

The Socio-Economic Impacts of Global System of Mobile Communication (GSM) on University Students: A Case Study of Ladoke Akintola University of Technology, Ogbomosho, Oyo State, Nigeria

A.O. Salami and O.A. Usman

Department of Management Science, Ladoke Akintola University of Technology,
Ogbomosho P.M.B. 4000, Oyo State, Nigeria

Abstract: The thrust of this study is to examine the impact of Global System of Mobile (GSM) on socio-economic development of university students. The major instrument used for collection of data was questionnaire alongside with personal interview and personal observation. Questionnaires were distributed to the GSM operator in Ladoke Akintola University of Technology, Ogbomosho. The analysis of demographic and socio-economic characteristics of the respondents were carried out using the responses of the administered questionnaire and analyzed using simple percentage supported by series of table showing percentage distribution of some variables. Chi-square was used to test the hypothesis formulated in the course of this study. Findings revealed that communication plays a very vital role in the socio-economic development of Nigeria and it also shows that in order to consolidate on the level of achievement of the GSM presently enjoying, much more improvement must be welcomed. These include, reduction in tariff, improvement in the level of services rendered to the people, wide coverage of the Nation (especially the rural area) and above all, better connection among the services provide so as to ease the interconnectivity problem currently facing by the subscriber.

Key words: Telecommunication, services, technology, satisfaction, socio-economic impacts, GSM

INTRODUCTION

Mobile communication is becoming one of the most important industries in the world it was estimated that in 2003, mobile telecommunication services directly generated \$ 425bn in revenues (GSM white paper). The phenomenal growth in mobile communication has driven price decrease which, in turn, has increase what end-users spend on telecommunication services that were previously being spent on other things. GSM has become the digital cellular technology of choice enjoying the fastest growth rate and representing the largest segment within mobile communication.

In Nigeria, the GSM operations alone have generate 3500 direct employment and an estimate 10,000 to 20,000 indirect employment opportunity. The operations also claimed that tariff has shown a remarkable reduction in acquisition costs, the connection cost of fixed telephone line, they insisted decreased by about 100% from an average of #100,000 in 1999 to # 51,000 in 2002, dropping by further 41% to #30,000 in 6 months by the end of June 2003. Waiting time for telephone installation was also said to have reduced from month to minute in the case of

mobile phone. By the 2nd quarter of the year 2004, the 5 leading GSM service providers in Nigeria, namely, MTN, V-MOBILE, GLOBACOM, NITEL and M-TEL (MTN Online, 2004) shared among them about 5 million subscribers. This means that about 5 millions lines were servicing an approximately 120 millions Nigeria Population (about 4% of the population).

MNT'S signal alone reaches some 54,895,000 people (representing about 46% of Nigeria's population) living in 161,000 km space (about 17% of Nigeria's land mass). This is not anywhere near the average required for describing a nation as having list the international standard in information technology but for a country that cannot boast of 120,000 land lines before the introduction of GSM, this development is considered significant.

Arising from above is the temptation to assume that this development should be able to significantly impact interpersonal relationship, group activities, business transaction and host of other social engagements around which the social fabric of the society is centered. It is the objective of this study thus, to examine the impact of Global System of Mobile communication (GSM) on socio-economic development of university students.

Objectives of the study: The general objective of this study is to examine the impact of Global System of Mobile (GSM) on socio-economic development of university students.

The specific objective is:

- To examine the benefit of GSM to university students.

Hypothesis of the study: On the basis of the statement of the problem and the study objective the following hypothesis is hereby formulated:

H0: That Global System of Communication (GSM) does not have impact on socio-economic development of university students

H1: That global system of communication has impact on socio-economic development of university students.

The study area: Ladoké Akintola University of Technology (LAUTECH) was formerly established on 3rd April 1990 then National University Commission (NUC) gave an assent to the establishment of the university in October 29th 1990, its door was opened to the first batch of students admitted through Joint Admission and matriculation Board (JAMB). On 27th August 1991, there was a creation of more state and Oyo state was carried out of the old Oyo state, thereby making the university to fall into the hand of 2 states. It then became imperative to change the name. In November 1991, the name was changed to Ladoké Akintola University of Technology (LAUTECH). From its old name Oyo State University of Technology (OSUTECH).

The first academic session took off with 4 faculties namely; Faculty of Pure and Applied Sciences, Faculty of Environmental Sciences, Faculty of Agricultural Science and Faculty of Engineering and Technology. By October 1991, College of Health Science came into existence with one faculty that was Faculty of Basic Medical Sciences comprising three departments. By 1996 Clinical Faculty of the college took off at Oshogbo with 15 departments. As at 2006, the university has about 46 academic departments and many administrative units including vice-chancellor's office, Registry, Bursary, Library, Works, Physical planning unit, Postgraduate school and Pre-degree science programme unit.

Theoretical framework and conceptual issues

Ullman's theory of spatial interaction: Ullman forwarded the concept of spatial interaction in 1956. The theory tagged Ullman's triad propagated the concept of spatial interaction which explains why movement takes place with a geographic space.

In this theory Ullman propagated 3 principles necessary before spatial interaction can be established or takes place. These principles are:

- Complementarity.
- Interfering opportunity.
- Transferability.

These concepts had been used to explain the basis of movement between places within framework of distribution and market mechanism.

Complementarity: This is attributable to a real differentiation and mutual existence of supply and demand for each other region's product. This theory emphasizes on the fact that for 2 spatially separated regions to interact, there must be demand in one area and corresponding supply in the other area. This connotes that, geographical while some areas are naturally endowed to produce certain goods in surplus, the other side or region is lacking in the production of other goods as explained above is also lacking production of other goods which incidentally may be at advantage of other region. Therefore, there must be exchange of products between these communities thereby leading to regional complementarity.

Interfering opportunity: These principles reduce potential interaction between 2 complementary regions due to the ability of alternative supply or demand center. This could be an obstacle to the possibility of interaction taking place between complementary regions, should there be another of supply in between them.

Transferability: This is the level of impedance. It is also referred to as the ease with which friction of distance is overcome and the transferability of a product is largely determined by cost of movement (time and money cost). This whenever, the time and money cost transverse a distance is too high, interaction will be drastically or in some areas even non-existent, despite perfect complementarity and absence of intervening opportunity. The center periphery pattern recognizes the effect of external orientation of the economy on the spatial structure.

In summary, Ullman's theory of spatial interaction is based on the fact that regions cannot be independent on their own that is why there is need for interaction to exist in order to gain access to things that are needed but not available in the location. This model therefore, helps to explain the role interaction between regions.

Literature review: It is virtually impossible to imagine any sphere of human endeavor today where computer are not in use either as a main stay or as support. While some of the applications are very widespread for example record-keeping and word processing other are currently undergoing major expansion such as simulation, communication and artificial intelligence. OECD (1997) defined information and communication technology as a combination of manufacturing and services industries that capture, transmit and display data and information electronically. The important factor in this broad definition is that, as it breaks the traditional dichotomy between manufacturing and services, activities producing and distributing ICT producing can be found everywhere in the economy (OECD, 2002). The definition thus, paves way for understanding the multi-dimensionality of the ICT and its applicability in helping reduce poverty across various sectors.

The sense that the world is the middle of a continuing communication revolution has been strong since the 1960s when television made its great breakthrough. It was then that the Canadian writer on communication, Luhan made a memorable statement in 1964 that “the medium is the message” and that the world was becoming a global village. It was then too, that the world “medium” became part of daily speech, covering not only electronic media, live television, but also older print media, particularly the press.

Competence in communication ability is central to all issues relating to interpersonal relationship. Relationship being an interpersonal process cannot be conceptualized as being fixed (Ducks, 1998). For this reason, relationships are always in a state of flux, continually going through stage of change and maintenance, growth and retreat (Arason *et al.*, 1998). This process is developed through communication; hence as individuals define and redefine their relationship, they share their understanding of the needs create a sense of a mutually understanding (Acitellu, 1992; Fletcher and Finchman, 1991). It is the fact that computer and mobile telephone have revolutionized communication and by extension interpersonal relationship hence influencing intimacy and the closeness that exist between people. It is also understood (Smith and Mackie, 1995) that interaction helps people master the world and find liking. Interesting studies have been conducted where communication enhancing technological-devices have been considered as major research variable. For example, it has been suggested that it is possible in distributed on line multiplayer games to talk to each other. This might not only influence games performance, but also social interaction.

Halloran *et al.* (2003) in a 10 week study of a fixed group of adult gamers, found that not knowing who is talking affects games performance differently accordingly to the type of game. In team-based war games, it can have a negative effect both on learning and coordination, but in race games, where individual rather than teams complete, it appears generally not too matter. In contrast, the impacts of not knowing who is talking on social interaction is the same regardless of game type, while the social experience can be highly enjoyable, it is difficult for gamers to get to know each other.

Another study (Lundell and Dishman, 2004) describes design directions for liquidation computing to facilitate social interaction. The study if focuses on elders coping with cognitive decline and their caregiver. Social needs barriers were examined in a qualitative study of 45 households across the US direction for liquidation concepts, an ambient are outlined to address these social needs and barriers. Two-example concept, an ambient display to facilitate joint activity and a social memory aid, are use as independent variables. An underlying principal of these design direction and concepts is the use of computing technology as catalysts rather than substitute for human relationship. These concepts are part of an integrated system of home health technologies under development in a multiyear “again in place” study. A particular study (Karahalious and Donath, 2004) adopted the terminology telemetries, which is an abstract audio-video installation that seeks to initiate and sustain interaction between and within 2 remote spaces, to improve the social aspect of casual mediated communication by incorporating events into the design of the communication medium that encourage people in interaction when they otherwise would not. Such events as this were called social catalyst, for they are understood to encourage people to initiate and sustain interaction. The social catalysts introduced in the study were found quite capable of sustaining interaction.

In another study, Fash (2003) carried out a formal analysis of behavior of social agent that can be individual agents of aggregation of agents. The central ideal examined in the study is that stability and regulation of activity within a multi-agent system can be accounted for by means of a complex web of role, commitment, obligation and right. In particular, commitments are considered to be the attitudes that hold a group together. In pursuit of their own objectives as well as in order to support their collective commitment, agent adopt role and undertake social commitment. Thoresson (2003) in his study introduces photo phone entertainment (PPE), application for mobile and wireless devices with camera functionality and describes a number of design examples

of such application. He design the application for people waiting for a few minutes at a bus stop among whom he found that the design encourage some form of social interaction such as collaboration with, or competition against users in the bus stop.

Social interaction is a general term that covers the reciprocal influence between two or more persons or groups in a social system. Chen *et al.* (2004) explained social interaction as capable of producing several visual patterns, which are related to many parameters, such as presence (how many), identity (who), relationship (who to whom) and environment (where). Fash (2003) identified four interaction systems, namely: a set of units which interacts with each other; a set rule or code which structure both the orientation of the units and interacting agents themselves; an ordered or pattern system or process of the interaction itself, i.e., the way an individual understands and practices the dictate of the norms sanctioned by the society and an environment in which the system operate and with which systematic interchange take place. This is the fair degree of consistence in which the individual's behaviour harmonizes with his specific personality construct.

Referenced to social interaction pattern in this study shall fall within the content of the explanation under 'd' above, i.e., what extent can the individual typical social personality construct be a function of what motives the most frequent of his social interaction engagement. Hence, Arthur's (1980) categorization of social interaction pattern shall be adopted to describe the paradigms of social interaction attribute in this study. These categorization are:

- Instrument social interaction pattern which can be explained as a situation where social interaction is divested to achieve a premeditated end, e.g., interacting with an influential member of the society to gain social recognition, or an interaction strictly based on investment-profit business ethics.
- Cooperative social interaction pattern 'which described the most pro-social of the three categorizations. Social interaction, is here, characterized by affiliate inclination motivated only by the needs to associated and interact, e.g. being prominent in a group whose goal is to promote social activities.
- Competitive social interaction pattern' which described an interaction governed by an undisguised strong need to attain a goal at the expense of other contenders, for example being very visible in a group because it is the winning group or has a potential to win in the nearest future. All these categorization do often characteristic both the individual or group motivation to interact at different social levels.

MATERIALS AND METHODS

This study focuses on the methodology for this research and it involves the methods of data collection and methods of data analysis.

Instrument of data collection: The major instrument used for collection of data is questionnaire alongside with personal interview and personal observation. Questionnaires were distributed to the GSM operator in Ladoko Akintola University of Technology, Ogbomoso. The questionnaire was divided into 2 sections, namely A and B. Section A deals with personal data of the respondents while section B deals with research questions.

Method of data collection: For the purpose of this research, the following methods of data collection were used.

Primary methods

Observation: This involves gathering of information through directly observing the phenomenon to be described.

Questionnaires: The techniques used here is that the research draw up some set of questions and require opinion the. It is commonly used where factual information is required.

Interview: Here, the researcher organized a face-to-face talk or oral personal interview with the respondent in order to elicit relevant information concerning the study objectives. This interview was conducted orally and is the most useful tool in scientific research method.

Secondary methods: Information was gathered through the use of documented materials such as journals, existing literatures on information technology, report and textbooks, proceeding of seminars newspaper etc.

Data processing and analysis procedure: The information and data obtained on the field through the use of questionnaire interview and documented materials were analyzed using the descriptive and analytical tools.

The analysis of demographic and socio-economic characteristics of the respondents was carried out from the questionnaire and analyzed using simple statistics supported by series of table showing percentage distribution of some variable. Chi-square was used to test the hypothesis of this study.

RESULTS AND DISCUSSION

Demographic characteristics of the respondents: The respondent age distribution shows that student below 21 are 10%, 22-30 interval has 83.33% while, the 31-40 age interval has 6.7%. This means that majority of the user of GSM in campus fall between the ages of 22-30.

The marital status of the respondent was considered. It was also discovered that 93.3 were single while 6.7% of the respondents were married. This shows that majority of the student are single and have less responsibility.

Analysis of respondents response based on research question: This socio-economic importance of GSM prompted to ask the respondents whether there is benefit accrued. The respondent agreed that there are a lot of benefits associated with the usage of GSM as shown in Table 1.

It was discovered that the respondents derived a lot of benefits from the services provided by the GSM network. Removal of barrier of distance, improvement in services delivery, enhancement of knowledge and improvement of relationship were mentioned among the benefit accrued to students of Ladoke Akintola University of Technology.

Table 1: Benefits of GSM

Response	Respondent	Percentage
Yes	60	100
No	-	-
Total	60	100

Source: Author's filed survey, September, 2007

Table 2: Socio-economic impact of GSM

Response	Respondent	Percentage
Yes	60	100
No	-	-
Total	60	100

Source: Author's filed survey, September, 2007

Table 3: Problem of GSM services

Problems	Strongly agreed		Mildly disagreed		Disagreed		Total	
	Response	(%)	Response	(%)	Response	(%)	Response	(%)
Poor service	54	90	6	10	-	-	60	100
Low coverage unhealthy	50	83.3	10	16.7	-	-	60	100
Competition	51	85	7	11.7	2	3.3	60	100
High tariff	60	100	-	-	-	-	60	100
Interaction problem	47	78.3	10	16.7	3	5	60	100

Source: Author's fields survey, 2007

Table 4: Solution to the problem

Problems	Strongly agreed		Mildly disagreed		Disagreed		Total	
	Response	(%)	Response	(%)	Response	(%)	Response	(%)
High quality	60	100	-	-	-	-	60	100
Wider coverage	58	96.7	2	3.3	-	-	60	100
Low tariff	60	100	-	-	-	-	60	100
Regulation of competition	54	90	6	10	-	-	60	100
Better interconnection	53	88.3	7	11.7	-	-	60	100

Source: Author's fields survey, September, 2007

Table 2 shows the socio-economic impact on student. The table confirmed that the entire respondent agreed that GSM has socio-economic impact on students.

Respondent were asked to respond on some of the problem associated with GSM services and Table 3 shows some of the problem responded to by the respondents.

The problems as shown above revealed that 54 respondent (90%) strongly agreed that poor service is one of the constraint of GSM in Nigeria while the remaining 10% mildly agreed. On the problem of low coverage 83.3% of the respondents strongly agreed that one of the problems of GSM service in Nigeria is low coverage while 16.7% mildly agreed. Unhealthy is another constrain as shown in Table 4.5 above, 85% of the respondent strongly agreed to this, 11.7% mildly agreed while the remaining 3.3% disagreed.

All the respondents agreed that the tariff on the GSM service is too high.

Solution to the problems mentioned in Table 4 were listed above in Table 5. All the respondents strongly agreed that high quality service is one of the problems of GSM service in Nigeria. On wider coverage, 96.7% of the respondent strongly agreed that wider coverage is the solution to the problem of poor network while 3.3% mildly agreed. On low tariff the entire respondents strongly agreed that low tariff is the better than high tariff.

Other solutions mentioned by the respondent are regulation of competition (90%) and better interconnection (88.3%).

Hypothesis testing: This is used to test whether the assumption agrees with the observed fact or not. The statistical tool employed here is chi-square (X^2).

Chi-square (X^2) is a statistical tool that weights the square deviation of an observed frequently. The value of (X^2) calculated is then compared with a table value of (X^2),

Table 5: Analysis of hypothesis based on table

Response	Observed frequency (fo)	Expected frequency	Fo-Fe
Yes	60	30	30
No	0	30	-30
Total	60	60	

chooses at a specified level of significance and a degree of freedom. In this analysis 5% (0.05) level of significant is used.

The degree of freedom can be calculated using this formula.

$$V = (r-1) (c-1)$$

V = degree of freedom, r = number of rows and c = number of columns.

For the purpose of this research work the hypothesis are given.

Null hypothesis (H₀): That Global System of Mobile communication (GSM) does not have impact on socio-economic development of students.

Alternatively Hypothesis (H₁): That Global System of Mobile communication (GSM) has impact on socio-economic development of students.

Decision rule: When x² calculated is greater than x² tabulated, alternative hypothesis (H₁) would be accept but when tabulated is greater than x² calculated Null hypothesis.

$$\text{Chi-square } (x^2) = \frac{\sum(Fo - Fe)^2}{Fe}$$

Fo = Observed frequency.

Fe = Expected frequency.

$$\begin{aligned} \frac{\sum(Fe - Fo)^2}{Fe} &= \frac{(30)^2}{30} + \frac{(-30)^2}{30} \\ &= 30+30 = 60 \end{aligned}$$

x² calculated is 60.

At 5% (0.05) significant level with the degree of freedom.

V = (2-1) (2-1)

x² tabulated = 3.84.

Decision: Since, x² calculated (60) is greater than x² tabulated is (3.84), therefore the Null hypothesis (H₀) is hereby rejected and alternative hypothesis is accepted

(H₁), which states that Global System of Mobile Communication (GSM) has impact on socio-economic development of student.

Social benefit of GSM

Mobility factor: One of the most appealing aspects of wireless communication is its mobility. Much of the success of GSM is due to its mobility management, offering users the freedom and convenience to conduct business from almost anywhere at any time. Mobility made it easier for people to communication without being tethered to a will or a terminal or even a specific geographical location-serving human need to communicate and thus achieving its intended purpose.

The ability of people to originate and receive calls and access subscriber's telecommunication services on a profound impact on society. The emergence of mobility has shifted voice from location-network knows the content (location) you are in. This has led to the development of more precise location technology. i.e., callers in unfamiliar surrounding can be located and reached more speedily by the fire, police and ambulance services and thus relief efforts can be coordinated more easily.

Having a mobile phone removes the physical boundaries of today's static office structure and allows people to communication and conduct business without restriction. It has granted us unprecedented flexibility and convenience while being more accessible.

Personal communicator: Global System of Mobile (GSM) technology changed the ways in which individual conduct their everyday lives. Many have formed the way in which individual conduct their everyday lives. Many have formed a deep personal attachment to their handsets (GSM white paper) and it has become a technology that people have become dependent on.

Almost no other item is carried everywhere by people in quite the same way as a mobile phone. It is far easier, to make a fashion statement with a gadget that accompanies home.

Today, people can choose between various models to match changing usage needs differing lifestyles and individual preference. In this regard no other mobile platform can boast as wide a variety or more configurable range of mobile devices as GSM. Owners are increasingly customizing their phones' sounds, turning mobile phones into an avenue for self-expression. Programming of melodies of the latest hit songs, in place of a standard ring tone, has become very popular.

While, the public display and musical capabilities of mobile phone have become a valued means of self-expression, it is the functional aspect and ability to enhance social communications that has had the most profound impact. In a role we may choose to define as the personal communicator, GSM has made its presence felt in almost every region of the world. It has changed the nature of communication, allowing not only voice, but textual modes, opening new creative forms of expression.

GSM's rapid spread and vast reach has brought the mobile phone straight into the hands of unprecedented numbers and varieties of individuals throughout the world. It has often than not, exclude from the world of telecommunications and is now helping to shape the emerging world.

CONCLUSION AND RECOMMENDATIONS

This research work has confirmed the position and role that communication plays in the socio-economic development of a Nations. It was carried out with absolute care and diligence and it shows that in order to consolidate on the level of achievement of the GSM presently enjoying, much more improvement must be welcomed. These include, reduction in tariff, improvement in the level of services rendered to the people, wide coverage of the Nation (especially the rural area) and above all, better connection among the services provide so as ease the interconnectivity problem currently facing by the subscriber.

There is no doubt that communication has greatly influenced the way people live, work and play worldwide. New emerging technologies challenge the traditional process of communication and aided increase access to IT in the home, at work and in educational establishments. On the aggregate, GSM phone user appeared to possess an interpersonal enhancing property which was able to reduce the effect of distance on communication values among social actors. Therefore, in line with this research finding the following are recommended:

- The present level of penetration is high and therefore, all the service providers should intensify effort to make the maximum use of this high penetration, in order to enlighten the populace on the socio-economic developments that are attached to GSM phone usage.
- The tariff of all the service providers are too high, therefore, it reduces number of user that suppose to be on-line. In order to reverse the trend, the charge deducted by the providers should be reduced so as to encourage more users.

- Also, quality services should be rendered to the subscribers while the competitions are regulated. Because, some of the operator exploit the customer in the name of promo. Better interconnection is another suggested solution by my respondents. When there is no good interconnection between all the service providers, the subscribers feel the pain.

Finally, more advantage (both social and economic) should be added to the GSM i.e., more exciting things should be put into the system; so as to give the subscribers the opportunity to explore all the social and economic benefit of the GSM to the users especially the University students.

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