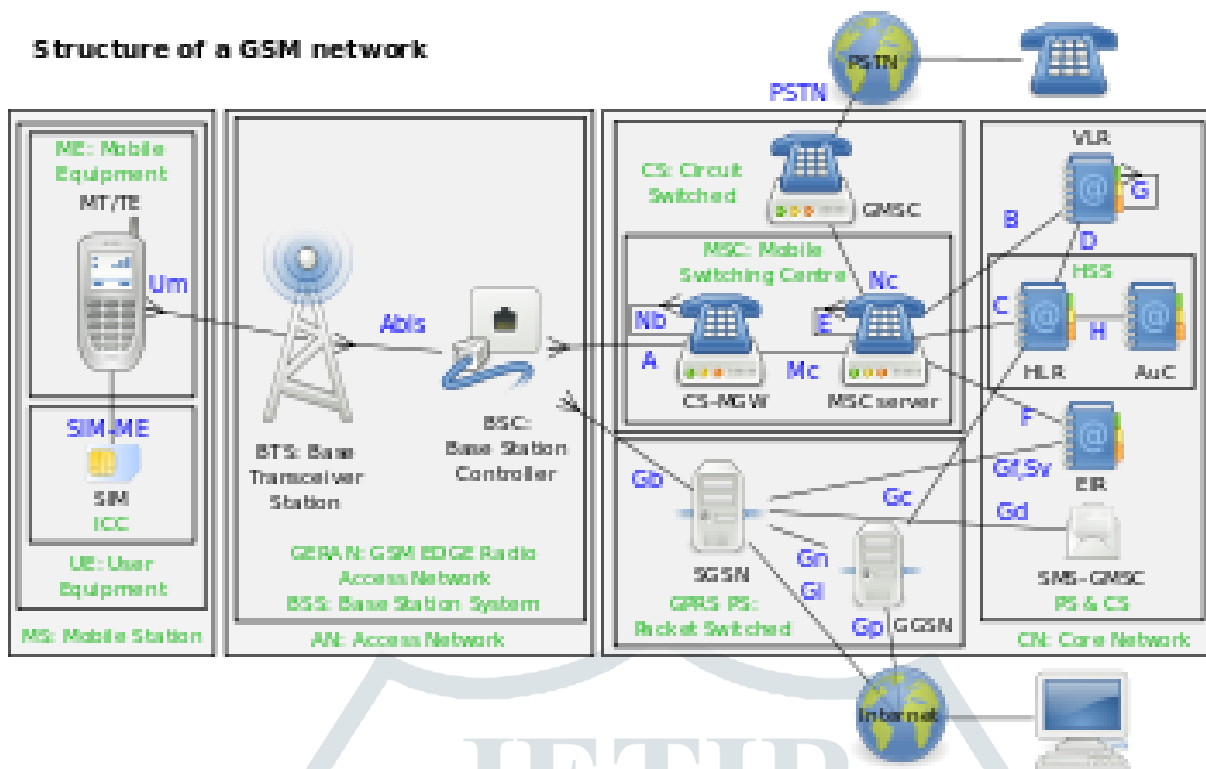
The ubiquity of the GSM standard has been an advantage to both consumers (who benefit from the ability to roam and switch carriers without switching phones) and also to network operators (who can choose equipment from any of the many vendors implementing GSM). GSM also pioneered a low-cost, to the network carrier, alternative to voice calls, the Short message service (SMS, also called "text messaging"), which is now supported on other mobile standards as well. Another advantage is that the standard includes one worldwide Emergency telephone number, 112. This makes it easier for international travelers to connect to emergency services without knowing the local emergency number (Scourias, 1995).

GSM Network Overview

The network behind the **GSM** system seen by the customer is large and complicated in order to provide all of the services which are required. It is divided into a number of sections and these are each covered in separate articles.

- The Base Station Subsystem (the base stations and their controllers).
- The Network and Switching Subsystem (the part of the network most similar to a fixed network). This is sometimes also just called the core network.
- The GPRS Core Network (the optional part which allows packet based Internet connections).
- All of the elements in the system combine to produce many GSM services such as voice calls and SMS (WikiEducator).

Structure of a GSM network



Subscriber Identity Module (SIM)

One of the key features of GSM is the Subscriber Identity Module, commonly known as a **SIM card**. The SIM is a detachable smart card containing the user's subscription information and phone book. This allows the user to retain his or her information after switching handsets. Alternatively, the user can change operators while retaining the handset simply by changing the SIM. Some operators will block this by allowing the phone to use only a single SIM, or only a SIM issued by them; this practice is known as SIM locking. (Wikipedia, 2018)

Organization Involved in GSM Operations in Nigeria

One of the organizations involved in GSM operation in Nigeria is the Nigerian Communication Commission. This was set up by the Federal Government of Nigeria to regulate the practice of GSM operation and telecommunication in Nigeria. They are to protect the interest of the subscribers set up law that will guide the practice of the telecommunication and make all the operators maintain the standard as refunded by this organization.

The second category of organization involved in GSM operation in Nigeria is the operators themselves. These are companies that requested for licenses from the NCC and paid the license fee of \$285 million dollars and were granted the license to operate as GSM operators in the Federal Republic of Nigeria. Among the organization in this category are MTN, AIRTEL, Glo-Mobile, NTEL (formally NITEL), 9Mobile.

However, the last set of organization involved in GSM operation in Nigeria is those companies that produce recharge cards. Their own duty is to produce the recharge cards being used by subscribers of different GSM operators.

THE IMPACT OF GSM REVIEWED

Olusola (2007) stated in his article that with the advent of Global System for Mobile communication in Nigeria in August 2001, Nigeria and Nigerians have felt its impact in many facets of our society and our growing economy. Little wonder the past regime of President Olusegun Obasanjo is quickly to point out at this sector as one of his major achievements. The technology has really contributed immensely to the well being of a good percentage of the populace and its impact is felt in all the sectors of the economy. Therefore, it is necessary to review some of the successes of GSM and how it has affected Nigerians.

To start with, due to the impact felt in the \$285 million paid by each GSM operator for license, the intention of the government in Nigeria is to share the proceeds with the state to improve the livelihood of the citizens. This will one way of the other benefit each Nigerians if properly utilized by each state government. Money realized by the government in licensing the operators have been used for developmental purpose, this has been proved to have multiplying effect on the entire population of Nigeria.

Job creation is probably the best opportunity "geesm" (as it is popularly known) has ever brought to the country, either unskilled or trained. Many have become their own boss simply by making calls available at a retail price and lower charges to callers, some sell recharge cards to GSM users who wish to reload their account and others sell phones and their accessories to subscribers, all these are easy to set-up with little capital. Some GSM operators even go to the trouble of making provision for installment payment available to this category of people with chairs, umbrella and even phone sets at a reasonable price, as incentives. Call it

marketing strategy, but the fact is that somebody somewhere is able to engage in something which brings return no matter how little it is and thereby add value to his or her precious life, half bread they say is better than none.

Olusola (2007) noticed that virtually everywhere now the brightly coloured kiosks (be it yellow, red, 'glowing' green or combination of these) or may be the big umbrellas and chairs similarly coloured are scattered all over the place with their occupants holding some electronic gadgets in their hands. These are call centers as they are popularly called and those shades are various offices where they attend to their customers just like your banker does when you go to cash some amount of money. This activity is seen all over the cities, towns and even villages connected to the networks in Nigeria. The fact that it does not require any formal training has seen many attracted to the fast growing business and troubled areas of the country have their idle youths engage in constructive issues.

In addition, new area of specialization has been added to the existing field of studies. Technicians are trained to fix problems related to mobile phone malfunctioning, many hopeless graduates took advantage of this and became self-reliant. Trained personnel are being recruited every now and then by these operators and one interesting aspect is the encouragement of career capability. They all have career section integrated on their websites for qualified fresh graduate who wish to develop their skill in that direction. There is no gain saying to the fact that mobile telecommunication has contributed immensely to the empowerment of human resources in Nigeria.

The technology has found its way into the society and it has been able to permeate through cultures and traditions even as complex as the country's nature and ethnics are. It has added values to people's relationship and contributed to social integration. Barrier created during social interaction has been overcome through telecommunication. Take this as an instance, you have been trying to make your intention known to your female colleague at work but found it very difficult to accomplish, the fastest and cheapest route of achieving this is through GSM, either by calling her or sending SMS. So, you save yourself a lot of trouble. Not only that, business transaction has never been made so easy and cheap. The risk of embarking on a long journey with other associated dangers has been eliminated. Businessmen and women can cut deals for themselves through the use of GSM, and while you are away from home you are still connected with your family and your favourite events and interests (Olusola, 2007).

Co-operate bodies have integrated the technology to improve their services. In the banking sector for example, one can confirm payment made into one's account via the SMS while one is several metres away from the banking hall, you can also pay utility bills sitting in your home with ease, what a blessing to business people who found the stress of waiting in the bank too much to bear. This technology has been integrated by many banks in the country and would not have been possible but for the mobile phone network.

Other areas include checking of results by students via SMS, this is an advantage because very few have access to the internet and in most time you need to go several miles before you can actually find one.

Another captivating instance is the involvement in voluntary services in order to improve the lives of the people especially those of the less privileged. Some sponsor educative and informative programmes about deadly diseases such as AIDS, others provide basic facilities for orphanages and work alongside with existing NGOs to achieve these. They encourage talents in the area of sports by sponsoring local leagues and other similar competitions (Omeruo, 2007).

However, high tariffs and high cost of owning a GSM phone which has been prevailing at the advent of GSM in Nigeria in August 2001 has been drastically reduced. More people are now purchasing different GSM lines to enhance easy communication. Also, the era of GSM phone in Nigeria has promoted healthy competition in terms of price reduction of GSM SIM pack. It means the market forces have now prevailed and each operator is using low price and good incentives to retain their old customers and bring in new ones.

Indeed, mobile telecommunication operation in Nigeria has been a blessing to this generation and just like they have value-added services, they have added values to Nigerians' living style.

POOR GSM SERVICES IN NIGERIA

In the past few years, Africa so often left behind by other economic and technological advances has seen rapid development in the use of mobile phones. The rate at which subscribers grow on the African continent is overwhelming and the development brought as a result of this is tremendous. This development seems to be more apparent in the sub-Saharan countries, which have experienced a turn-around in the way they transact business and other economic activities.

However, the benefits and development enjoyed so far from this technological innovation are being threatened by the quality of services offered by mobile phone operators. The services being offered seem to be deteriorating or at least not as good as compared to the time when they rolled out. In Nigeria, subscribers are faced with many frustrations resulting from poor services.

Olusola (2007) considered their basic service, which is voice call. To place a local call within the same network at times could be as frustrating as trying to decode a difficult program. This network problem is so bad that callers sometime resolve to using other means of communication if affordable - and for those who could not opt for this, they would have to wait and try their luck sometime later. Inter-network calls are even more frustrating.

Not only this, the automatic response of network status of these mobile phone operators are not reliable, one cannot differentiate when a number is actually out of network reach from when it is switched-off. This is because, if you placed a call from your mobile phone, you might be told the number was switched off, if you re-dialed the same number immediately, you would be surprised that the number would go through. At other times, you dial a number it goes through immediately without any ringing or connection tone. All these amount to poor services.

As if all these are not enough, the call rate is high when compare with that of other operator in neighboring countries. Although, the fixed wireless operators are charging reasonable amount and their services are well commended, they are only limited to few geographical areas.

While we will remain thankful to whoever introduced mobile telephony to the African continent and to Nigeria in particular, we would not relent in ensuring that quality services as being enjoyed in other places does not elude us. Nigeria is a very friendly market for mobile communications but to be able to make full advantage, the operators need to improve on the quality of services being offered. Perhaps the existing operators have made more revenue than they expected, then it is high time others too were given the chance to operate, and give the best services mobile telephony can offer. With millions of Nigerians yet to be connected, there is sure a huge market to tap-into

III. Methodology and Analysis

The section has made attempt to analyze data collected from various respondents in different parts of the Federal Capital Territory, Abuja-Nigeria through the administration of questionnaires. These data were collected to ascertain the Societal Impact of Global Service for Mobile (GSM) communication in Nigeria.

Data Collection Summary

Number of questionnaires distributed	-	250
Number of questionnaires returned	-	250
Number of valid questionnaires	-	200
Number of invalid questionnaires	-	0
Number of unreturned questionnaires	-	50

Method of Data Analysis

- The simple percentage method was used in the section A and B part of the questionnaire, where the percentage of each statement was calculated. A conclusion is now based on the outcome of the percentage.
- The Likert-Type rating scale technique was used to analyze the section C part of the questionnaire. In this method, the mean of each of the statement is calculated. The mean is now compared with the scale value assigned to the options to determine whether a particular statement have impact. The following rating scale values were assigned to the options.

Strongly Agree (SA)	-	5
Agree (A)	-	4
Undecided (U)	-	3
Disagree (D)	-	2
Strongly Disagree (SD)	-	1

IV. Results and Discussions

SECTION A

RESPONDENTS CHARACTERISTICS (Summary of the data collected from returned questionnaires)

Table 1: Gender Analysis

Statement	Frequency	Percentage (%)
Male	112	56
Female	88	44
TOTAL	200	100

Based on the research carried out, the total of 112 male respondents representing 56% and 88 female respondents representing 44 % filled and returned the questionnaires.

Table 2: Age Analysis

Statement	Frequency	Percentage (%)
18-27 years	94	47
28-37 years	54	27
38-47 years	38	19
48-57 years	12	6
58 years and above	2	1
TOTAL	200	100

Based on the research carried out 94 respondent representing 47% are in the age bracket 18-27 years; 54 respondents representing 27% are in the age bracket 28-37 years; 38 respondents representing 19% are in the age bracket 38-47 years; 12 respondents representing 6% are in the age bracket 48-57 years; and finally, 2 respondents representing 1 % are in the age bracket 58 years and above.

Table 3: Educational Qualification

Statement	Frequency	Percentage (%)
FSLC	10	5
SSCE/GCE	44	22
NCE/OND	48	24
BSC/BA/B.Tech/HND	84	42
MSC/ MA/M.Tech/MBA	11	5.5
Ph.D/Professor	3	1.5
TOTAL	200	100

It was observed that out of the total respondents, 10 respondents representing 5% have a primary school certificate (First School Leaving Certificate); 44 respondents representing 22% has a SSCE/GCE O'level certificate; 48 respondents representing 24% has either an OND (Ordinary National Diploma) or Nigeria Certificate in Education; 84 respondent representing 42% has either Bachelor of Science/Art/Technology degree or Higher National Diploma certificate; 11 respondents representing 5.5% has either Masters of Science/Art/Technology degree or Master of Business Administration (Executive); 3 respondents representing 1.5% has either a Doctoral Degree or attained a Professorship status.

SECTION B

GSM USAGE BY RESPONDENTS (Summary of the data collected from returned questionnaires)

Respondents were required to indicate if they have heard about GSM before; the options given below are YES and NO. It was observed that all the 200 respondents have heard about GSM representing 100 %. The analysis is given in table 4 below:

Table 4: I have heard about Global System for Mobile (GSM) Communication before.

Options	Frequency	Percentage (%)
YES	200	100
NO	0	0
TOTAL	200	100

Participating respondents were required to also indicate if they have GSM phone and if actually they use it regularly. The options given below are YES and NO. From the analysis, all 200 participating respondents agree to have a GSM. The analysis is given in table 4 below:

Table 5: I own and use a GSM.

Options	Frequency	Percentage (%)
YES	200	100
NO	0	0
TOTAL	200	100

The respondents were asked to indicate how long they have been using the GSM; the options below are 10-18 years, 5-10 years, 5 years and less. From the analysis, a total of 82 respondents representing 41% falls under 10-18 years age bracket; 102 respondents represent 51% falls under 5-10 years; and finally, 16 respondents representing 8% falls under 5 years and less. The analysis is shown in table 6 below:

Table 6: How long have you been using your GSM?

Options	Frequency	Percentage (%)
10-18 years	82	41
5-10 years	102	51
5 years and less	16	8
TOTAL	200	100

Here, participating respondents were requested to indicate their service provider out of the options given – MTN, Airtel, GLOBACOM, 9Mobile, NTEL. From the analysis, a total of 78 respondents representing 39% are using MTN lines which is apparently the largest network operator presently in the country; another 26 respondents representing 13% uses the Airtel line; 70 other respondents representing 35% go with the GLOBACOM network which is the second largest network operator in Nigeria; also 23 respondents representing 12.5% uses the 9Mobile network; and lastly, the Nigerian government owned network operator NTEL has just 1 respondents representing 0.5%. The analysis is given below in table 7:

Table 7: Network Service Providers.

Options	Frequency	Percentage (%)
MTN	78	39
AIRTEL	26	13
GLOBACOM	70	35
9MOBILE	23	12.5
NTEL	1	0.5
TOTAL	200	100

Having heard about the GSM, participating respondents were asked to indicate how often they make use of their GSM out of the options given; DAILY, WEEKLY and MONTHLY. From the analysis, a total of 198 respondents representing 99% use their phone/GSM on a daily basis; while just 2 respondents representing 1% uses their GSM weekly. Zero respondent do not leave their phones/GSM untouched for a whole month. The analysis is as shown below in table 8:

Table 8: How often do you use your GSM?

Options	Frequency	Percentage (%)
Daily	198	99
Weekly	2	1
Monthly	0	0
TOTAL	200	100

Participating respondents were also asked if they use internet services of their GSM phone. The options given below are YES and NO. From the analysis, 188 participating respondents representing 94% uses the internet services on their GSM, while just 12 respondents representing 6% have no internet access on their GSM, largely due to the kind of phone they are using. The analysis is given in table 9 below:

Table 9: I use internet service on my GSM.

Options	Frequency	Percentage (%)
YES	188	94
NO	12	6
TOTAL	200	100

Respondents were further asked what activities they normally perform on their GSM. It was observed that about 188 respondents combined representing 94% uses the internet services for various types of activities ranging from social media, business transactions, etc; while a little fraction of respondents representing 12% use the GSM for calls, text only and other activities. The various options and analysis of activities on their GSM phone are given below in table 10:

Table 10: What exactly do you use your GSM for most times?

Options	Frequency	Percentage (%)
Calls and Text only	9	4.5
Internet services, calls and Text	90	45
Business online, social media, calls and text	98	49
Others	3	1.5
TOTAL	200	100

In this section, the respondents were asked what type of GSM phone they use. The options of Android, Iphone, Windows phone and others were given. About 154 respondents representing 77% of the GSM uses Androids phone, while a combine total of 33 respondents representing a combined percentage of 16.5 uses either the Iphone or Windows phone; lastly, 13 respondents representing 6.5% neither uses any of the internet enabled phones.

Table 11: Which type of GSM phone do you use?

Options	Frequency	Percentage (%)
Android Phone	154	77
Iphone	12	6
Windows Phone	21	10.5
Others	13	6.5
TOTAL	200	100

Participating respondents were requested to indicate the average amount they spend on monthly basis on recharge cards. The options given are ₦20, 000 and above, ₦15, 000, ₦10, 000, less than ₦ 5, 000. From the analysis it shows that 11 respondents representing 5.5% spend ₦20, 000 and above every month on recharging their phones, 13 respondents representing 6.5% spend an average of ₦15, 000 every month on recharge cards, 20 respondents representing 10% spend ₦10, 000 every month on recharge cards, 52 respondents representing 26% spend ₦5, 000 every month on recharge cards, while 104 respondents representing 52% spend less than ₦5, 000 monthly on recharge cards. The analysis is given in Table 12 below:

Table 12: Average amount spent monthly on recharge cards

Options	Frequency	Percentage (%)
₦20, 000	11	5.5
₦15, 000	13	6.5
₦10, 000	20	10
₦5, 000	52	26
Less than ₦5, 000	104	52
TOTAL	200	100

Lastly, in this section, respondents were requested to indicate how they rate their GSM service providers in terms of quality service and low tariff. The options given are Excellent, Good, Satisfactory, Poor and Undecided. The table 13 below shows 14 respondents representing 7% rates their GSM service providers Excellent, 97 respondents representing 48.5% rate their GSM service provider as Good, another 68 respondents representing 34% rate their GSM service provider as Satisfactory, 11 respondents representing 5.5% rate their GSM service provider as very poor, while 10 respondents representing 5% are undecided about their rating.

Table 13: Please rate your service provider in terms of quality service and tariff,

Options	Frequency	Percentage (%)
Excellent	14	57
Good	97	48.5
Satisfactory	68	34
Poor	11	5.5
Undecided	10	5
TOTAL	200	100

SECTION C

HOW DO YOU AS A GSM SERVICES SUBSCRIBER EMPHASIS THE FOLLOWING ITEMS:

Table 14 below is a summary of the data collected from questionnaire returned and it is used for analysis in order to find out the societal impact of GSM in the Nigerian society.

Table 14: DEGREE OF EMPHASIS

S/No	STATEMENT	SA	A	UD	D	SD
1	Customers' tariff is low.	18	50	22	68	42
2	There is less network failure and poor connectivity.	45	83	22	22	28
3	There is good response from customer service.	36	86	10	42	26
4	I enjoy the use of my GSM.	62	130	7	1	0
5	NCC is representing and protecting the customer of GSM services.	72	98	9	17	4
6	There is easy interconnectivity between the GSM networks.	46	69	23	40	22
7	Regular promotion is ensured to appreciate their customers by the GSM providers.	64	94	10	22	10
8	Good competition by the GSM service providers to retain old customers and bring in new ones.	88	102	4	4	2
9	There is good social responsibility and sponsorship by the GSM companies	62	128	6	4	0
10	Social media platforms have impacted positively personally as a GSM subscriber?	70	122	4	2	2
11	Since I started using my GSM phone, I have made little or money through business or other means.	38	98	34	20	10
12	Sending messages to my relatives or loved ones in the rural area has been made easy since I started using my GSM phone.	74	116	6	4	0
13	Stricter measures should be put in place to check motorist who uses GSM phone while driving.	90	104	2	2	2
14	GSM Network services are still restricted in some rural areas where agricultural products are produced and network providers should extend their services there.	48	89	17	34	12

NOTE: The *Likert scaling method* will be used to compute the approximated mean and discuss the results for this section of the questionnaire. The scaling method is given below:

- Mean score from 0.01 to 1.00 is Strongly Disagree
- 1.01 to 2.00 is Disagree
- 2.01 to 3.00 is Undecided
- 3.01 to 4.00 is Agree
- 4.01 to 5.00 is Strongly Agree

A typical 5 category Likert scale would use the categories Strongly Agree (SD), Disagree (D), Undecided (UD), Agree (A) and Strongly Agree (SA). I hereby assign the following categories ordinal values as: SD=1, D=2, UD=3, A=4 and SA=5.

An example of the computed approximated mean for question one using *Likert scaling method* (i.e. Customers' tariff is low) is shown below:

Computed Mean for Q1 = SA/total number of respondents x 5 + A/total number of respondents x 4 + UD/total number of respondents x 3 + D/total number of respondents x 2 + SD/total number of respondents + 1

Therefore, $9/200 \times 5 + 25/200 \times 4 + 11/200 \times 3 + 34/200 \times 2 + 21/200 \times 1 = 1.34$.

This basically means the respondents believe the tariff provided by the GSM service providers is not low and it needs to be checked and regulated. The computed mean of 1.34 favors the respondents that disagree with the statement.

This same method will be used to calculate the approximated mean for the entire respondents' questions about each statement from table 15 to table 28.

Table 15:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Customers' tariff is low	9	25	11	34	21	1.34

Table 16:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
There is less network failure and poor connectivity.	22.5	41.5	11	11	14	3.50

Table 17:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
There is good response from customer service.	18	43	4	21	14	3.30

Table 18:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
I enjoy the use of my GSM.	31	65	3.5	0.5	0	4.10

Table 19:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
NCC is representing and protecting the customer of GSM services.	36	49	4.5	8.5	2	4.10

Table 20:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
There is easy interconnectivity between the GSM networks.	23	36.5	9.5	20	11	3.41

Table 21:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Regular promotion is ensured to appreciate their customers by the GSM providers.	35	47	6	5	7	4.00

Table 22:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Good competition by the GSM service providers to retain old customers and bring in new ones.	44	52	2	1	1	4.40

Table 23:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
There is good social responsibility and sponsorship by the GSM companies	31	64	3	2	0	4.24

Table 24:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Social media platforms have impacted positively as a GSM subscriber?	35	61	2	1	1	4.10

Table 25:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Since I started using my GSM phone, I have made little or money through business or other means.	19	49	17	10	5	3.70

Table 26:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Sending messages to my relatives or loved ones in the rural area has been made easy since I started using my GSM phone.	37	58	3	2	0	4.30

Table 27:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
Stricter measures should be put in place to check motorist who uses GSM phone while driving.	45	52	1	1	1	4.40

Table 28:

Statement	Percentage (%)					Mean
	SA	A	UD	D	SD	
GSM Network services are still restricted in some rural areas where agricultural products are produced and network providers should extend their services there.	24	44.5	8.5	17	6	3.70

In summary, after the questionnaires have been calculated and computed from the respondents on the general uses and impacts of the GSM phone, the approximated mean favors each of the statement in the tables above based on the rating scale given earlier.

V. Conclusion

The steady growth of GSM technology in Nigeria has changed the pace of our economy positively. This study reveals that GSM has positively impacted on the Nigerian society and economy since its advent into the Nigerian market eighteen years ago. It should be noted that without bridging the digital divide and bringing the modern telecommunication services to chronically under-served communities in developing world, our economy will still remain stagnant.

GSM service has caused huge changes throughout Nigeria since it was first introduced. Nigerians now have access to a variety of different services that were never possible with NITEL, such as mobile banking, online payments, lower cost international calls and mobile TV. The lower prices associated with GSM also make Internet access easily accessible to a majority of the population. Having consistent Internet access has allowed Nigerian citizens to work online in a variety of different jobs and provide for their families. Because of the higher quality mobile service that GSM provides, the popularity of cellular phones in Nigeria has

increased greatly. Moreover, there are down-sides of GSM operators in Nigeria according to the respondents and independent research done on this work, this includes:

- Constant vandalization of ground stations of most GSM operators.
- High start up cost including \$285 million for licenses.
- Inability of Nigerian Communication Commission (NCC) to check on the pricing structure of these GSM operators/companies.
- The problem of motorist making calls while driving and this causing fatal accident.
- GSM have also increased the volume of armed robbery, kidnapping and assassinations in the country.

VI. Recommendation

The objective of this is to determine the impact of GSM in the Nigerian society. As a result if the findings arising from this research, the following recommendations are offered:

- The Nigerian Communications Commission (NCC) must check on the pricing structure of these GSM operators.
- The network providers should go and revise their business strategies on how customers should be treated and handled with utmost respect in order not to lose them. Efforts should be made to thank Nigerians by the network providers on the subscriber's philanthropic gestures as well as their patience; they have spent and sacrificed a lot.
- Though the GSM communication has brought much benefit to Nigerians, the activities of the network providers should be checked/ monitored effectively by active regulatory bodies and not the kind of monitoring we have seen in the past years.
- Strict measures must be put in place to check motorist who uses GSM phone while driving.
- More infrastructures must be provided by the government so that the GSM operators might extend their coverage to the rural areas of the country.

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