Patterns of GSM Usage among Nomadic Fulani in North-West Nigeria

Chidubem Christian Ngwu; Luke I. Anorue & Okwudiri Ekwe

Abstract
This study investigates the patterns of GSM usage among nomadic Fulanis in North-West Nigeria. In conducting this study, the researchers used explanatory sequential design to generate quantitative and qualitative data. The entire population of the study covered nomadic Fulani- 1,789,142 and 1615 Online customer care representatives drawn from MTN, Globacom, Airtel and Etisalat. A sample size of 401 was drawn using Australian Calculator as provided by the National Statistical Service (NSS). After the analysis, findings indicate that majority of nomadic pastoralists in North- Western Nigeria use GSM phones in communicating with others to a large extent. Also, it was discovered that nomadic pastoralists in North-Western Nigeria use their phones mainly for voice calls only than sending messages. In fact, majority of the nomads cannot read nor send text messages. Finally, it was found that majority of nomadic Fulani in North West have problem sharing their concern with customer care representatives.
Keywords: Nomads .GSM .Voice calls .Customer care .Communication

INTRODUCTION

In Africa and some parts of South Asian countries like Pakistan, Afghanistan, Bangladesh, Nepal Bhutan, Sri Lanka and India, nomads constitute very significant part of their population. Sharma (2011, p.11) citing Rao and Casimir (2003) writes that South Asia is home to the world's largest and most diverse nomadic population. For instance, India alone is estimated to have a nomadic population of at least 60 million which constitutes about 10 percent of the country's population. Nomads, who are seen as those who do not have a permanent place of domicile because of their culture or occupation, are found in more than 20 different countries across the Africa continent and constitute over 9 percent of the African population. Nomads in Guinea and Nigeria are among the largest ethnic group representing about 40 percent and 6.6 percent of the population respectively. In Nigeria, there are over 9.3 million nomads constituting over 6.6 percent of the country's population (Aderinoye, Ojokheta and Olojede, 2007, p.5).

Basically, nomads are broadly categorized into three groups: pastoralists (herdsmen), migrant hunters/food gatherers/farmer and itinerant fishermen.

Fulani nomads who are at the centre of this research work are traditionally known as the Fulbe, Peuls, Maccube, Mbororo, Wuro among others. The Fulani peoples popularly referred to as the Fulbe or Peuls are among the most widely dispersed and culturally diverse people in all of Africa. Many Fulani trace their roots to the Senegambia area. By the eighteenth century, some had migrated eastward to the Niger and Benue Rivers in Nigeria. In the eighteenth and nineteenth centuries, some Fulani populations adopted the Islamic religion and initiated jihads in several parts of West Africa. Today, one finds both nomadic, pastoral Fulani (mbororo'en) and settled Fulani (Fulbe wuro) in all parts of Nigeria. The official language of the Fulani is known as Fulfulde (or Fula or Pulaar) with at least five major dialects- Futa, Toro, Futa, Jallon, and Masina. They are called Fulani or Fulanis (whether in singular or plural sense) by the Hausa (Musa, 2012, p.11).

Traditionally, the Fulani communicate in two distinct ways - verbal and non-verbal. For verbal communication, local Fulfulde dialects are used. However, because of intermarriage with Hausa ethnic group, they sometimes interact in Hausa language. These languages are used in everyday transactions and the passage of oral tradition to the younger generation. These dialects are also used in traditional songs like *Zaghareet or ululation.* Music is played at many occasions- during herding of cattle, working in the fields, during domestic work, marriage and child naming ceremonies or at the temple. For a Fulani man, music is extremely important to the village life cycle. In the non-verbal context, nomadic Fulani communicate messages using symbols and musical instrument such as *hoddu* (a plucked skin-covered lute similar to a banjo) and *riti* or *riiti* (a one-string bowed instrument similar to a violin) (Umeh, 2011,p.13). Grazing routes also communicates messages to young herders who learn how to identify pathways during herding. Specific trees and footprints are equally used to communicate resting points and direction of colleagues respectively.

With the introduction of Global System for Mobile communications (GSM) in 2001, a more sophisticated and highly dynamic means of communication was opened to all Nigerians to communicate effectively without having to bother about the inefficiency of Nigeria Telecommunication Limited's (NITEL) landlines. Ademola, Olusegun, & Kehinde (2013) observe that in year 2001, the National Communication Commission (NCC) held an open auction for GSM licenses which were issued to MTEL, operating as M-TEL, South African Telecoms Company, operating as MTN and a consortium led by Zimbabweans as ECONET Wireless. The entry of these mobile operators immediately changed NITEL's control of the communication market. Consumers saw that mobile phones offered better opportunities than the limited fixed line infrastructure offered by NITEL (Ademola, Olusegun, & Kehinde, 2013, 11).

Within few years of mobile communication in Nigeria, many embraced it. In 2012, the number of GSM subscribers in Nigeria hit 74,770772 (Smsshop247.blogspot.com cited in Onyebuchi, 2013, p.50). The figure rose to 167 million in 2014 (NCC, 2014). However, studies have shown that mobile communication in Nigeria is urban centred as less number of rural people use mobile phones when compared to their urban counterparts. The absence of GSM network providers and economic challenges in most rural areas in Nigeria are some of the problems easily cited for low usage (Danladi 2011, p.78). Lending credence to this, Ndolo (2006) writes that "close to 70 percent of Nigerians live in the rural areas and close to that percentage are illiterate by Western standards".

Nomadic Fulani who fall within the purview of rural people present even a worst situation. This is because, aside their migratory nature, they live in temporal rural homes. This explains why Muhammed and Abbo (2010) call them "hard-to-reach". In fact, most of their grazing routes are in core rural communities without mobile connectivity. Illiteracy and cultural influence may also impede significant usage of mobile phones among them. However, this does not diminish the fact that some of them, especially those in nomadic schools, use mobile phones for various activities (Danladi 2011, p.79).

The findings of Oostrum *et al* (2011), revealed the fact that nomadic farmers and pastoralists use mobile phones to communicate with love ones and customers. Daniel (2013) also found in her study that nomadic Fulani use mobile phones to communicate with veterinarians to attend to their flocks, their radio teachers (for those in nomadic school programme) and love ones.

The fact that they use this new means of communication that is alien to them has equally thrown up the question of patterns of usage. Basically, it will be interesting to ascertain what the nomadic Fulanis do with mobile phones. This will enable one understand the extent of usage.

Statement of Research Problem

Available literature in the area of rural communication has revealed that rural sedentary farmers and nomadic pastoralists are gradually accepting new means of communication that are alien to their cultures. One of such new means of communication is the use of GSM phones which was introduced in Nigeria and other parts of West Africa in the early 2000s. While some studies have revealed that some sedentary farmers, nomadic Fulani pastoralists and nomadic fishermen in Nigeria now use this technological means of communication in their daily lives, there appears to be no enough studies that have documented their patterns of usage especially among nomadic Fulani pastoralists. This is because, apart from the fact that they (nomadic Fulanis) are largely illiterate and live in core rural areas, they are constantly on the move in search of greener pasture for their flock which is their major source of livelihood (Oostrum *et al* ,2011; Danladi 2011, Bruijn, Oostrum, Obono, Oumarou and Boureima, 2011 and Daniel, 2013).

Considering the fact that over 89.7 percent of nomadic Fulani are illiterate and without permanent place of domicile, many observers are keenly interested on the extent to which nomadic Fulanis use mobile phones to communicate, the kind of operations they perform with their phones and the frequent challenges encountered. An investigation into these will no doubt reveal their patterns of usage. Therefore, this study investigates the patterns of GSM usage among nomadic Fulani in the North-Western states of Nigeria.

Research Questions

In line with the objectives of this study, the researchers asked the following research questions:

1. To what extent do nomadic Fulani in North West Nigeria use mobile phones in their daily lives?
2. To what extent do nomadic Fulani in North West Nigeria make voice calls with their GSM phones?
3. To what extent do nomadic Fulani in North West Nigeria use short message service (SMS) in their GSM phones?
4. To what extent do nomadic Fulani in North West Nigeria use their mobile phones to surf the internet?
5. How do nomadic Fulani in North West Nigeria communicate with Online Customer Care Representative whenever they have challenges?
6. What challenges do nomadic Fulani in North West Nigeria encounter in using GSM services?

Literature Review

Nomadic Fulani and the Use of GSM

Traditionally, Fulani nomads communicate messages using symbols and musical instrument such as *hoddu* (a plucked skin-covered lute similar to a banjo) and *riti* or *riiti* (a one-string bowed instrument similar to a violin) (Umeh, 2011,p.13). In most cases grazing routes also communicates messages to young herders who learn how to identify pathways during herding. Specific trees and footprints are equally used to communicate resting points and direction of colleagues respectively. Danladi (2011,p.78), identified another form of communication among the nomads-nomads-animal communication. He observed that "a Fulani herdsman sees his communication with his flock as the reason for his existence". This explains why a nomad is always in communication with his cattle during and after grazing.

Although the forms of traditional means of communication mentioned above still exist and much in used, they have been altered by the presence of technologically driven communication. The advent of Global system for mobile communication (GSM) has redefined the way nomads all over the world communicate. Scholars observed that

mobile communication through GSM phones has bridged distance and won new friends within the nomads' enclave (Danladi, 2011, p79).

The use of mobile phones among nomadic communities is now pervasive. Dyer (2009) cited Sharma (2011) writes that in mobile boat school in South Asis, "external animators are phoned up as a boat arrives at an agreed point and each spends five days each month living on the boat and working with teachers and children". In a limited development, Gough and Grezo, (2005) found that in Ndebe, a rural community in South Africa, rural nomadic farmers are using phones in their daily lives. However, when one considers this in the context of a community in which access to education is not universal, the data are more understandable. The combination of illiteracy and indigenous languages clearly has dramatic effects on the use of SMS messaging. The study showed that most of the rural people surveyed used more of voice call than text messaging. Gough and Grezo, (2005) concluded that nomadic Ndebe people accepted mobile means of communication but are having some challenges in using it.

In 2012, Anand, A. Pejovic, V., Johnson, D., and Belding, E. of the University of California, Santa Barbara, USA, conducted a study, *VillageCell: Cost Effective Cellular Connectivity in Rural Areas,* in two rural areas in Africa- Macha and Dwesa. Both villages are core rural Africa. However, Macha is located in one of the world's poorest countries (Zambia, while Dwesa, although itself very impoverished, is a part of the richest country in Africa (South Africa). The survey was initiated to evaluate patterns of GSM usage among the rural nomads in the two communities.

It was found that majority of the rural nomads depended on voice calls as text messaging was only within the reach of the educated. According to Anand, Pejovic, Johnson, and Belding (2012, p.1) "voice communication is extremely important in rural areas of the developing world. The lack of transportation infrastructure, high illiteracy levels, and migrant labor are some of the characteristics of rural areas that emphasize the need for real-time voice communication other than text messaging. Most of the respondents interviewed in the two communities showed high preference for voice calls.

However, it was found that making voice call in the communities was relatively expensive and poor network access characterized the entire process. The study cited heavy traffic occasioned by small bandwidth as the major problem. This made connectivity between people to be and expensive.

In conclusion, the study found that Villagecells solves an important problem of providing localized voice connectivity for the two nomadic communities studied.

Florian M. Stammler in 2009 conducted a study on mobile phone revolution in the Tundra community among Russian reindeer nomads. The researcher used ethnography research method to investigate how the reindeer nomads in Russia were embracing mobile technology and the problems associated with. The study found that at first, these nomads could have access to mobile technology because of their rural and mobile nature. According Stammler (2009), "all these advances in telecommunication were restricted to settlements, and nomads could find out about them only by travelling to the villages on reindeer." Another was that when mobile technology was introduced against the snowmobile that was in place, "nomadic camps on the tundra are either not equipped with GPS devices and cannot send their location to pilots, or they are not using the devices because they themselves do not need or trust them, as I have seen in the Yamal and Bol'shezemel'skaia tundra" (Stammler 2009). Another problem of mobile communication identified in the study was energy. It was found that most of the nomads had problem powering their mobile phones. Most of them depend solely on solar and generator to power their phones. The survey also unravel the fact mobile communication has gradually taken away the excitement usually felt when one see a relation after a long time. According to a respondent, Elena, used in the study, "this excitement when visiting people after a long period had somehow gone, since now they could talk every day". Stammler (2009) however maintained that "although she definitely did not mean to

complain about the negative impacts of mobile phones, her thoughts are telling about possible cultural implications. A means of distance communication might reduce live communication."

Okeibunor, J., Onyeneho,N., Nwaorgu, O., Aronu, N., Okoye, I., Iremeka, F. and Sommerfeld, J in 2013 conducted a survey on the prospects of using community Directed intervention strategy in delivering health services among Fulani Nomads in Enugu State. This study which used exploratory qualitative method where forty focus group discussions (FGD) were held with members of 10 nomadic camps in 2 LGAs in Enugu State, as well as their host communities, revealed that mobile phones are used by the heads of nomads' community (Ardo) to mobilize his people for health interventions.
The study concluded that communication using mobile phones in nomadic communities is very effective.

In another study conducted in Nepal in 2014, Nepalgunj, found that nomadic population in that country were beginning to embrace mobile technology like phones. Nepalgunj (2014) writes that: "Rautes are getting drawn towards modern technologies. They enjoy talking on mobile phones when somebody lets them use it. A Raute Chief, Surya Narayan Shahi says that he feels delighted talking on mobile phones". However, the research found that only voice calls were in place as text messaging was only meant for the educated.

These studies point to the fact that the nomadic communities all over the world are embracing mobile technology and this has changed their traditional patterns of communication. However, majority of the nomads studied relay mostly on voice calls.

Challenges of GSM Usage among Nomadic Fulani

Mobile phone technology, no doubt, is very important in human community for effective and real- time communication. This explains why many see it as indispensable at this point in human history. In Africa, many urban and rural communities have come to appreciate the need for technologically driven communication channel that puts one in touch with others around the globe. The coming of the global system for mobile communication GSM has just done that. In fact, from the invention of wireless telegraph in the eighteen century to the coming of GSM in the nineteen century, efforts have been made by many to improve human communication.

One of the fundamental problems nomadic Fulani have in acquiring mobile phone is poverty. Just like the case with most rural settlers, the nomads have problem buying phones. While it is established that virtually every family head in the *ruga* (nomads' home) has mobile phones, their subjects, children and wives hardly acquire mobile phones. This is because many poor Fulani still see access to mobile phone as a luxury they cannot afford. In cases where they buy, it takes very long period to replace in case of loss. The quality of the phones they buy is even an issue. Many studies have shown that rural people go for low-cost China made handsets that have durability problems (Danladi, 2011, p.30).

Another problem associated with nomads use of mobile phone is the issue of illiteracy. Daniel (2013, p.45) revealed that more than 89 percent of nomadic Fulani are illiterate by western standard. And this has made it difficult for them to embrace certain technologies in nomadic education. When it comes to using mobile phones, the nomads that already have access use them mainly for voice calls. This is because text messaging requires some form of literacy in any language of choice. According to Anand, Pejovic, Johnson, and Belding (2012, p.1) voice communication is extremely important in rural areas of the developing world. This is because of high illiteracy levels. Anand, Pejovic, Johnson, and Belding found in their study that majority of the rural nomads depended on voice calls as text messaging was only within the reach of the educated.

Apart from text messaging problem, most nomadic Fulani according to Umeh (2011,p. 23) subscribe to different package on the network that they are subscribed to. This

has often resulted in serious conflict between them and the online customer care representatives of these networks.

One of the daunting challenges the nomadic Fulani have in using mobile is lack of energy in charging their phones.

The problem of poor network connectivity in the rural area is another problem that affects the ability of the nomads to use mobile phones. Majority of rural communities and grazing routes do not have good network connectivity. This has indeed made it difficult for nomadic Fulani to have good reception while making calls.

Theoretical Framework

In order to give this study theoretical backing, two theories are used to situate this study. They are Technology Acceptance model and Uses and gratification theory.

Technology Acceptance Model

Technology Acceptance Model (TAM) was developed by Fred Davis and Richard Bogozzi in 1989. The model explains how people come to accept and use technologies that alien to their culture for whatever purpose they deemed necessary. Olorede and Oyewole (2013, p. 4) explains that the theory postulates that the acceptance and rejection of a particular technology by an individual depends on how the individual perceives that technology to be useful to him. Some factors such as Perceived Usefulness (PU), which include relative advantage, attached prestige and cost effectiveness, and Perceived-Ease-of-Use (PEOU), are significant in peoples' choice of acceptance of technology. Olorede and Oyewole (2013, p. 4) further explain that "people could be reluctant to accept new technologies because of the technologies' complexity and element of uncertainty which exists in the minds of decision makers with respect to the successful adoption of the technology".

The Model helps one to understand the factors behind the acceptance or rejection of GSM mobile phones by Fulani nomads in North West Nigeria. Some of them that have embraced mobile communication most have done so because of perceived gains in mobile communication. Those who have the means but refused to acquire mobile phone most have done so because they don't appreciate the gains.

Uses and Gratification Theory

Uses and gratification theory advanced by Blumler J. and Katz E in 1974 suggest that media users play an active role in choosing and using the media. Blumler and Katz found that users take an active part in the communication process and are goal oriented in their media use. These theorists say "that a media user seeks goes for a medium that best fulfils his needs. Uses and gratifications assume that the user has alternate choices to satisfy their need" (Blumler and Katz, 1974, p.5).

This theory explains that whenever someone exposes himself to a medium he derives some satisfactions and that the media are used to solve some needs. These could come in form of communicating with someone on mobile phone.

The relevance of this theory is that it helps one to understand that people who use mobile phone do so because of perceived benefits. Whenever people make use of phone to communicate to people not within reach, they derive some form of satisfaction. This is the e case of the nomadic Fulani who use phones to communicate with love ones and customer.

Methodology

Research Design

To effectively evaluate the patterns of GSM usage among nomadic Fulani, the researchers used explanatory sequential design. According to Creswell (2012, p.542) this design, "consists of first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results." The reason for this approach was that the

quantitative data and result provided a general picture of the research problem. This approach enabled the researchers to generate both quantitative and qualitative data using survey and ethnography research methods.

Population of Study

The peculiar nature of this study called for multiple approaches if the variables in the study must be investigated. To this end, the population of this study was divided into two segments. Segment one covered all the nomadic Fulani pastoralists in the entire North-Western states of Nigeria who are identified in *ruga*s or temporal grazing settlement, while the second segment comprised all the online customer care representatives that work in the four GSM service providers- MTN, Globacom, Airtel and Etisalat.

Segment 1

The population of study in this segment was all the 1,789,142 nomadic Fulani pastoralists who reside in the 996 known nomads' mobile camps and grazing routs in North-Western geo-political zone of Nigeria

Segment 2

The population for the second segment comprised all the online customer care representatives that work in the Hausa section of the four GSM service providers- MTN, Globacom, Airtel and Etisalat. According to information made available by the service providers, there are an estimated total of 1615 online customer care representatives that work for the four GSM service providers. A breakdown of this shows that MTN has 487; Globacom has 311, Airtel has 219 and Etisalat has 598. The Hausa speaking online customer care representatives were chosen because no of the service providers has Fulfulde section. In any case, over 86 percent of the Fulani understand Hausa. Online customer care representatives used in this segment were only interviewed as no questionnaire was given to them.

The entire population of the study is therefore, nomadic Fulani- 1,789,142 **+** Online customer care representatives 1615 = **1,790,757**

Sample Size

In calculating the sample size for this aspect of the study, the Australian Calculator as provided by the National Statistical Service (NSS) was employed to draw a sample of 385. However, an over sampling was done using Cochran over sampling formular recommended by Bertlett, Kotrlik and Higgins (2001,p.46) citing Salkind (1997,p.107) Fink (1995, p. 36) and Cochran (1977, p.396). A sample of 401 was finally drawn and used. Eight online customer care representatives that work in the Hausa section of the four GSM service providers- MTN, Globacom, Airtel and Etisalat, were purposively selected.

Discussion of Findings

The discussion in this section was guided by the six research questions raised in this study. Here, each research question was discussed based on the findings obtained from the analysis made.

Research Question One: To what extent do nomadic Fulani in North West Nigeria use mobile phones in their daily lives?

In research question one, the researchers sought to find out the extent to which nomadic Fulani in North West Nigeria use mobile phones in their daily lives. The result showed that 72.6% of the nomadic Fulani studied use mobile phones to communicate in their daily lives. The quantitative data generated also showed that 55.5 percent of them use mobile phones to some extent.

Qualitative data generated through interview and observation equally supported the fact that nomadic Fulani use mobile phone daily in communicating to their love ones and associate. The Ardos interviewed claimed that nomads have embraced new technology.

The findings made under research question one, is supported by a similar findings arrived at by Gough and Grezo, (2005). These researchers concluded that nomadic Ndebe people accepted mobile means of communication but are having some challenges in using it. The findings of Umeh (2011) also supported this finding.

Research Question Two: To what extent do nomadic Fulani in North West Nigeria make Voice Calls with their GSM phones?

In research question two, the researchers sought to find out the extent to which nomadic Fulani in North West Nigeria make voice calls with their GSM phones. From the quantitative data generated through questionnaire, 72.6 percent of the nomadic Fulani in North West Nigeria use their GSM phones to make voice calls. A follow up to this question also showed that 55.6 percent of the nomads use phones to make voice calls to a large extent. This shows that nomads are at home with making voice call using their GSM mobiles. This finding is supported by the findings of Anand, Pejovic, Johnson, and Belding (2012, p.1). According to Anand, Pejovic, Johnson, and Belding (2012, p.1) "voice communication is extremely important in rural areas of the developing world.

Research Question Three: To what extent do nomadic Fulani in North West Nigeria use Short Message Service (SMS) in their GSM phones?

Research question three dealt with the extent to which nomadic Fulani in North West Nigeria use short message service (SMS) in their GSM phones. First, the quantitative data generated and presented in tables show that 81.5 percent of the nomads do not sent text messages using their mobile phones. The result equally showed that only 11.7 percent of the nomads sent text messages. It was also found that 68.1 percent cannot read text messages sent to their mobiles and 72.6 don't read nor send text messages. It was found also that of the 11 percent that can send messages, only 5% can read and send messages in English. Qualitative data generated and presented equally supported the above position. From the comments generated, majority of the nomads can neither send nor read text messages.

This finding is supported greatly by the findings of Nepalgunj (2014). According to him, nomads prefer voice calls to text messaging because majority of them are illiterate.

Research Question Four: To what extent do nomadic Fulani in North West Nigeria use their mobile phones to surf the internet?

Quantitative data presented in the tables under this research question revealed that over 95 percent of the nomads do not use their mobile phones to surf the internet. The extent to which some do (less than 5 percent) is very low. In fact, the respondents appeared not to even know what the internet is in the first place.

This finding is supported by what Umeh (2011). According to Umeh, majority of nomads use phones to make voice calls and listen to radio. Anything outside that, one is on his own. Rao and Casimir (2003) equally lend credence to the position of Umeh.

Research Question Five: How do nomadic Fulani in North West Nigeria communicate with Online Customer Care Representative whenever they have challenges?

In research question five, the study sought to find out how nomadic Fulani in North West Nigeria communicate with Online Customer Care Representative whenever they have challenges. The quantitative generated through questionnaire indicate that 66.1% of the respondents do not contact customer care representatives. The result showed that only 28.5% of the respondents speak to online customer care representatives. For those who speak with customer care representatives, majority speak in Hausa language.

The qualitative data generated through interview with online customer care representatives also showed that majority of the nomadic Fulani find it difficult communicating with online representatives. In fact, the result showed that most of them relay on third party to get their concerns across.

Research Question Six: What challenges do nomadic Fulani in North West Nigeria encounter in using GSM services?

The analysis done under research question 6 showed that language, where to charge the phone, money to buy research card, illiteracy and poor network are some of the challenges nomadic Fulani encounter in using GSM phones. However, majority of them saw where to charge their phones as the major challenge. This finding is supported by those of Iliyasu (2012) and Eriksson, (2008).

Summary of Findings

At the end of the analysis, various findings were made. Key among them are hereunder summarized:

1 Nomadic Fulani in North West Nigeria use mobile phones in their daily lives to a large extent?
2 Nomadic Fulani in North West Nigeria make voice calls with their GSM phones to a large extent?
3 Majority of nomadic Fulani in North West Nigeria do not use Short Message Service (SMS) in their GSM phones?
4 Majority of nomadic Fulani in North West Nigeria do not use their mobile phones to surf the internet?
5 Nomadic Fulani in North West Nigeria have difficulties communicating with Online Customer Care Representative whenever they have challenges?
6 Nomadic Fulani in North West Nigeria have many problems using GSM services? The major problem they have is where to charge their phones.

Conclusion

From the findings of this study and the findings of other related studies reviewed, the researchers therefore conclude that majority of nomadic pastoralists in North- Western Nigeria use GSM phones in communicating with others to a large extent.

The researchers equally conclude that nomadic pastoralists in North-Western Nigeria make more of voice calls than text messaging. In fact, majority of the nomads cannot read nor send text messages.

Recommendations

Based on the findings made in this study and the conclusions reached, the researchers made the following recommendations:

1. The National Commission for Nomadic Education should step up its education campaign and ensure that more number of nomadic Fulani have access to formal education. This is because the result gotten from this study indicates that most of the respondents that are at home with GSM phones are students in nomadic schools.
2. The researchers also recommends that the National Communications Commission should come up with policies that will force the service providers to employ online customer care representatives that speak Fulfulde. This will help solve the problem of Fulani customers who cannot speak Hausa or English.
3. Again, Ministry of Information and Communication Technology should develop computer programmes that can translate text message sent in English into Fulfulde. This has been done in Kenya.

References

Aderinoye, R., Ojokheta, K., and Olojede, A. (2007). Integrating mobile learning into nomadic education programmes in Nigeria: Issues and perspectives. *The International Review of Research in Open and Distance Learning*. 8 (2). Retrieved March 2nd from http://www.irrode.org/index.php.irrodi/article/view/347/919.

Anand, A. Pejovic, V., Johnson, D., and Belding, E. (2012). *VillageCell: Cost Effective Cellular Connectivity in Rural Areas*. University of California, Santa Barbara

Balarabe Alkassim, Tosin Omoniyi & Ibrahim Kabiru Sule (Sunday, 14 July 2013). Tide of modernity sways Fulani lifestyle from the past. *Daily Trust Newspaper.*

Bertlett, J. E., Kotrlik, J. W. & Higgins, C. C. (2001). Organisational research: Determining appropriate sample size in survey research. *Information Technology, Learning and Performance Journal* 19(1), pp. 43-50.

Blench, R.M. (1994). *Fulɓe, fulani and fulfulde in Nigeria: Distribution and identity. In Federal Department of Livestock & Pest Control Services of Nigeria's National Livestock Resource Survey Working Paper series*. (23) 1-9 Brighton: IDS Working Paper 26.

Creswell, J. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research.* New Jersey: Pearson Education Inc.

De Beauvoir, S, (1949), *The Second Sex*. Middlesex: Penguin.

Ekwe, O. (2012) *An evaluation of the use of radio distance learning strategy in nomadic education in north western Nigeria*. An unpublished Master's Thesis, University of Nigeria Nsukka.

Eriksson, E. (2008). *A case study about cell phone use by people in rural Kenya.* Reports from MSI - Rapporter från MSI. Växjö University

Ezeomah, E. (1998). *The education of nomadic people: The Fulani of north Nigeria.* Britain: Oriel Press.

Fink, A. (1995). *The survey handbook.* Thousand Oaks, CA: Sage Publications.

Gidado Tahir (2007) Nomadic Life and the Implication for Education Provision. In Commonwealth of Learning and Commonwealth Secretariat SUMMARY REPORT

Gough, N and Grezo, C (2005). *Moving the debate forward*. The Vodafone policy paper Series (2).

Iliyasu, B.S. (2012). The place of Fulfulde in nomadic education in Nigeria. in *Journal of Igbo Language & Linguistics* (5), 121-124 retrieved on 4th March 2014 from ttp://www.linguisticsafrikana.com

Kaase, N., Kwagh., and Agen, M. (1996). *Problems of nomadic education in Gboko local government area of Benue State.* (Unpublished undergraduate project).University of Nigeria Nsukka

King, A, 1994, 'Literacy and the Travelling Communities' in M Hamilton, D Barton and R Ivanic (eds), *Worlds of Literacy*, Clevedon: Multilingual Matters.

Krätli, S, 2001, *Education Provision to Nomadic Pastoralists: A Literature Review*,

Mirjam de Bruijn, Kiky van Oostrum, Oka Obono, Amadou Oumarou, Dodo Boureima (2011). New mobilities and insecurities in Fulbe nomadic societies: a multi-country study in west-central Africa (Niger-Nigeria) ASC Working Paper 96 / 2011: African Studies Centre Leiden, The Netherlands

Muhammed, N., and Abbo, B. (2010). *Reaching the hard-to-reach nomads through open and distance learning: A case study of nomadic education programme in Nigeria.* A conference paper presented at the Sixth Pan Commonwealth Forum on Open Learning (PCEB) in Kochi Kerala, India.

Musa, L. (2012). Connectivity in the Rural area: Problem and prospects. Journal of New Media 3(2). 11-23.

Nepalgunj, J (2014). Nepal: Nepal's Nomadic Rautes Changing Their Way Of Life - For Good Or Bad?

Ngwu, C.C. (2010, March). *Community broadcasting and rural development: The Jigawa State experience.* Paper presented to the Department of Mass Communication, Enugu State University of Science and Technology (ESUT).

Nigeria Communications Commission (2014). Industry statistics. Retrieved March 24 2014 from http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=125&Itemid= 67

Ndolo, I.S. (2005). *Mass media systems and society*. Enugu Rhyce – Kerex

Okeibunor, J., Onyeneho,N., Nwaorgu, O., Aronu,N., Okoye, I., Iremeka,F. and Sommerfeld, J. (2013). Prospects of using community directed intervention strategy in delivering health services among Fulani Nomads in Enugu State, Nigeria. *International Journal for Equity in Health*, 12(24)

Pyramid Research (2010). *The Impact of Mobile Services In Nigeria: How Mobile Technologies Are Transforming Economic And Social Activities*. Retrieved March 12, 2014 from www.pyramidresearch.com

Reddy, T.B and Padmaja, M. 2013). *Indigenous knowledge and economic institutions among nomadic people in Tirumala Foot Hill Villages*. Global Research Analysis 2 (7)

Said, E W, 1978, *Orientalism,* London: Penguin.

Salkind, N. J. (1997). *Exploring research* (3rd ed.). *Upper Saddle River*, NJ: Prentice Hall.

Tahir, G., and Umar A. (2000). Distance learning for the provision of access to the unreached and minorities: The interactive radio distance learning scheme for nomadic pastoralists in Nigeria. *Journal of Nomadic Studies*, 3, 40-47.

Umeh, T. J. (2011). *Community radio and nomadic education in northern Nigeria: The Jigawa State experience*. Paper presented at SIFE regional conference in Abuja 20th July 2011.

Wimmer, R, and Dominick, J. (2011). *Mass media research. An introduction* (9th ed.). Canada: Wadsworth Cengage Learning

Zonali, N.U. (1971). *Education towards development in Tanzania.* Basil Pharos Verlag.

Dr. NGWU, C. C is a Senior Lecturer with the Department of Mass Communication, Enugu State University of Science and Technology (ESUT) Enugu, where he is the current Head of Department.

Dr. ANORUE, L. I. is a Senior Lecturer in the Department of Mass Communication, University of Nigeria Nsukka, where he is the current Head of Department.

EKWE, Okwudiri is a Lecturer with the Department of Mass Communication, Samuel Adegboyega University, Ogwa Edo State. ekweokwudiri@yahoo.com 08063810943